



## IMPACT OF NATIONAL HORTICULTURE MISSION IN INDIA

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### **Abstract**

*Horticulture is one of the branches of agriculture which has played a key role in the economy of any country under inflationary tendency. National horticulture mission (NHM) has a significant role in the development of horticulture among various states in India. The paper emphasises on the impact of national horticulture mission on horticulture in India. It focuses various innovative schemes and technological up gradation on horticulture India under NHM. The paper also attempts to explore various obstacles associated with National Horticulture Mission in India. The study tries to analyse the role of horticulture to increase the production of food crops and cash crops adding to the capacity of Indian agriculture sector. The review reveals the prospects and problems related with NHM and the importance of technological application into the various fields of horticulture among the states in India.*

### **Introduction**

Food security to the growing population with protection of environment is a challenge, which has been received worldwide attention. Worldwide horticulture production is continuously increasing due to the increase in its global demand. Since the trade of the horticulture product is becoming more and more organized, the trend is shifting towards market oriented production in developing countries. India has laudable achievements in terms of increasing production, but a large section of people are under nourished and have hidden hunger. Emphasis on horticulture in Eighth Five-Year Plan and subsequently has proved that horticulture is a best for diversification of agriculture and land use. Past investment has been rewarding in terms of enhanced production and achieving high rate of growth in the sector.

The National Horticulture Conference 2000 was 9<sup>th</sup> in the series which had been organized during 4-5 December 2000. State Horticulture Mission in each state started functioning since November 2005 for the implementation of the National Horticulture Mission programme, a Centrally Sponsored Scheme. The main objective of the Mission is an end-to-end holistic development of the horticulture sector covering fruits, plantation crops, spices, flowers and mushroom. The important programme under the mission includes production and productivity improvement, post harvest management, value addition and marketing to ensure livelihood security to farmers of each state. In India, Since November 2005 for the implementation of the National Horticulture Mission programme, a centrally sponsored scheme is one of the World's largest food and cash crops based social protection programme, is serving all over the states through a network of State Horticulture Mission. India's diversity in climatic and soil provides tremendous scope for growing a wide variety of Horticulture produce. At present, India is the second largest producer of fruits and vegetables in the world.

The Horticulture sector, which includes Fruits, vegetables, root and tuber crops, mushroom, floriculture, medicinal and aromatic plants, cashew nut and plantation crops, **has** been contributing over 24.5 per cent to agricultural GDP from less than 8 per cent of area under agriculture for the last two decades. The sector has established its credibility for improving land use, generating employment and above all, nutritional security to the people. The horticulture also provides livelihood to women and poorest of the poor.

World emerging horticulture trends are reflected in India too and this indicate the paradigm shift in dietary need of people with the rise in income level which will demand more horticultural products. Since the growth of horticulture crops is rewarding to farmers in terms of return per unit area, it will contribute significantly to food and nutritional security. Horticulture has also to play a significant role in our agenda for higher rate of growth in agriculture. With focused attention in horticulture there has been spectacular change in terms of technological adoptions, production and availability of horticultural products

Our country has become second largest producer of fruits and vegetables having the first position in several horticultural crops namely mango, banana, sapota, litchi, coconut, cashew nut, spices and many vegetables. **The productivity has achieved by India in the case of grapes, coconut and cauliflower is remarkable.** Productivity of potatoes and banana has increased manifold. Production and export of flower have witnessed spectacular change and we continue to have major share in global market of spices and cashew nuts. Export of medicinal plants, fruits and vegetables has also showed rising trend. Thus, horticulture sector in the country, despite numerous challenges and shortcomings, is moving dynamic and is in crucial phase of development. It is likely to grow and will require to be supported with respect to infrastructure, human resource and congenial policy environment



For the first time, programme on Human Resource Development and Technology Mission have initiated in hilly and tribal region for integrated horticulture development especially in north-eastern including Sikkim. To facilitate the development of cold storage, the department horticulture has launched a new programme which aims at developing 12 lakh tones of additional cold storage capacity and renovates 8 lakh tone capacity. The programme will also facilitate the construction of 4.5 lakh additional storage capacity for onion. The programme also encourages the establishment of cold storage for onion on pilot scale with investment of Rs. 2.5 crores.

Horticulture crops under National Horticulture Mission in each state have been contributed over 25 per cent to agriculture sector as a part of GDP from less than 10 per cent of the area. The programme has established its credibility for improving land use, generating employment and above all nutritional security to the people. With increase in income level, demand for horticulture produce will increase and total production of 360 million tonnes would be needed in the year 2020. While developed countries are very much alert about healthy and chemical free food. But in the Indian context organic farming has to aim at enhancing crop yield and maintain sustainability to ensure food and nutrition security to our people.

### Review of Literature

Ananth (2004) has analysed the horticulture development, irrigation, and soil conservation in Karnataka. About 54 per cent of rural farmers and 78 per cent urban farmers are getting information about horticulture activities. But application level these information are not based properly in land for the production of fruits and vegetables. He found that the horticulture crops production is an important anti-poverty measure as well as occupational diversification programme within the agriculture sector in Karnataka. He also concluded that all the agriculture activities are very much helpful for the development of horticulture crops cultivation activities in this region.

Nandakumar (2009) has reported that the characteristics of national horticultural mission 2005-06 and also discussed the changes in the production of fruits and vegetables offer implementing horticulture in various states in India. The report drawn a real picture of post harvest activities like processing, packaging, storage and marketing and also evaluate export. Potential from horticulture areas.

K.Loyi (2008) has examined that the characteristics of horticulture growers and also stated the economic value of horticulture crops, including fruits and vegetables and crop diversification in India. He argued that the majority of cultivators had medium level of entrepreneurship characteristics and favorable attitude towards improved method of horticultural crop cultivation. He concluded that the entrepreneurship development had been helping in increased productivity, prosperity, as well as setting up or small scale industries including fruit processing units for increased capital formation and employment opportunities in the region.

Pondey (2012) has examined the present crop diversification in India and high economic value of their nutritional properties. She found that crops diversification and method of horticultural production has increased during 2007-08. And also she has added that about 600 million tonnes of horticulture crops produce in India per year. She argued the varied climate condition exists in different parts of country. So, it will help for higher crops production for future purposes and the investment in research of horticulture crops has been found highly profitable.

### Objectives

1. To highlights various innovative schemes and technological up gradation in horticulture under NHM.
2. To identify the growth of production, financial assistance and export of horticulture product under NHM.
3. To give valuable recommendations and suggestions for future improvement

### Methodology

This study is primarily based on secondary data. It helps in-depth analysis of the problems and prospects related to NHM, impact of technology on horticulture and various technological up gradation schemes under NHM. Using of review of literature created useful insight about the problems and prospects of NHM on various states India. In the study the secondary data which has been tracked from the various issues of annual Reports of National Horticulture Mission Scheme and Government published periodicals and journals, news papers, internet and so on.

### Various schemes and technologies for the states in India under National Horticulture Mission

**Mission Interventions:**The scheme reveals that the application of up-to-date technology and information in horticulture activities. It also includes the programmes like identification of sites and creation of infrastructure facilities for post harvest management, markets and production forecasts.



### **Research and Development**

Here the researcher considers the effective transfer of technologies available in India and abroad for the farm production of horticulture. In our country, Indian Council of Agricultural Research (ICAR) and Council of Scientific and Industrial Research (CSIR) and also the other institutes and organizations in private and public sectors are interested to do such type of research and development for the promotion of horticulture.

### **Production and Productivity Improvement**

The scheme focuses on increasing both production and productivity through adoption of improved and appropriate technologies for ensuring quality and quantity of all horticulture crops in each state under NHM.

### **Production and Distribution of planting Material Nurseries**

The main purpose of this scheme is to provide production and distribution of good quality seeds and planting material. Most of the states have a network of nurseries for producing planting material, which were established through central and state assistance. The nurseries established under public sector will be eligible for 100 per cent assistance and for nurseries in private sector, assistance will be 50 per cent of the cost, as credit linked back ended subsidy.

### **Tissue Culture Units**

The new Tissue Culture (TC) units will be set up at an estimated cost of Rs. 100 lakh per unit under the mission. And also assistance will be provided for rehabilitation and strengthening of existing TC units subject to a maximum ceiling of Rs. 15 lakh for TC in public sector, whereas for TC units in private sector it will be 50 per cent cost as credit linked back ended subsidy, with a ceiling of Rs. 7.50 lakh.

### **Vegetable Seed Production**

Under this scheme, production of disease free seedlings in vegetables will specifically apply to hybrid cultivars of vegetables in which case the seed is very costly and there is low germination of seeds and heavy mortality of seedlings take place when raised in open nurseries. The cost for vegetable seed production is Rs. 50,000/- per ha. The assistance for vegetable seed production will be at 100 per cent of total cost to the public sector, whereas for the private sector, the assistance will be 50 per cent of the cost as credit linked backed subsidy, limited to a maximum of Rs. 25000 per hectare. Assistance will be available for a maximum area of 5 ha per beneficiary.

### **Import of Planting Material**

**NHM has introduced** the best quality planting material of latest varieties of horticulture crops, new component of providing assistance for meeting cost of planting material imported from abroad. For this assistance will be provided at 100 per cent cost to state Governments subject to a maximum of Rs. 10 lakh per beneficiary. Registered Grower Associations will be eligible for assistance at 50 per cent of cost, subject to a maximum of Rs. 5 lakh per beneficiary.

### **Seed Infrastructure**

To facilitate proper controlling, storage and packaging of seeds 100 per cent assistance will be provided to public sector subject to a maximum of Rs. 200 lakh and assistance to private sector will be credit linked back ended subsidy at 50 per cent of cost, limited to Rs. 100 lakh per beneficiary.

### **Rejuvenation and Replacement of Senile Plantations**

With a view to take up productivity improvement, the scheme is allowing strategies like removal of senile plantations, replantation with fresh stock supported with appropriate and integrated combination of inputs, pruning and grafting techniques. The programme is being implemented through individual farmers, co-operatives, self-help groups, NGOs, growers' associations and commodity organizations. The cost of assistance for rejuvenating, replanting senile plantations will be at 50 per cent of the cost subject to a maximum ceiling of Rs. 15,000/- per ha, limited to 2 ha per beneficiary.

### **Creation of Water Sources**

Under the NHM, assistance will be provided for creating water sources through construction of community tanks, farm ponds and reservoirs. This will be connected with Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS). The cost is estimated at Rs. 15 lakh per unit for an area of 10 ha of command with pond/tank size of 100 m × 100 m × 3 m owned and managed by community and farmers group.

### **Organic Farming**

Organic farming in horticulture is becoming increasingly important. Its environmental and economic benefit has captured

attention in many countries. For organic cultivation of vegetables, maximum assistance will be limited to Rs. 10,000 per hectare and also NHM will provide financial assistance up to a maximum of Rs. 5 lakh.

#### Horticulture State wise Area of Production

| Sl. No. | States         | 2006-07  | 2007-08  | 2008-09 | 2009-2010 | 2010-11 | 2011-12 | 2012-13 |
|---------|----------------|----------|----------|---------|-----------|---------|---------|---------|
| 1.      | Andhra Pradesh | 35788.4  | 39473.30 | 58185   | 24610     | 9972    | 9800    | 28913.2 |
| 2.      | Bihar          | 17020    | 12559    | 13090   | 9707      | 8906    | 9600    | 20695.2 |
| 3.      | Chhattisgarh   | 21600    | 22406.23 | 37385   | 14460     | 24930   | 21404   | 6827.0  |
| 5.      | Goa            | 750.62   | 264.50   | —       | 520       | 656     | 550     | 278.9   |
| 6.      | Gujarat        | 31850    | 24899    | 29700   | 11200     | 4829    | 5200    | 20211.7 |
| 7.      | Haryana        | 4736.55  | 6398     | 13962   | 13605     | 2972    | 8669    | 5676.1  |
| 8.      | Jharkhand      | 19600    | 16312    | 26415   | 13635     | 10075   | 7898    | 5241.8  |
| 9.      | Karnataka      | 23791    | 42571.12 | 36685   | 32615     | 18495   | 20912   | 19665.7 |
| 10.     | Kerala         | 17415    | 45952.78 | 39530   | 6700      | 800     | 10185   | 10329.5 |
| 11.     | Maharashtra    | 90297    | 4112.23  | 57615   | 45298     | 9886    | 12101   | 18378.3 |
| 12.     | Madhya Pradesh | 21130    | 24600.10 | 27485   | 23550     | 22774   | 12430   | 19071.2 |
| 13.     | Orissa         | 19500    | 29950    | 28270   | 36000     | 20900   | 13800   | 12245.7 |
| 14.     | Punjab         | 5050     | 9740     | 10352   | 10385     | 4912    | 2894    | 5365.2  |
| 15.     | Rajasthan      | 28118    | 12630    | 11365   | 14600     | 9844    | 14403   | 2619.5  |
| 16.     | Tamil Nadu     | 41579    | 42115.50 | 54060   | 42030     | 35261   | 47100   | 20175.1 |
| 17.     | U.P.           | 24639.70 | 22631.74 | 38952   | 24656     | 14172   | 17070   | 25004.9 |
| 18.     | West Bengal    | 11200    | 1060     | 12625   | 12135     | 4455    | 6255    | 29199.5 |

Source:NHM data base

The above table shows that the state wise area of production of horticulture products for the year 2006-07 to 2011-12. From the table, total production shows highest 495794 hectare during the year 2008-09. Lowest production has been experienced 220271 hectare in the year 2011-12. Among the states highest production has been achieved by Tamil Nadu and lowest production has also recorded from Punjab and Goa during the year 2011-12. Here traditional agriculture activities following states having less horticulture produce than other states those who having low production and contribution to the agriculture. And also only minimum numbers of big states production have improved along with their traditional farm activities.

#### Horticultural State wise Growth of Financial Assistance

| Sl. No. | States         | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-2010 | 2010-11 | 2011-12  |
|---------|----------------|---------|---------|---------|---------|-----------|---------|----------|
| 1.      | Andhra Pradesh | 2333.13 | 2929.08 | 4175.58 | 5800    | 2394.54   | 1590.50 | 3141.68  |
| 2.      | Bihar          | 326.46  | 2028.95 | 1918.23 | 1396    | 1008.54   | 1337.92 | 1897.93  |
| 3.      | Chhattisgarh   | 859.01  | 2386.13 | 2509    | 3997    | 1949      | 4277.89 | 4418.87  |
| 5.      | Goa            | 12.91   | 48.19   | 19.90   | —       | 41.15     | 110.99  | 164.98   |
| 6.      | Gujarat        | 2594.84 | 3349.64 | 2687.75 | 3236    | 1214.50   | 901.97  | 1217.77  |
| 7.      | Haryana        | 627.52  | 517.15  | 740.53  | 1678    | 1786.70   | 1417.60 | 2259.38  |
| 8.      | Jharkhand      | 857.58  | 3975    | 1774.65 | 2973    | 1490.31   | 1161.13 | 2878.864 |
| 9.      | Karnataka      | 1394.58 | 2425.86 | 4294.85 | 4222    | 3558.11   | 3508.70 | 5277.31  |
| 10.     | Kerala         | 944.26  | 1450.16 | 3367.26 | 3303    | 561.88    | 3417.80 | 2704.44  |
| 11.     | Maharashtra    | 3267.61 | 7565    | 9088.21 | 5622    | 4450      | 2336.75 | 3790.82  |
| 12.     | Madhya Pradesh | 680.52  | 2563.24 | 2916.64 | 3416    | 3084.88   | 3419.85 | 2742     |
| 13.     | Orissa         | 1967.65 | 2264    | 2625.29 | 2849    | 4319.43   | 2595.50 | 4173.31  |

|       |             |          |          |          |       |          |          |          |
|-------|-------------|----------|----------|----------|-------|----------|----------|----------|
| 14.   | Punjab      | 321.62   | 1035     | 1127.61  | 896   | 1247     | 951.97   | 887.78   |
| 15.   | Rajasthan   | 1300.31  | 2832.92  | 1412.74  | 1958  | 1419.13  | 1473.92  | 2418.34  |
| 16.   | Tamil Nadu  | 919.57   | 3929     | 4430.12  | 5399  | 4178     | 6404.09  | 8755.32  |
| 17.   | U.P.        | 1897.69  | 3262     | 2785.25  | 5019  | 3040     | 2513.17  | 4046.22  |
| 18.   | West Bengal | 982.85   | 1560.97  | 161      | 1645  | 1377.81  | 881.83   | 1506.35  |
| Total |             | 21288.11 | 44159.89 | 46034.61 | 53434 | 37185.94 | 38301.58 | 52281.66 |

Source:NHM data base

The above table shows that the state wise growth of financial assistance of horticulture activities for the year 2006-07 to 2011-12. The total financial assistance shows that highest Rs. 53434 during the year 2008-09. Lowest production financial assistance has been recorded from the years like 2005-06, 2009-10 and 2010-11. Among the states, highest financial assistance Rs. 8755.32 has been achieved by Tamil Nadu and lowest production has also recorded from Punjab and Goa during the year 2011-12. Here traditional agriculture activities following states having less financial assistance than other states those who having low production and contribution to the agriculture. The main reason is for that the traditional farm activities following states stick on their usual food and cash crops and lack of interest to contribute their fragmented land horticulture. So they get only low financial aids than others.

#### Export of Horticulture Produce From India (Qty in MT, Value in RS.Lakh)

Source: APEDA Website, June 2014

| Product                                      | 2010-11      |             | 2011-12      |             | 2012-13      |              | 2013-14      |              |
|--|--------------|-------------|--------------|-------------|--------------|--------------|--------------|--------------|
|  | QTY          | VALUE       | QTY          | VALUE       | QTY          | VALUE        | QTY          | VALUE        |
| Fruits & Vegetables Seeds                    | 11622.33     | 18491.77    | 15205.81     | 28776.35    | 17168.00     | 34772.39     | 17816.7      | 41053.76     |
| Fresh Mangoes                                | 58863.41     | 16483.60    | 63441.29     | 20974.30    | 55584.99     | 26471.78     | 41279.97     | 28542.85     |
| Fresh Grapes                                 | 98005.12     | 42830.28    | 108584.56    | 60288.15    | 172744.42    | 125942.78    | 192616.91    | 166647.45    |
| Walnuts                                      | 5762.34      | 16629.25    | 5841.56      | 23108.40    | 5295.47      | 19983.57     | 6726.36      | 32453.5      |
| Other Fresh Fruits                           | 255024.83    | 51175.27    | 270437.20    | 75541.11    | 263970.29    | 77975.78     | 240552.45    | 102159.21    |
| Mango Pulp                                   | 170219.72    | 81893.27    | 150499.06    | 62082.91    | 147815.69    | 60855.73     | 174860.33    | 77294.76     |
| Fresh Onions                                 | 1182324.20   | 177928.62   | 1309924.82   | 172299.80   | 1666872.60   | 196662.66    | 1482498.58   | 316961.25    |
| Other Fresh Vegetables                       | 499320.05    | 92138.76    | 734178.83    | 131048.20   | 768627.20    | 151633.56    | 953731.22    | 229332.27    |
| Cucumber and Gherkins (Prepared & Preserved) | 209231.83    | 51525.79    | 258603.00    | 74503.45    | 238624.89    | 85659.18     | 218749.79    | 95520.18     |
| Other Processed Fruits & Vegetables          | 199868.41    | 99704.05    | 274807.05    | 157759.82   | 269217.26    | 173305.54    | 287384.61    | 226660.26    |
| Dried & Preserved Vegetables                 | 49009.12     | 37333.50    | 64794.09     | 52678.47    | 68520.25     | 63795.76     | 56158.38     | 74271.74     |
| Floriculture                                 | 28906.79     | 29604.04    | 30926.02     | 36532.15    | 27121.86     | 42344.60     | 22485.21     | 45590.62     |
| Total  | 27,68,158.15 | 7,15,738.20 | 32,87,243.29 | 8,95,593.11 | 37,01,562.92 | 10,59,403.33 | 36,94,860.51 | 14,36,487.85 |

The above table shows that the export of horticulture produce from India has been grown from 2010-2011 to 2013-2014 on basis of quantity and value. Among the export of the horticulture produce has the highest performance given to the fresh and processed fruits and vegetables than other produce. But in the case of products like dried and preserved vegetables, floriculture, fresh mangos and so on have been continued to low performance relatively to higher performance produce. So it reveals the importance of technological up gradation and financial assistance to the low performance area under horticulture activities in India and also the unexplored areas of national horticulture mission.



### Recommendations

- To give financial assistance to states those who have backward in horticulture activities
- To provide more schemes and technological up gradation for production and productivity of horticrops under NHM
- To facilitate more export promotional opportunities for horticrops like traditional pattern of cultivating crops
- To consider the big states those who have backward in horticulture production and allow them to use their maximum land capacity for horticulture production under NHM

### Conclusion

Based on evaluation carried out at secondary data level, it can be inferred that NHM holds the key role to eradicate scarcity of food and cash crops in an inflationary scenario occurring the economy like India. The NHM has been enhancing various schemes like mission interventions, research and development, production and productivity improvement, production and distribution of planting materials nurseries, tissue culture plants, vegetable seed production, import of planting materials, seed infrastructure, rejuvenation of senile plantation, creating of water resource, protected cultivation, organic farming and nutrient management, **etc.** enhance livelihood security to farmers of each state. Further, it brought remarkable change in respect of food security, employment, foreign earnings, and income. Even though the above positive things are happening onside and the other side the NHM faces challenges in the fields like financial assistance, production of various food and cash crops and difficulty to find out the un explored areas of horticrop export.

**Therefore if we implement the programme nationwide in its real sense, it will promote horticulture in each state as the traditional farm activities.** Also we should avoid the problems like lack of financial assistance, concentration of single crop, lack of technological up gradation, lack of production and productivity, lack of export opportunities etc. Such type of problems under NHM to be avoided within a rational period of time with the support of centre and states governments. It will save the Indian economy under any type of inflationary tendency and will give the real benefits to the people.

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