



## National Horticulture Mission (NHM): A Game Changer for Horticultural Economy of Karnataka

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### Abstract

An economic study, intended to know the impact of NHM on temporal changes in area, production of horticultural crops, performances of different components under NHM and constraints faced by sample beneficiaries, study was conducted in Karnataka state using primary and secondary data during the year 2013-14. Major findings of the study reveals that, significant increase in area, production and yield of horticultural crops achieved after implementation of the NHM, components such as area coverage and IPM have incurred highest expenditure over the years, but full potential could not be tapped due to severe constraints in infrastructural bottlenecks, marketing facilities and post-harvest management etc. So efforts are needed to improve the conditions of infrastructural facilities by spending higher expenditure on those items.

**Keywords:** National horticulture mission (NHM), National horticulture board (NHB)

Horticultural development had not been a priority in India until recent years. In the period of 1948-80, the main focus of the country was on cereals, much planned efforts had not been made for horticultural development, except for some technical support and development efforts for specific commodities like spices, coconut and potato, during 1980-92, there was consolidation of institutional support and a planned process for the development of horticulture. It was in the post liberalization period that a focused attention was given to horticulture development through an enhancement of plan allocation and knowledge based technology. At such a crucial juncture, the Government of India has initiated several programmes and missions to check the downward trend in agricultural production and to find sustainable solutions. It is here that the scheme of National Horticulture Mission plays a crucial role in promoting growth in horticulture, and thereby helps augment growth in Indian agriculture.

The National Horticulture Mission (NHM) is a centrally sponsored scheme implemented at the end of eleventh five year plan with 100 % assistance. The scheme has been implemented in all the States and Union Territories of India except the North Eastern States, Himachal Pradesh, Jammu & Kashmir and Uttaranchal, with effect from 2005-06, to promote holistic growth of the horticulture sector through area based regionally differentiated cluster approach for development of horticulture crops having comparative advantage, ensuring forward and backward linkages with the active participation of all the stake holders. NHM is the single largest programme within the Ministry of Agriculture and all horticultural programmes account for about 30% of the total outlay of Department of Agriculture and Cooperation.

Karnataka is regarded as the "Cafeteria of Horticultural Crops" given the suitability for cultivation of various horticultural crops. There is a big scope to

promote area under Horticulture crops and output mainly focusing on yield levels. Though the horticulture sector in the state has witnessed a phenomenal growth in the last five decades, there are abundant opportunities for further growth, especially in areas like productivity improvement, quality enhancement, hi-tech horticulture, protected cultivation, precision farming, etc. Horticulture sector is an important source of livelihood for as many as twelve lakh farming households in the state.

Under this backdrop, a study has been conducted on the role of NHM in Karnataka state with the following objectives (i) to analyze the impact of NHM on temporal changes in area, production and yield of horticultural crops, (ii) to examine the progress and performances of different components under NHM and (iii) to document the constraints faced by sample beneficiaries.

### Database and Methodology

An economic study is based on both primary and secondary data. Primary data collected from ninety randomly selected beneficiaries from the three districts, who got benefited from national horticulture mission (NHM). Secondary data on temporal trends in area, production and yield of horticultural crops was obtained from the NHB database, Department of horticulture, GOK, DES, Karnataka, State NHM agency etc. we have used appropriate statistical tools such as compound annual growth rate (CAGR), percentages, averages and Garette's ranking technique for analysis and interpretation.

### Results and Discussion

Impact of national horticultural mission (NHM) on area, production and yield of horticultural crops (Table 1) showing significant during mission period viz., growth in production and yield of total horticultural crops as totally bypassed previous period growth record, this is mainly attributed to rejuvenation activities and integrated pest management activities covered under NHM, similar type of results also seen from the growth (Tables 2 and 3) of area and production of different horticultural crops during mission period, during mission period increase in growth rates are mainly depicting area expansion, rejuvenation and IPM activities etc. undertaken under NHM.

It has been found that as per the financial achievement, state has received ₹ 797 crores and spent ninety per cent amounting to ₹ 768 crores from 2005 to 2013 (table 4).

**Table 1: Growth rate in area, production and yield of total horticultural (%)**

Years	Area	Production	Yield
1980-81 to 1987-88	3.34	3.82	1.62
1988-89 to 1995-96	2.58	6.42	2.43
1996-97 to 2004-05	0.90	-2.76	1.04
2005-06 to 2012-13	2.79	8.39	3.86

Source: Authors calculation from NHB database.

**Table 2: Crop wise growth rate in area of different horticultural crops (%)**

Years	Fruits	Vegetables	Spices and plantation crops	Flowers
1980-81 to 1987-88	2.62	4.53	3.53	11.56
1988-89 to 1995-96	4.69	3.98	1.57	9.06
1996-97 to 2004-05	-1.82	-2.84	0.23	-5.85
2005-06 to 2012-13	6.41	2.13	2.48	6.32

Source: Authors calculation from NHB database.

**Table 3: Crop wise growth rate in production of different horticultural crops (%)**

Years	Fruits	Vegetables	Spices and plantation crops	Flowers
1980-81 to 1987-88	2.98	4.91	3.63	10.92
1988-89 to 1995-96	6.99	9.45	-1.08	11.07
1996-97 to 2004-05	-2.84	-5.85	-11.78	5.07
2005-06 to 2012-13	7.34	6.80	15.83	8.62

Source: Authors calculation from NHB database

**Table 4: Financial achievement under NHM**

Year	(₹ lakh)		
	Amount released	Achievement	Percentage of achievement
2005-06	4455	56	1
2006-07	8448	4385	52
2007-08	10071	17370	172
2008-09	13537	11017	81
2009-10	9501	13321	140
2010-11	11220	9325	83
2011-12	10625	9996	94
2012-13	11900	11342	95
Total	79757	76813	90

Source: Authors compilation and calculation from state NHM data

**Table 5: Component-wise financial progress of NHM**

(₹ lakh)

Components	Total (2005-2013)		Per cent share	
	Outlay	Expenditure	Outlay	Expenditure
Area coverage	30561	33148	44.77	44.48
Rejuvenation	4599	3781	6.74	5.07
Organic farming	4220	4635	6.18	6.22
IPM	2729	5504	4.00	7.39
Planting material	2881	2876	4.22	3.86
IPM infrastructure	1131	1118	1.66	1.50
PHM	4221	5207	6.18	6.99
Markets	769	1299	1.13	1.74
Protected cultivation	4517	4881	6.62	6.55
Water resources	3878	5298	5.68	7.11
Others	8765	6773	12.84	9.09
Total	68267	74520	100.00	100.00

Source: Authors calculation from State NHM data

**Table 6: Component wise physical progress of NHM**

Components	Total (2005-2013)		Per cent share	
	Target	Achievement	Target	Achievement
Area coverage*	206995	199711	34.96	24.71
Rejuvenation*	35562	29107	6.01	3.60
Organic farming*	26418	37054	4.46	4.58
IPM*	311158	529444	52.55	65.50
Planting material**	868	1006	0.15	0.12
IPM infrastructure**	78	70	0.01	0.01
PHM**	1897	2392	0.32	0.30
Markets**	120	77	0.02	0.01
Protected cultivation*	4766	3906	0.80	0.48
Water resources**	4312	5578	0.73	0.69
Total	592174	808345	100.00	100.00

Note: \*Area in ha; \*\*Quantity in No.,

Source: Authors calculation from State NHM data

**Table 7: Percentage positions and their corresponding Garrett's table values**

Rank	Percentage Position	Garrett's Table Value
1	100(1-0.5) 7=07.14	79
2	100(2-0.5) 7=21.43	66
3	100(3-0.5) 7=35.74	57
4	100(4-0.5) 7=50.00	50

5	100(5-0.5) 7=64.29	43
6	100(6-0.5) 7=78.57	34
7	100(7-0.5) 7=92.86	21

**Table 8: Constraints faced by sample beneficiaries**

Sl. No.	Constraints	Mean score	Rank
1	Poor marketing facilities for final disposal of produce	59.14	1
2	Lack of infrastructure for cold storages and processing facilities	58.01	2
3	Delay in subsidy amount payment	44.18	6
4	Lack of incentives for exports	42.59	7
5	Lack of publicity activities	45.18	4
6	Lack of provisions for inputs like plant protection chemicals, herbicides etc.	45.03	5
7	Insufficient subsidy amount	57.13	3

Source: Authors calculation from primary data.

Financial progress of NHM (Table 5) in relation to the components such as area coverage and rejuvenation has incurred highest expenditures over years. Infrastructure in the IPM component, PHM component and horticulture markets are the areas where less amount is allocated under NHM in the state. Therefore, there are some components under NHM which needs strengthening completely.

In physical progress (Table 6), area coverage achieved under NHM is more than ninety two percent over 2005 to 2013. Area covered under rejuvenation has also seen more than the seventy six percent of the achievement and above two components have significant share in total achievement, some of the components such as area covered under IPM and protected cultivation are fairly progressing over the years, while the modernization of horticulture in Karnataka, the problem of pest and diseases problem has increasing the years, therefore integrated pest management activities should be given the major prominence under NHM in order to increase the horticulture production and yield levels, some components are lagging behind like establishment of markets is not up to the mark, lack infrastructure for storage and processing etc. So these markets should be developed for better marketing facilities, thereby helping to increase profit levels of the growers and the production levels.

Garrete's ranking (Table 8) on constraints faced by sample farmers indicates lack of marketing facilities for final disposal of produce as major problem followed by

Lack of infrastructure for cold storages and processing facilities, Insufficient subsidy amount, Lack of publicity activities about the different provisions of the programme.

## Conclusion

Horticultural crops offer an opportunity to enhance agricultural growth, employment and augment income of the farmers. Horticulture sector in Karnataka has exhibited an impressive growth in area, production and yield as has been depicting in growth rate analysis. This has been especially because of a high growth rate achieved in the fruits, vegetables and spice sub-sectors. At the same time, plantation crops also exhibits an impressive growth in area and production with increasing importance in the horticulture sector. In Karnataka, these crops are getting popular among farmers due to government support under the National Horticulture Mission (NHM), area coverage and IPM activities are performing well in terms increasing the production and yield, but full potential could not be tapped due to severe constraints in infrastructural bottlenecks, marketing facilities and post-harvest management etc. Efforts are needed to improve the

conditions of infrastructural facilities by spending higher expenditure on those items, so that it has multiplier effect on increasing production and profit levels of farmers.

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