

## EXECUTIVE SUMMARY

National Horticulture Mission (NHM) is a sub-scheme of Mission for Integrated Development of Horticulture (MIDH) which was launched as centrally sponsored scheme since 2014. NHM scheme is being implemented in all the districts of the State. It primarily aims at holistic growth of horticulture sector through an area based regionally differentiated strategies. The Government of India (GOI) contributes 60% of total outlay for developmental programme in all States and 40% share is contributed by the respective State Governments. The main objective of this impact evaluation was to examine the extent to which the NHM has actually met the desired objectives of each of the component that were implemented. The study covers the time period from 2015-16 to 2018-19.

The study followed the sampling design and size elucidated in the terms of reference. The study was carried out across ten districts in Karnataka. Three taluks were randomly selected from each district so as to represent the 10 Agro climatic zones of Karnataka. The sample included 4814 beneficiaries, two centres of excellence and 483 control farmers who did not receive support under the scheme were interviewed. There are several components being implemented under the MIDH NHM. In each of the components implemented, 10 percent of the sample was randomly chosen for the study using random numbers. In addition, focus groups discussions were held with stakeholders such as officers of the Department of Horticulture, farmers, farmer producer organization, bankers, systems integrators and market aggregators. To showcase the success stories, twenty case studies were documented.

### **1. Performance of NHM: Macro Analysis**

During 2013-14 to 2018-19, in India, the area under horticulture grew by about 5.1 percent and production increased by 12.04 percent. Among horticulture crops, the highest production growth of 59.58 percent was seen in spices, 16.07 percent in flowers/ aromatic plants production and 12.45 percent in vegetables, while 10.10 percent. During the same period, in Karnataka, area under horticulture increased by 10.66 percent, production by 0.44 percent and productivity based on economic bearing increased by 9.82 percent.

Based on the secondary data provided by the Department of Horticulture, the overall physical achievement against target in MIDH NHM is above 80 percent in all components except mushroom cultivation (58.33%) and bee keeping (69.45%), while the overall financial achievement is 89.25% percent during the reference years of study, the least financial achievement was in Human Resource Development (33.41%), marketing infrastructure (59.66%) and mushroom cultivation (59.83%). In terms of physical and financial target achievement, Dakshina Kannada showed good performance while the performance of Kolar was lagging. Enhanced focus on human resource development will contribute to improving the performance. Financial outlay of post harvest management (31.19%) and polyhouse (27.80%) had more than 50 percent share in comparison to higher physical achievement and coverage of INM/IPM (42.41% to total, while financial allocation was 2.80%) and pollination support through bee keeping (13.13% to total, while financial allocation was 0.80%). Therefore, focus on synchronizing the allocation across components for higher area coverage per rupee of project funds is recommended.

A macro analysis of the performance of MIDH NHM in Karnataka for the reference years of study indicates an Overall there has been an increase in area by 10.66 percent, production increased marginally by 0.44 percent, while productivity decreased by -9.23 percent. However, when economic bearing is considered productivity increased by 9.92 percent. With respect to area under horticultural crops, it was observed that spices registered 16.66 percent growth in area, 103.06 percent growth in production, while productivity increased by 74.06 percent. Vegetable crops account for about 4.30 lakh hectares area which registered 2.92 percent growth, however production and productivity decreased. There was marginal decrease in area, production and productivity of fruit crops. Plantation crops account for largest area under horticultural crops in Karnataka which registered 19.27 percent growth in area and 8.20 percent growth in production, while productivity decreased. Medicinal and aromatic crops registered reduction in area, production and productivity.

## **2. Process Evaluation**

Process evaluation was carried out through discussion with the State NHM Office, implementing officers, interaction with other stakeholders, analysis of data, and perusal of documents related to fund release and programme execution. Explaining the various constraints in implementing the NHM, it was suggested that the unit cost under different components should be revised. It could be made pro rata basis considering the current market

price while fixing the subsidy amount. The documents to be collected from farmers need to be simplified, since it was a challenge to obtain Digital Crop Certificate from Revenue Department in a timely manner. There is a need for more flexibility, especially to implement new ideas. Latest PHM technologies need to be promoted. Subsidy amount is very minimal in NHM as compared to other State schemes and hence this needs to be revised realistically. Focus on demand driven technologies and convergence with other schemes will ensure more effective utilization of resources.

### **3. Stakeholders Views**

Stakeholders played a major role in creating backward and forward linkages so as to have effective implementation of NHM components at grassroot levels to attain NHM objectives. In depth interviews were held with officers implementing NHM at the taluk and district levels. In addition, officers of financial institutions, FPOs and System integrators and market aggregators were interviewed and their opinions are as follows.

The weighted average ranking based of officers opinion on various components of NHM revealed that creation of water resources ranked first, followed by IPHM in terms of productivity and net income. Keeping in view of the demand from the community and marketability conditions, water resources was ranked first followed by area expansion, IPHM and horticulture mechanization. On an average about 1/3<sup>rd</sup> of the officers indicated that there was upto 15 percent increase in net income from horticulture crops from NHM.

Most of the officers opined that the fund allocation are inadequate as compared to the local demand, hence the plan and allocation must be made demand driven. They opined that the department officers provided the best possible services and technical inputs to farmers. Further, they were of the opinion that 20-30 percent self-employment opportunities were created through NHM activities.

The bankers have opined that all the NHM beneficiary loanee farmers used the loan for the said purpose. The farmers have benefitted economically and socially after utilizing the loan. They have also suggested that clear cut guidelines and awareness about the scheme and subsidy process to beneficiaries is necessary.

FPO members have suggested that the overall allocation of funds and subsidy amount to be enhanced apart from providing hand holding support for establishing market linkages. Suggestions given by the system integrators and market integrators pertain to providing modern machinery on subsidy, mobile marketing options and machinery for value addition.

Farmers affirmed that there is a 10-30 percent improvement in productivity and 10-20 percent increase in net income from horticulture crops over a period of time due to NHM interventions. Activities like area expansion and taking up other horticulture activities has provided employment locally. The post-harvest management technologies have helped to reduce post-harvest losses by 10-20 percent.

Farmers suggested that future NHM projects need to focus on providing market linkages, increased subsidy amount, new varieties of crops, drip irrigation and create more awareness on NHM benefits. Simple solar dryer at a cost of Rs 1.5 to 3 lakhs with subsidy of 40 percent for dry pepper, arecanut and coconut. Better communication of useful information through SMS or WhatsApp group of farmers of one cluster or taluk to create awareness. Honey bee farmers to be trained on management of hives during spraying of smell-based plant protection chemicals to protect honey bees. Subsidy amount to be raised or made on par with other schemes. Provide hand holding support for establishing marketing linkages.

#### **4. Micro Analysis**

##### **i. Area Expansion Programme**

The NHM was focused on bringing less fertile land under cultivation of horticulture crops and targeting the small-scale farmers in area expansion programme. The overall physical and financial achievement during the study period was 98.95 percent and 98.34 percent respectively. The maintenance physical and financial achievement during the study period was 91.57 percent and 90.45 percent respectively. The assistance under area expansion covered a total of 536 ha, of which 304.50 ha (56.81%) was for fruit crops and 85.90 ha (16.03%) for vegetables, while the remaining constituted flowers, plantation and spices. Among the beneficiaries interviewed, 15.28 ha (2.85% of total area) of fallow land was brought under horticulture cultivation. Nearly 40 percent beneficiaries initiated horticulture for the first time through NHM support. In terms of land use diversification, 192.75 ha (35.96%) of agriculture, 5.65 ha (1.05%) of forestry was brought under horticulture

cultivation, while horticulture was being done in 322.32 ha (60.13%). However, there was no integration with other components among the sample.

Productivity in fruits was 36.48 t/ha and in vegetables it was 22.07 t/ha. There has been an average annual increase of 24.18 percent in net income among beneficiaries. Among control farmers, there has been an increase in net income of 26.71 percent. The increase in control farmers is higher than the beneficiaries. However, the actual income from horticulture post NHM period among beneficiaries is higher (Rs.2,51,626) as compared to Rs.1,78,000 in control farmers. This difference may also be attributed to the fact that for some beneficiaries of fruits, plantations and spice, yield is yet to stabilize.

The area expansion activity has generated an average of 586 person days per annum per beneficiary, which includes, 254 person days (43.28%) for family members and 333 person days (56.72%) of hired labour. In terms of gender disaggregation, overall 333 person days (54.33%) have been generated for men and 318 person days (45.67%) for women.

## **ii. Rejuvenation, replanting and canopy management**

The main objective of rejuvenation in horticulture is to increase the productivity and economic age of plants. It aims to convert the low yielding senile / unproductive plantations into high yielding trees using various techniques like pruning, canopy management and preparation of basins around trees besides removal of dead and diseased branches etc. The overall physical and financial achievement during the study period was 115.95 percent and 87.48 percent respectively. Overall, maximum beneficiaries (42.18%) have been assisted for replacement of senile plantation, followed by 41.59 percent who were assisted for pruning/canopy management and 16.22 percent for top working and re-grafting. The total area rejuvenated is 358.17 ha. Fruit crops constituted maximum rejuvenation area, (212.9 ha, i.e. 56.44%) followed by plantation crops comprised (145.29 ha, i.e. 40.56%)

Majority 42.18 percent stated that survival was between 50-75 percent. The overall percent change in productivity of fruits are 50.61 percent and in plantations it is 30.71 percent. Among beneficiaries, the average net income increase from fruit crops after rejuvenation was perceived as 27.00 percent and 47.25 percent in plantation crops. In control respondents, the overall increase in net income of fruits crops is 7.54 percent, while it was 10.43 percent in plantation crops. In terms of benefits from rejuvenation, 70.50 percent mentioned that they

received better income from horticulture and 59.00 percent stated it helped utilised their land in a better manner.

Rejuvenation has generated employment of 2375 person days overall, of which the days of employment is higher for hired labour (1330 person days, i.e.56% of total) as compared to family members (1045 person days, i.e. 44% of total). In terms of gender-wise employment generated, overall 36.25 percent of the total person days are for women, while 63.75 percent days are for men.

### **iii. Creation of Water Resources**

This activity encompasses construction of plastic lined water harvesting tanks to mitigate the scarcity of water for supplemental irrigation as well as diverse use of stored water during off season. The overall physical and financial achievement during the study period was 104.99 percent and 97.08 percent respectively. The sample comprised the following beneficiaries/ activities Community tanks (8000 CMTs) without RCC lining (4.60%), Community tanks (6000 CMTs) without RCC lining (8.05%) and Individuals farm pond (1200 CMTs) without RCC lining (87.36%). Among the beneficiaries, 82.76 percent water resources were being used continuously, while 18.39 percent were used initially and later discontinued due to lack of rainfall, damaged lining sheets, non-availability of other water sources like borewell, canals etc. A total of 126.71 ha was brought under irrigation where various horticulture crops were being cultivated. Interestingly the beneficiaries stated that water is available throughout the year in community tanks since all farmers using it pump water into it in turns, part from rain water, while in individual farm ponds it is available for an average of 237 days per annum.

Overall in vegetables the productivity was perceived to be enhanced by 18.80 percent, 9.15 percent in loose flowers, 15.80 percent in fruits and 19.65 percent in arecanut and spices were taken up only after creating water resources. In terms of net income, the beneficiaries perceived 20.85 percent increase in vegetables, 28.91 percent in fruits and 24.64 percent in arecanut.

The beneficiaries opined that as a result of utilising the water resources creation, there was an increase in production, additional area was brought under irrigation, Water was available for crop period and there was incremental income.

#### **iv. Protected Cultivation**

In protected cultivation, crop is shielded from cold, wind, storm, rain and frost. Due to controlled conditions there is higher germination, plant growth and crops mature quickly. Use of water is optimized, inputs are utilised effectively, and incidence of pests and diseases are reduced. Crops can be grown throughout the year. The overall physical and financial achievement during the study period was 99.24 percent and 90.4 percent respectively.

In this activity support was given for establishment of greenhouse and shade net and for installing anti-bird/ hail net and plastic mulching. The total area assisted under protected cultivation among the sample was 247.68 ha, of which vegetables comprised 231.83 ha (93.75%), fruits 5.30 ha (2.14%), cut flowers 4.39 ha (1.78%), loose flowers 1.72 ha (0.07%), maize 0.18 ha (0.07%), nursery 3.44 ha (1.39%) and betel leaves 0.40 ha (0.16%).

Greenhouse was utilised completely by 97.78 percent beneficiaries, while 2.22 percent had utilised partially. In shade net 53.85 percent had utilised completely, while 46.15 had utilised partially. Overall across all crop categories, the average productivity had increased by 26.06 percent increase and 29.16 percent increase in net income.

Protected cultivation has generated an average employment of 568.02 person days per annum per beneficiary, which includes, 300 person days (52.84%) for family members and 268 person days (47.16%) of hired labour. In terms of gender disaggregation, overall 319 person days (56.09%) have been generated for men and 249 person days (43.91%) for women.

#### **v. Integrated Nutrient Management and Integrated Pest Management**

INM and IPM is a sustainable technology which reduces the consumption of chemical fertilisers, since a combination of organic and chemical fertilizers are used. The overall physical and financial achievement during the study period was 92.71 percent and 92.50 percent respectively.

Among 2386 beneficiaries of INM/ IPM, 76.70 percent respondents had received only IPM, 13.24 percent had received only INM and 10.06 percent received both INM and IPM. Among the INM beneficiaries, majority (39.56%) received neem/ pongamia cake, 36.39 percent received other crop specific nutrient products like vegetable special, mango special etc. and 30.70 percent received rhizobium. In terms of IPM inputs, majority of the

beneficiaries (75.96%) received other IPM products like copper sulphate, bacillus species, etc. 21.64 percent received trichoderma species, and 16.17 percent received neem/ pongamia based pesticides. The INM/ IPM inputs were applied on 1996.21 ha by the beneficiaries, where in maximum area was under plantation 1304.30 ha (65.34%), followed by vegetables 259.39 ha (12.99%).

Overall productivity increase across all crop categories was an average of 23.11 percent and net income by 19.16 percent. The farmers opined that there were several benefits of using INM/ IPM such as reduction in pest, disease, quantity of pesticides and fertilizer used. They also perceived increased yield, better quality of crops and improved soil quality.

#### **vi. Organic Farming**

Organic farming is an efficient and promising approach for environmental sustainability as it provides yield stability, improves soil health, is eco-friendly, and reduces the use of synthesized fertilizers. The overall physical and financial achievement during the study period was 84.42 percent and 93.56 percent respectively.

The organic inputs given include Biofertilizers (3.45%), Bio-fungicides (41.38%), Neem/ pongamia cakes (18.39 %), Vermi compost/ FYM (27.59%) and Bio digester/ Jeevamrutha (9.20%). A total of 238.87 ha was converted to organic farming. Majority received the organic inputs for arecanut crop (81.61%). The overall average productivity reportedly increased by 26.32 percent and net income increased by 32.87 percent.

Regarding continuation of organic farming, 40.23 percent are on-going, 52.87 percent have continued for three years and 6.90 percent stated they will be discontinuing the practice.

Under Karnataka State Organic Certification Agency (230 farmers) and Aditi Organic Certification Agency Private Limited (353 farmers), a total of 583 farmers have been certified under MIDH NHM. Among the beneficiaries 35 (40.23%) in Dakshina Kannada have received certification from Karnataka State Organic Certification Agency (KSOCA). The beneficiaries perceived improvement in soil quality, reduction in residues of pesticides and chemicals and yield stability after practising for three years.



**vii. Human Resource Development**

In order to build awareness about horticulture and importance of NHM Project/assistance in horticulture, training programmes were conducted on some of the components. The overall physical and financial achievement during the study period was 93.32 percent and 33.41 percent respectively.

Majority of the beneficiaries had participated in training programmes within the state (98.87%), while a negligible number participated in training programmes outside the state and in exposure visits. This indicated the need for more practical methods of training like exposure visits, farmer field school, demonstrations etc. which are more appropriate for farmers. Most of them who attended the training programme said it was useful (96.62%), while 72.51 percent also expressed it had helped increase their knowledge and skill.

Some of the training needs expressed by the beneficiaries include: improved cultivation practices, organic farming, protected cultivation, horticulture mechanization, post-harvest management and marketing.

**viii. Pollination Support through Bee Keeping**

Honey bees are considered vital for enhancing productivity of cross pollinated horticultural crops. Apiculture has several advantages like complementary source of income, enhanced quality and quantity of cross pollinated crops, providing honey and other by-products of commercial importance. The overall physical and financial achievement during the study period was 69.43 percent and 104.17 percent respectively.

Among the beneficiaries, 54.74 per had received honey bee colonies, 51.82 per had got bee hives and 47.45 percent had received full set. Majority of the boxes were kept in arecanut plantations (92.70%), followed by coconut plantation (53.28%). The average honey production per annum was 102 kgs and the net income was Rs. 11,000 per annum. Nearly half, 48.18 percent stated there was increase in horticulture crop production after bee keeping to an extent of 20-30 percent, while 21.17 percent reported an increase of 10-20 percent. The farmers perceived a 42.52 percent increase in average annual net income after NHM support.

#### **ix. Horticulture Mechanization**

Mechanization plays a vital role in production and marketing of horticulture crops. Improved production techniques coupled with shortage of labour has prompted mechanization of production activities. The overall physical and financial achievement during the study period was 100.07 percent and 94.81 percent respectively.

Among the beneficiaries, maximum (58.57%) were assisted for tractor, 21.43 percent for power tiller (upto 8HP), 5.71 percent for chaff cutter, 4.29 percent for power weeder and 2.86 percent for chain saw. The average monthly rental income from hiring out the machinery ranged from Rs. 3300-16250 per annum. Farmers' opinion on mechanization benefits reveals solving labour shortage, timely operations and reduction in cost of cultivation. No year-round work, inadequate repair & service, high fuel cost, high repair & maintenance cost and insufficient operational know-how are some of the constraints faced by the growers. Beneficiaries perceived that there is moderate to high level of increase in crop production after MIDH NHM. Cent percent of beneficiaries in all the districts, except Hassan endorsed to have realized higher incremental income.

#### **x. Technology dissemination through demonstration**

The component on demonstration of IPM technology for protected cultivation of capsicum, tomato and European cucumber in farmers' fields (Polyhouse) was executed by the Indian Institute of Horticulture Research (IIHR), Bengaluru. IIHR has provided various kinds of inputs to beneficiaries based on soil quality, area of demonstration and type of crops, along with technical guidance. The inputs were given based on the requirements of each farmers' land, crop type etc. The percent change in productivity and net income in capsicum was perceived to be 16.67 percent and 41.00 percent respectively, while in European cucumber it was 31.31 percent and 45.00 percent. The plots with tomato did not report any change in productivity and net income. About 22 beneficiaries (78.57%) mentioned that, the same package is being used further for the same crop.

**xi. Production and Distribution of Planting materials (Nurseries)**

With the intension to increase the production of planting material under MIDH NHM, to support area expansion and rejuvenation, subsidy is provided to hi-tech nurseries for up to four hectares area, small nurseries up to one hectare area, setting up of new tissue culture units and seed production for vegetable and spices. The overall physical and financial achievement during the study period was 81.69 percent and 62.83 percent respectively.

Around 66.66 percent nurseries that were visited were involved in vegetable seed production, while 33.34 percent were involved in planting material and vegetable seed production. Nearly 80 percent of them procure plant production materials from Agriculture/ Horticulture Universities, while 20 percent procure from private companies. All nurseries have sufficient mother plants and also have source for root stock supply. However, during the interview it was found that Government nursery, Bidar and one small nursery, Davangere were accredited. The other four onion seed producers in Dharwad are not accredited.

**xii. Mushroom Production**

The main objective of the component is to present a small scale viable, model production unit using modern technology. In case of mushroom, assistance is provided for setting up of individual mushroom production, spawn production and compost making units. The overall physical and financial achievement during the study period was 58.33 percent and 59.83 percent respectively. Of the two units visited, one was not functional, while the other unit was operational and earned an average annual income of Rs. 2-3 lakhs per annum. The awareness on mushroom production units seems to be less. There is scope to promote low cost mushroom production units.

**xiii. Centre of Excellence in Horticulture**

The main aim of the centres is to develop an international standard technology and knowledge driven Horticulture Resource Hub with excellent facilities, market focus products and customized services aimed at achieving sustainability in horticulture (fruits sector) and enhancing economic development of the farming community. The overall physical and financial achievement during the study period was 90.00 percent and 79.17 percent respectively.

At the centre in Bagalkote, a model nursery has been established for the production of pomegranate seedlings with imported varieties. Around 5000 seedlings have been distributed to local farmers to adopt these varieties. As per the officers, the yield has increased by 30 percent and there is an improvement in the quality of fruits. The farmers have evinced interest to buy seedlings from the centre. Technical guidance has been provided to farmers including Israel technology. The centre could take up more activities like demonstration, adaptation and extension activities in villages and fulfil the proposed objectives.

The Centre at Kolar has been producing 15,000 to 20,000 mango seedlings every year and selling them to farmers. This has been helpful to farmers in getting higher yields with assured quality. The centre has provided training to more than 1000 farmers about ultra hi-density planting of 600 mango plants in an acre as against the 60 plants in an acre as per conventional techniques. This new technique of plantation has given double yield to the farmers.

#### **xiv. Integrated Post Harvest Management**

Post-harvest management is a system of handling, storing, and transporting agricultural commodities after harvest. By empowering farmers in choosing the time and location of sales, influencing the product quality, fostering product differentiation and, hence, better price discovery, PHM plays an important role in both value generation as well as value distribution. The overall physical and financial achievement during the study period was 118.34 percent and 91 percent respectively.

Among the various IPHM interventions, pack house is more popular as 43.31 percent of beneficiaries have received financial assistance for the same. Other units included Integrated pack house with conveyer, Minimal processing unit, Low-cost onion storage (25 MT) and Low cost onion storage structure (10 MT). Nearly 96 percent use it for their own and the remaining use it for own and also rent it out. Of the units visited, 89.81 percent are fully functional, while 10.19 percent are partially functional. Average number of months the infrastructure is used is 7.20 months per annum. The average quantity stored or ripened per month is 144.26 quintal. Most common methods of sale are contract farming (94%) and direct purchase/ organised retail). Articulating several advantages of IPHM facilities, the beneficiaries mentioned it helps maintains freshness, obtain better price for products and reduction in post-harvest losses.

## xv. Marketing Infrastructure

Market infrastructure is a very important aspect for promotion and development of horticulture products. To improve and enhance the market infrastructure, assistance is given under MIDH NHM as credit linked back ended subsidy for setting up wholesale markets, rural markets/apni mandis and retail markets. The overall physical and financial achievement during the study period was 85.46 percent and 59.66 percent respectively.

All the samples studied were vending carts given to individuals, while one is the assistance given to a group of six individuals for creating wholesale marketing infrastructure for mango in Kolar. The vending carts are mostly being used to sell vegetables (37.50%), fruits (18.75%) and other items (21.88%). About, 18.75 percent had sold the carts. Among the vending cart entrepreneurs 45.16 percent of beneficiaries have an average turnover of Rs 25,001 to 50,000 per month. All the beneficiaries using the infrastructure expressed satisfaction about the benefits. After obtaining the vending cart, the quantum of business has increased, increasing the turnover and net income.

## 5. Policy Recommendations

Based on the study findings, component specific suggestions are given in the Recommendations chapter. A few over arching policy recommendations are abridged below:

- Enhanced focus on human resource development will contribute to improving the performance
- Synchronizing the allocation across components for higher area coverage per rupee of project funds is recommended
- The unit cost and subsidy amount has not been revised since 2014. Unit cost may be revised for all components in keeping with current market prices
- Based on the fund allotment by the Government of India and the proposal from the State Mission Director, Directorate of Horticulture, and the State budget allocation to be made and approved. A separate mechanism of direct releasing of funds to State Horticulture Mission (SHM) may be adopted for funding activities for disbursement at the start of the financial year to prevent delay of implementation process
- Physical and Financial targets for districts may be made based on demand/ need expressed from the districts, especially allocation for the SC and ST

- Technical expertise is crucial for most of special components of horticulture from production stage to post harvest handling and marketing. Therefore, staff strength to be enhanced at different levels (including field level facilitators) to provide necessary technical advice seamlessly
- The Organic Farming Policy, 2017, Karnataka is quite comprehensive. In the long run, this component needs more intensive implementation and enhanced resources, hence a separate scheme/ division may be established under state/ central assistance
- Convergence with other schemes of the Government may be done in a planned and systematic manner to ensure more effective utilisation of State Resources
- Individual farmers may be supported to import elite planting material and high efficiency machinery with financial assistance
- Insurance must be ensured for all infrastructure assets created
- Targeted Cluster approach for agro processing and value addition- individual and collectives based on One District one product approach could be followed. Details for this are discussed in Findings chapter, Area Expansion section.
- Integrated marketing and global branding for horticultural produce may be taken up by the Department of Horticulture through the technical support and guidance of institutes like Choudary Charan Singh National Institute of Agriculture Marketing, Indian Institute of Management and other similar expert institutions/ organizations which have the expertise to formulate projects and prepare Master Plans for States, Export Institutions, Traders and Farmers and etc. New technologies/varieties of fruit crops developed outside states/ country may be introduced and popularized through training and demonstrations.