

HORTICULTURE

India is bestowed with a varied agro-climate, which is highly favourable for growing a large number of horticultural crops such as fruits, vegetables, root tuber, aromatic and medicinal plants and spices and plantation crops like coconut, arecanut, cashew and cocoa. Presently, horticultural crops occupy around 13 per cent of India's gross cropped area, producing 177.41 million metric tonnes during 2005-06. India is the second largest producer of fruits and vegetables. The total production of fruits has been estimated at 52.85 million metric tonnes from an area of 5.34 million hectares and vegetables has been estimated at 108.20 million metric tonnes from an area of 7.05 million hectares during 2005-06.

14.2 India is the largest producer of mango, banana, sapota and acid lime. About 39.5 per cent of the world's mangos and 11 per cent of world's bananas are produced in India. In grapes, India has the highest productivity per unit area in the world. India is next only to China in area and production of vegetables and occupies prime position in the production of cauliflower, second in onions and third in cabbage in the world.

14.3 India has also made noticeable advancement in the production of flowers. During 2006-07, the country produced 669000 of metric tonnes of loose and 27.23 million cut flowers from an area of 1.40 lakh hectares.

14.4 India is the largest producer, consumer and exporter of spices and spice products. The total estimated production of spices during 2005-06 was 4.86 million metric tonnes and the area covered was 3.20 million hectares. India is also largest producer and consumer of cashewnuts. The total production of plantation crops during 2005-06 is around 10.39 million metric tonnes from an area of 3.11 million hectares.

14.5 The emphasis for horticulture development is mainly focused through the developmental programmes of the Department of Agriculture and Cooperation such as the National Horticulture Mission, Technology Mission for Integrated Development of Horticulture in North-Eastern States, Sikkim, Jammu and Kashmir, Himachal Pradesh and Uttarakhand; Development of Commercial Horticulture and Capital Investment Subsidy Scheme of the National Horticulture Board (NHB); and Integrated Development of Coconut including the Technology Mission on Coconut.

14.6 Further, new initiatives on micro-irrigation; National Bamboo Mission; the establishment of the Central Institute of Horticulture, Nagaland; and the promotion of bee keeping through the National Bee Board have been taken for the development of the horticulture/ bamboo sector in India.

14.7 **National Horticulture Mission:** The centrally sponsored National Horticulture Mission (NHM), which was launched during 2005-06, was continued during 2006-07 for the holistic development of the horticulture sector in India, with an outlay of Rs 1000.00

crore. Eighteen States and two UTs were covered under the NHM during the year. The thrust of the NHM is on an area-based regionally differentiated cluster approach for the development of horticultural crops, having comparative advantage. In all, 259 districts have been taken up under the cluster approach and this includes 32 new districts added during 2006-07. The activities are carried out through the State Horticulture Missions of various States and UTs. Further, some components of the NHM are being implemented through various national-level agencies such as the National Committee on Plasticulture Applications in Horticulture (NCPAH), which coordinates and monitors activities relating to precision farming and hi-tech horticulture. Others include the National Horticultural Research and Development Foundation (NHRDF); the IFFCO Foundation; the National Seeds Corporation (NSC); and the State Farms Corporation of India (SFCI), for implementation and monitoring programmes relating to vegetables and quality production of vegetable seeds and planting material. The Directorate of Cashew and Cocoa Development (DCCD) is involved with the programmes relating to cashew and cocoa; and the Directorate of Arecanut and Spices Development (DASD) for implementation and monitoring of the programme relating to arecanut and spices.

14.8 The programme is being monitored regularly through field visits by joint inspection teams and area officers. A web-enabled monitoring system has also been put in place to monitor the physical and financial progress on a monthly basis.

14.9 An amount of Rs 771.86 crore was provided to the State Horticulture Missions (SHM) and national-level organisations during 2006-07. Funds have also been approved for the establishment of 1158 nurseries, bringing an area of 4.86 lakh hectares under new orchards and rejuvenating 0.64 lakh hectares of senile orchards; taking up organic farming in 0.49 lakh hectares; promoting IPM in 1.87 lakh hectares; and protected cultivation in 0.08 lakh hectares. Funds have also been approved for setting up 2281 cold storage facilities and 1083 markets.

14.10 Technology Mission for Integrated Development of Horticulture in the North-eastern States, Sikkim, Jammu and Kashmir, Himachal Pradesh and Uttarakhand: This Centrally Sponsored Scheme was launched during the Ninth Five-Year Plan period. The implementation of the scheme was later extended to the States of Jammu and Kashmir, Himachal Pradesh and Uttarakhand during 2003-04 in the Tenth Plan. The Tenth Plan outlay for the scheme was approved at Rs 845.00 crore for implementation in the aforesaid 11 states. The Small Farmers' Agri-Business Consortium (SFAC) is involved in coordinating the scheme.

14.11 Under the Technology Mission, funds to the States are made available on the basis of yearly action plans/proposals, which are approved by the State-Level Steering Committee under the chairmanship of the Chief Secretary of the State Government concerned. During the year 2006-07, an amount of Rs 157.00 crore was released, of which an amount of Rs 81.86 crore has been released to the North-Eastern States and Rs 75.63 crore to the hilly states of Jammu and Kashmir, Himachal Pradesh and Uttarakhand. This is against the overall allocation of Rs 278.40 crore consisting of Rs 150.00 crore for the North-Eastern States and Rs 128.40 crore for the hilly states.

14.12 Some of the major achievements made so far are bringing in an additional area of 117872 hectares and 25373 hectares, of various horticulture crops in the North-East States and three hilly states respectively, of which fruits cover (54973 hectares and 18925 hectares); vegetables (20979 hectares and 4658 hectares); spices (26950 hectares and 898 hectares); plantation crops (5252 hectares); medicinal plants (1652 hectares and 170 hectares); aromatic plants (4027 hectares and 135 hectares); and flowers (4039 hectares and 537 hectares). The increase in area under horticulture crops in the North-Eastern States over the pre-mission period (2000-01) is 34.00 per cent. Among the North-Eastern States, Sikkim and Mizoram recorded a maximum percentage increase of 72.00 per cent and 71.00 per cent in area, followed by Manipur (34 per cent), Nagaland (32 per cent) and Arunachal Pradesh (30.00 per cent).

14.13 In order to encourage women to be self-reliant and by taking advantage of the benefits under this scheme, several initiatives have been taken, the more prominent of which are:

- Organisation/identification of women groups which would act as a network for channelising the horticultural support.
- Need-based assessment of women farmers in terms of the horticulture support such as input support, technological support and extension support.
- Prioritising the activities of individual women groups on the basis of the need-based assessment.
- Providing adequate organisational and financial support to the women groups for themselves with SHGs.
- Providing technical training in horticulture and allied areas to women farmers.

14.14 So far, 18593 women entrepreneurs have been trained on different aspects of horticulture under this Mission.

14.15 The NHB is involved in the development of high quality horticulture farms in identified belts and in making such areas vibrant with horticulture activity as hubs for developing commercial horticulture, development of post-harvest infrastructure, strengthening of market information systems and horticulture data base. In addition, the NHB assists research and development programmes to develop products suited for specific varieties with improved methods and horticulture technology, provides training and education to farmers and processes industry personnel for improvement of agronomic practices and purchases new technologies.

14.15 Several innovative schemes launched by the NHB during the Ninth Plan have been made more broad-based and entrepreneur-driven. An outlay of Rs 100.00 crore has been earmarked for implementing these programmes during the year 2006-07. The major schemes of the Board are now back-ended capital investment subsidy schemes.

14.16 **Coconut Development Board Programmes:** The Coconut Development Board (CDB) implements programmes for the Integrated Development of the Coconut Industry

and Technology Mission on Coconut at a total outlay of Rs 150.00 crore during the Tenth Plan period. To achieve the objectives of integrated development of the crop, product diversification and by-product utilisation, the major thrust areas identified are production and distribution of quality planting material, and expansion of area under coconut, especially in potential and non-traditional areas. Other thrusts are improving the productivity of coconuts in major coconut producing states, developing technology in post-harvest processing, marketing activities and the integrated control of major pests and diseases. An outlay of Rs 40.00 crore was provided for implementing the scheme during 2006-07, of which Rs 18.00 crore has been released. Interventions by the CDB has enabled the diversifying of coconut products like desiccated coconut, coconut vinegar, virgin coconut oil and de-fatted coconut kernel products for enabling value addition and higher remuneration to the farmers.

14.17 Micro Irrigation: The Centrally Sponsored Scheme on micro irrigation was launched in January 2006 under the Tenth Plan for implementing drip and sprinkler irrigation in an area of 6.2 lakh hectares. The scheme envisages achieving greater water-use efficiency resulting in enhanced productivity and better quality of produce. Under this scheme drip and sprinkler irrigation is being promoted on a large scale. Assistance is provided to all categories of farmers at the rate of 50 per cent for drip/sprinkler system implementation and at the rate of 75 per cent for training and demonstration in each district of the State for both horticulture crops as well as non-horticulture crops. Further, training and demonstration being done by the Precision Farming Development Centres (PFDCs) at 17 locations through the National Committee for Plasticulture Applications in Horticulture. During 2006-07, the annual action plans of 16 States have so far been approved for implementation as per the guidelines and a sum of Rs 337.00 crore has been released to these States till December 2006 to cover an area of 3.31 lakh hectare.

14.18 Central Institute of Horticulture, Medziphema, Nagaland: Recognising the importance for institutional support for development of horticulture in the north-east, the Government of India approved the establishment of a Central Institute of Horticulture in Nagaland in January 2006, with a financial outlay of Rs 20.00 crore spread over a period of five years. The Institute is being set up at Medziphema in an area of 43.50 hectares. The objectives and the identified programmes of the institute are as given below:

- Capacity building by training of trainers, extension officers, farmers, entrepreneurs, processors and exporters.
- Demonstration of improved technologies such as use of improved varieties / hybrids, adoption of INM/IPM practices, Hi-tech farming, precision farming, protected cultivation, post harvest technology, etc.
- Follow-on extension support in the field of horticulture.
- Promotion of organic cultivation of horticultural crops.
- Establishing convergence and synergy among programmes in the field of horticultural research and development.
- Monitoring of centrally-sponsored programmes in the area of horticulture.

14.19 Activities in progress:

- The execution of developmental works such as fencing, land preparation and creation of irrigation sources at a total cost of Rs 1.23 crore was entrusted to the Central Public Works Department (CPWD), Silchar on 16 May 2006. Land development and fencing work is in progress.
- The Institute has temporarily set up its office at the campus of School of Agricultural Sciences and Rural Development (SASRD) at Medzhiphema in order that work begins immediately.
- A technical expert has been appointed for preparation of training manuals and identification of technology demonstration in the farmers' fields. A training manual on production of fruits in the North-Eastern States has already been finalised and is under printing.
- The master plan for the Institute has been prepared and has also identified suitable varieties of selected crops for the establishment of mother blocks at the institute and technologies for large-scale demonstration in the farmer's fields.
- The Institute organised a Master's training programme on advanced technologies on horticultural development between 26th and 28th May 2006 at the National Research Centre for Mithun, Jharnapani. There were 60 senior officers of state horticulture/agriculture departments who were involved in the implementation of various horticultural programmes in north-east states and who were given intensive training on advanced technologies on horticulture. They were also identified as master's trainers for imparting further training to farmers in respective states. A brochure highlighting the programmes of the institute was also released on the occasion.
- A regional workshop on cashew was organised in collaboration with the Directorate of Cashew and Cocoa Development, Cochin to discuss various issues related to development of cashew in north-east states.
- The Institute in collaboration with the National Bee Board and State Horticulture Department, Sikkim has organised a national workshop cum honey festival on the development of Apiculture on 16th – 17th June 2006, at Sikkim.
- The Institute in collaboration with SASRD, Nagaland University, has also organised a training programme on the protected cultivation of vegetables on 15th September 2006 at the SASRD campus.
- The Institute has collected mother plants of 15 selected varieties of citrus and has taken the necessary steps for establishing a 'mother block' of these selected varieties.
- The Institute in collaboration with the National Research Centre for Cashew have identified high-yielding varieties of cashew suitable for the region and has taken necessary steps for the establishment of a mother block of these selected varieties.

14.20 National Bee Board: In view of the importance of bee-keeping in India, recently in June 2006, the National Bee Board (which was formed in 2000 and registered as a society under the Societies Registration Act XXI of 1860, with PPP including the farmers, beekeepers, processors and other stakeholders), has been restructured. The Board primarily aims to provide overall development of bee-keeping in India by popularising state-of-art technologies relating to nucleus stock production, capacity

building and training of bee breeders and beekeepers, processing and quality control bee products, etc.

14.21 **National Bamboo Mission:** The Department of Agriculture and Cooperation is launching a new centrally-sponsored scheme -- the National Bamboo Mission -- with 100 per cent central assistance at an outlay of Rs 70.00 crore during 2006-07. The mission envisages the holistic development of the bamboo sector through an area-based regionally differentiated strategy.