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CONTRIBUTION OF NATIONAL HORTICULTURE MISSION IN AGRICULTURAL DEVELOPMENT

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Abstract: *Agriculture is the dominant sector of Indian economy, which determines the growth and sustainability. About 65 per cent of the population still relies on agriculture for employment and livelihood. In the past few years. Indian agriculture is benefitting huge from rising external demand and the sector's wider participation in the global economy.*

Horticulture is perhaps the most profitable venture of all farming activities as it provides ample employment opportunities and scope to raise the income of the farming community. It also has tremendous potential to push the overall agriculture growth to more than the targeted 4 per cent. It is the fastest growing sector within agriculture. It contributes in poverty alleviation, nutritional security and have ample scope for farmers to increase their income and helpful in sustaining large number of agro-based industries which generate huge employment opportunities.

National horticulture mission was launched during the year 2005-06 to provide a thrust to the development of horticulture in the country. It was expected that adoption of an integrated approach covering production, post harvest management, processing and marketing would help attain the objectives enhanced improved nutrition and holistic growth of horticulture production.

Keywords: *NHM, Shifting food production & Trend of Horticulture Produce, Growth rate, Constraint of Horticulture Development.*

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INTRODUCTION

Agriculture plays a key role in the development of any economy. It contributes significantly to the process by supply of raw material to manufacture, wage goods to worker in other sectors employment to the work force investible surplus and market of products of industry. Agriculture provides basic sustain to all living beings. It is very important that ecologically, sociology, and economically sustainable agriculture should become the backbone of the development process of country. Indian agriculture broadly consists of four sub-sectors. Agriculture proper including all food-crops oilseeds, fiber, plantation crops, fruits and vegetables is the largest accounting for nearly 70 percent of the agriculture sector as a whole. The rapid growth in this sub-sector through exploitation of wastelands and fallows spread of irrigation and adoption of production enhancing technologies was critical in transforming India from a country vulnerable to food shortages to one of exportable surplus. The agriculture sector has been successful in keeping pace with rising demand for food. The contribution of increased land area under agricultural production has declined over time and increases in production in the past two decades have been almost entirely due to increased productivity. Contribution of agricultural growth to overall progress has been widespread. Increased productivity has helped to feed the poor, enhanced farm income and provided opportunities for both direct and indirect employment.

India accounts for only about 2.4% of the world's geographical area and 4% of its water resources, but has to support about 17% of the world's human population and 15% of the livestock. Agriculture is an important sector of the Indian economy, accounting for 14% of the nation's GDP, about 11% of its exports, about half of the population still relies on agriculture as its principal source of income and it is a source of raw material for a large number of industries. Accelerating the growth of agriculture production is therefore necessary not only to achieve a Plan and meet the rising demand for food, but also to increase incomes of those dependent on agriculture to ensure inclusiveness. Overall GDP target of 8 per cent during the 12th Plan and meet the rising demand for food, but also to increase incomes of those dependent on agriculture to ensure inclusiveness. During 2011-12, there was record production of food grains at 259.32 million tonnes, of which 131.27 million tonnes was during Kharif season and 128.05 million tonnes during the Rabi season of the total food grains production, production of cereals was 242.23 million tonnes and

pulses17.09 million tonnes. As per 2nd advance estimates for 2012-13, total food grains production is estimated at 250.14 million tonnes[1].

Horticulture is diversity of physiographic, climate and soil characteristics enables India to grow a large variety of horticultural crops – fruits, vegetables, flowers, spices, aromatic and medicinal plants, plantation crops etc.

India, with its wide variability of climate and soil, is highly favorable for growing a large number of horticultural crops. It is the fastest growing sector within agriculture. It contributes in poverty alleviation, nutritional security and have ample scope for farmers to increase their income and helpful in sustaining large number of agro-based industries which generate huge employment opportunities. Presently horticulture contributes 29.5 per cent of agricultural GDP. The national goal of achieving around 4.0 per cent growth in agriculture can be achieved through major contribution from horticulture growth. India is the largest producer of fruits in the world and second largest producer of vegetables. This sector is likely to grow rapidly in the future both on account of internal demands and export opportunities.

OBJECTIVES

The main objectives of this study are as follows:

1. To evaluation National Horticulture Mission.
2. To analyze the trends and patterns of horticulture produce and agriculture.
3. To analyze role of horticulture in agricultural development.
4. To find problem & constrain of horticulture development.

METHODOLOGY

Following methodology has been adopted to meet above objectives:

1. Study of National Horticulture Mission to understand its structure, objectives, strategies, standard practices and also its limitations.
2. Study of relevant secondary data and measurement by respective tools & statistics techniques.

HISTORY OF HORTICULTURE DEVELOPMENT IN INDIA:

Horticultural development had not been a priority in India until recent years. In the period 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-1993 period that a focused attention was given to horticulture development through an enhancement of plan allocation and knowledge-based technology. Despite of this decade being called a "golden revolution" in horticultural production, the productivity of horticultural crops has increased only marginally from 7.5 tons per hectare in 1991-92 to 8.4 tons per hectare in 2004-05 (NHB, 2005). Then the National Horticulture Mission was launched in 2005-06 by the

Government of India with a mandate to promote integrated development in horticulture, to help in coordinating, stimulating and sustaining the production and processing of fruits and vegetables and to establish a sound infrastructure in the field of production, processing and marketing with a focus on post-harvest management to reduce losses. In 2005 the total area under fruits and vegetables was 11.72 million hectares and the aggregate production stood at 150.73 million tons (NHB, 2005). As a result of this huge spurt in horticulture produce, India has become the second largest producer of fruits and vegetables in the world, next only to China. The annual area and production growth under fruits and vegetables in the period 1991-2005 in India was 2.6 per cent and 3.6 per cent respectively. This growth is quite significant compared to the decline in area under cereals and cereal production which is growing at the rate of 1.4 per cent per annum only in the last one-and-a-half decades. The share of fruits and vegetables in the total value of agricultural exports has increased over the years from 9.5 per cent in 1980-81 to 16.5 per cent in 2002-03. But India is still lagging behind in actual exports of these produce. For example, India produces 65 per cent and 11 per cent of world's mango and banana, respectively, ranking first in the production of both the crops. Yet India's exports of the two crops are nearly negligible of the total agricultural exports from India.

The Indian horticulture sector is facing severe constrains such as low crop productivity, limited irrigation facilities and underdeveloped infrastructure support like cold storages, markets, roads, transportation facilities, etc. There are heavy post-harvest and handling losses, resulting in low productivity per unit area and high cost of production. However, on the other hand, India's long growing-season, diverse soil and climatic conditions comprising several agro-ecological regions provide ample opportunity to grow a variety of horticulture

crops. Thus, efforts are needed in the direction to capitalize on our strengths and remove constrains to meet the goal of moving towards a formidable horticultural growth in India. The foreign trade policy in 2004-11 emphasized the need to boost agricultural exports, growth and promotion of exports of horticultural products.

CHANGING SCENARIOS OF HORTICULTURE DEVELOPMENT:

Over the past few years, has made remarkable progress in terms of expansion in area under different crops, increase in productivity, crop diversification, technological interventions for production and post harvest and forward linkages through value addition and marketing. A significant increase in area has been achieved in vegetables and flowers. Unprecedented growth has been achieved in off-season vegetable production and floriculture, making these sectors evolves as upcoming .Opportunities. Concept of greenhouse has become extremely popular. There has been a tremendous success in large scale of tomato in open field as well as under protected condition. Critical areas like pest and disease management have been given principal focus with intensification of efforts on containing decline problems especially in orange and large cardamom. Massive rejuvenation programmed in orange and re-plantation in large cardamom has brought back some ray of hope in the direction of revival of these crops. A number of nurseries have been established for producing healthy and quality planting materials of orange and large cardamom. The tissue culture laboratories, in private sector, have been able to supplement the requirement of quality planting materials. Infrastructure development to augment marketing and post harvest management are being accorded top priority. One number Integrated Pack House has been set up at Ramapo with facilities for grading, packaging and treatment of flowers. Another such facility is coming up at Mali to cater to the needs of South & West districts. Cold Rooms have been set up in various production clusters to aid production and marketing. One Integrated Processing Unit for ginger has been established at Birding, West district under Rashtriya Krishi Vikash Yojna (RKVY) to counter the uncertainties of market fluctuations. The Model Floriculture Centre at Namli has been strengthened with facilities for production of gerbera, rose and ileum. Another Model Floriculture Centre has been set up at Mani ram, South district. The Cymbidium Development Centre has been operationalised and is fully equipped with a tissue culture laboratory and training hall for production of large quantities of planting materials and imparting trainings. Technology Mission for Integrated Development of

Horticulture, sponsored by the Government of India has played the most vital role in integrating all ongoing initiatives. In addition to this flagship programmed, other initiatives under RKVY, TSP/SCSP, BADP and State Plan/Non-Plan have made noteworthy contribution in supplementing the programmers spearheaded through Technology Mission. The main success factors for successful programmed implementation are use of high quality planting materials, adoption of clusters and constant monitoring.

After the Green Revolution in mid-sixties, it became clear that horticulture, for which the Indian topography and agro climate are well suited, is the best option. India has emerged as the largest producer of mango, banana and cashew and second largest producer of fruits & vegetables in the world. The most significant development that happened in the last decade is that horticulture has moved from rural confines to commercial production and this changing scenario has encouraged private sector investment in production system management. The last decade has seen technological infusion like micro-irrigation, precision farming, greenhouse cultivation, and improved post harvest management impacting the development, but during the process various issues have emerged.

India has a wide variety of climate and soils on which a large number of horticulture crops such as fruits, Vegetables, potato, tropical tuber crops, mushrooms, ornamentals, medicinal and aromatic plants, plantation crops, spices, cashew, cocoa and betel vine are grown. After attaining independence in 1947, major emphasis by the Government of India was laid on achieving self -sufficiency in food production especially in cereals. After the Green Revolution in the sixties, it however, became clear that horticulture, for which the Indian topography and agro-climate are well suited, was an ideal method of achieving sustainability of small holdings. However, the need for diversification was acknowledged by Government of India only in mid-eighties to make agriculture more profitable, through efficient land use; create skilful employment for rural masses and women and optimize the utilization of natural resources (soil, water and environment). Past efforts have been rewarding in terms of increased production and productivity of horticulture crops. India has emerged as the largest producer of coconut, areca nut, cashew, tea and the second largest producer of fruits and vegetables in the world. The changing scenario encourages private investment. As a result horticulture has moved from rural confines to commercial ventures attracting youth since it has proved to be intellectually satisfying and economically rewarding. At national

level horticulture sector has emerged as a potential player in the Indian economy contributing 30% to GDP in agriculture from more than 13.08% area under horticultural crops as well as a means of diversification in overall development of agriculture. Horticulture invariably improves the economic status of our farmers. The earlier seasonal availability of fruits and vegetables has now extended to all the year round, increasing the per capital consumption of fruits and vegetables. It has also played a significant role in women empowerment, providing employment opportunities through mushroom cultivation, floriculture, processing, nursery raising, vegetable seed production etc. The national goal of achieving 4% growth in agriculture can be achieved through the major contribution in growth from horticulture.

NATIONAL HORTICULTURE MISSION

National horticulture mission was launched during the year 2005-06 to provide a thrust to the development of horticulture in the country. It is a centrally sponsored scheme in which government of India contributes 85% and 15% is met by the state governments. For its successful implementation mission is divided into three levels: 1) National level 2) State level 3) District level.

MISSION OBJECTIVES

The main objectives of the Mission are:

1- To provide holistic growth of the horticulture sector through an area based regionally differentiated strategies which include research, technology promotion, extension, postharvest management, processing and marketing, in consonance with comparative advantage of each State/region and its diverse agro-climatic feature;

2- To enhance horticulture production , improve nutritional security and income support to farm households;

3- To establish convergence and synergy among multiple on-going and planned programs for horticulture development;

4- To promote, develop and disseminate technologies, through a seamless blend of traditional wisdom and modern scientific knowledge;

5- To create opportunities for employment generation for skilled and unskilled persons, especially unemployed youth;

MISSION STRATEGY

To achieve the above objectives, the mission would adopt the following strategies:

1- Ensure an end-to-end holistic approach covering production, post-harvest management, processing and marketing to assure appropriate returns to growers/producers;

2- Promote R&D technologies for production, post-harvest management and processing;

3- Enhance acreage, coverage, and productivity through:

4- Diversification, from traditional crops to plantations, orchards, vineyards, flower and vegetable gardens;

5- Extension of appropriate technology to the farmers for high-tech horticulture cultivation and precision farming.

6- Assist setting up post-harvest facilities such as pack house, ripening chamber, cold storages, Controlled Atmosphere (CA) storages etc., processing units for value addition and marketing infrastructure;

7- Adopt a coordinated approach and promotion of partnership, convergence and synergy among R&D, processing and marketing agencies in public as well as private sectors, at the National, Regional, State and sub-State levels;

8- Promote capacity-building and Human Resource Development at all levels.

CROPPING PATTERN IN INDIA:

Agricultural diversification is an important instrument for economic growth. Diversification largely depends upon the opportunities and responsiveness of farmers to technological breakthrough, consumer demand, government policy, trade arrangements and development of irrigation, roads and other infrastructure (Kumar and Mittal, 2003). Changes in cropping patterns are responsive to these factors. The aggregate cropping patterns of the country are represented by the gross cropped area allocation among different crops and commodity groups. India has experienced a considerable degree of crop diversification in term of changes in the area under various crops since the Green Revolution which was largely in favor of food grains to meet the objective of self-sufficiency and country's food security. In past one decade, the changes in production pattern are more towards the horticulture sector and commercial crops like cotton. (Table No.1)

Table No. 1

Production of major crops during the recent years (million tonnes/bales)

Crops	season	Years					
		2007-08	2008-09	2009-10	2010-11	2011-12	2012-13 (2nd advance estimate)
Rice	kharif	82.66	84.91	75.92	80.65	92.75	90.69
	rabi	14.03	14.27	13.18	15.33	12.56	11.11
	total	96.69	99.18	89.10	95.98	105.31	101.80
Wheat	rabi	78.57	80.68	80.80	86.87	94.88	92.30
Coarse Cereals	kharif	31.89	28.54	23.83	33.08	32.46	28.51
	rabi	8.86	11.49	9.72	10.32	9.58	9.96
	total	40.75	40.03	33.55	43.40	42.04	38.47
total Cereals	kharif	114.55	113.45	99.75	113.73	125.21	119.19
	rabi	101.46	106.45	103.70	112.52	117.02	113.37
	total	216.01	219.90	203.45	226.25	242.23	232.56
Pulses	kharif	6.40	4.69	4.20	7.12	6.06	5.48
	rabi	8.30	9.88	10.46	11.12	11.03	12.09
	total	14.76	14.57	14.66	18.24	17.09	17.57
Foodgrains	kharif	120.96	118.14	103.95	120.85	131.27	124.68
	rabi	109.82	116.33	114.15	123.64	128.05	125.47
	total	230.78	234.47	218.10	244.49	259.32	250.15
oilseeds	kharif	20.71	17.81	15.73	21.92	20.69	19.45
	rabi	9.04	9.91	9.15	10.56	9.11	10.01
	total	29.75	27.72	24.88	32.48	29.80	29.46
Sugarcane		348.19	285.03	292.30	342.38	361.04	334.54
Cotton*		25.88	22.28	24.02	33.00	35.20	33.80
Jute & Mesta**		11.21	10.37	11.82	10.62	11.62	11.13

Note : *(million bales of 170 kg each),**(million bales of 180 kg each)

Source: Directorate of Economics & Statistics, Ministry of Agriculture.

According to above table is during 2011-12, there was record production of food grain at 259.32 million tonnes of which131.27 million tones was during Kharif season and 128.05 million tones during the Rabi season of the total food grains production, production of cereals was 242.23 million tones and pulses 17.09 million tonnes. As per 2nd advance estimates for 2012-13, total food grains production.

Growth trend patterns in horticulture produce:

All India level horticulture production and productivity is holistic growth. Horticulture production growth trend are given below chart 1 & 2:-

Chart No.1

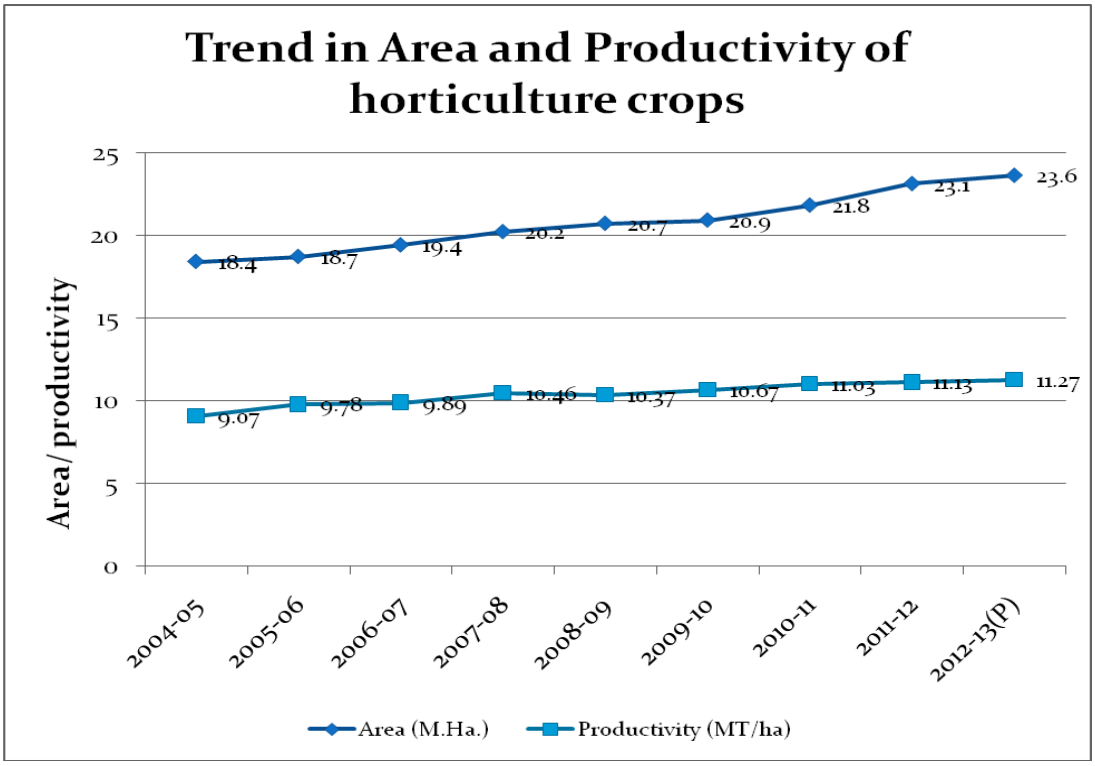
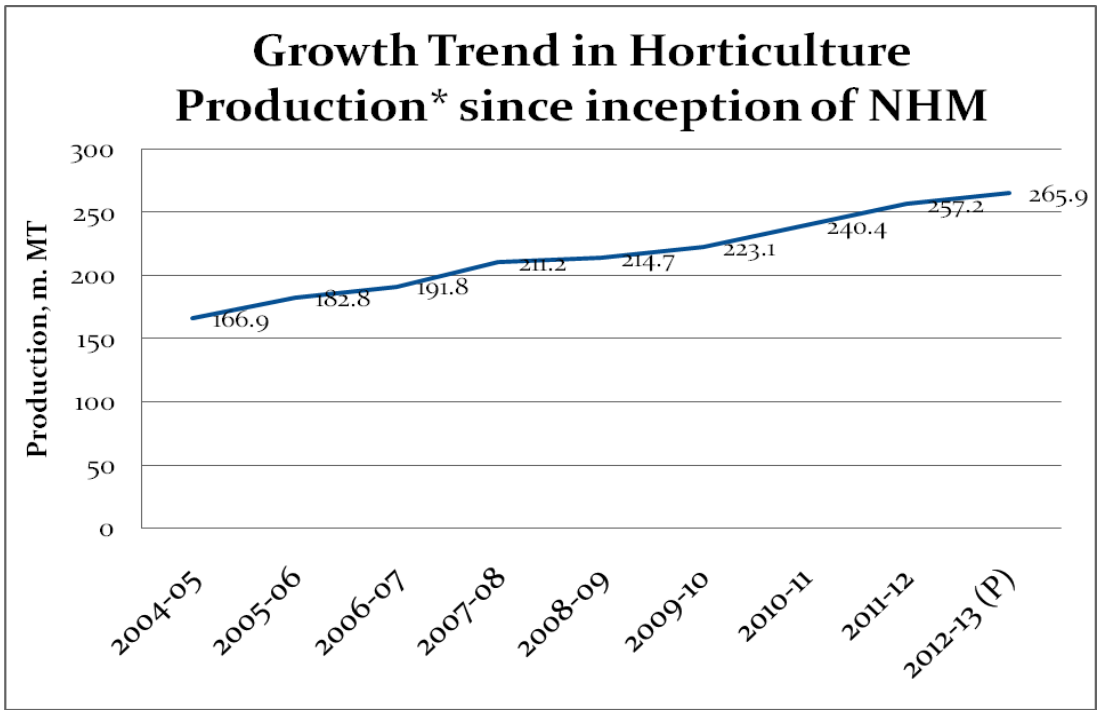


Chart No. 2



NHM : Financial

Rs. In Cr

Year	Allocation	Release
2005-06	650.00	630.00
2006-07	950.00	945.29
Total X Plan	**1600.00**	**1575.29**
2007-08	900.00	917.33
2008-09	1000.00	1010.50
2009-10	800.00	800.00
2010-11	986.00	970.86
2011-12	1200.00	1050.00
Total XI Plan	**4886.00**	**4748.69**
2012-13	1106.00	1089.27
2013-14	1600.00	400.00

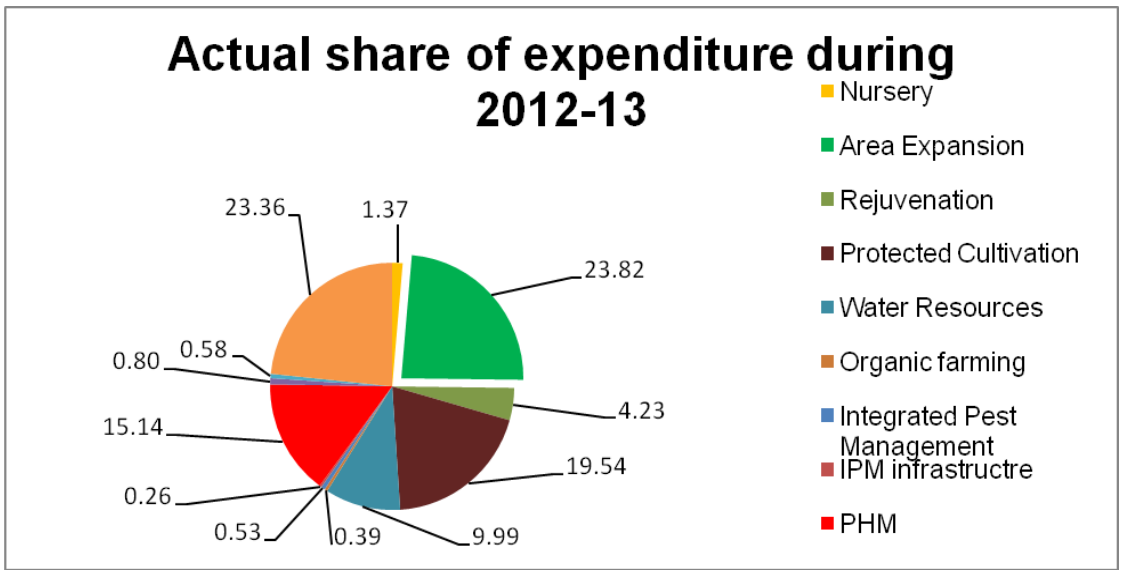
NHM : Physical

Area Expansion:

Lakh ha

	X Plan	XI Plan	XII Plan (2012-13)	Total
Fruits	2.53	10.61	0.66	13.80
Flowers	0.20	1.29	0.10	1.59
Spices	0.75	3.58	0.23	4.56
Aromatic Plants	0.28	0.53	0.01	0.82
Plantation Crops	0.19	1.27	0.16	1.62
Total	3.95	17.28	1.16	22.39

(As on 31.3.2013 web posting)



CONSTRAINTS IN HORTICULTURE PRODUCTION:

In spite of the fact that India is blessed with a wide range of soil and emetic conditions for growing large number of horticultural crops, a reasonable budgetary allocation, a sound network of R & D system, a large number of high eliding varieties / hybrids and proven technologies, there are still several constraints which given below in respect of various sectors of horticulture.

1. Lack of planning in Production 2. Non- availability of seeds of improved varieties. 3. High cost of basic production elements 4.Inadequate plant protection measures and non-availability of resistant varieties. 5. Weak marketing facilities 6. Transportation limits 7. Post harvest losses 8. A biotic stresses.

CONCLUSIONS & SUGGESTION:

Development of agriculture in India needs some critical management inputs particularly that of supply chain management -- collaboration among various stakeholders along with efficient vertical and horizontal integration. The horticulture sector in particular has to prioritize development of research in the issues of genetics, biotechnology, integrated and sustainable production systems, post-harvest handling, storage, marketing and consumer education. Diversification offers an attractive option and a major source of pushing up growth of agricultural sector. While technological up-gradation and associated institutional changes are identified as thrust areas for future development of the horticulture sector, exports are considered to be most important for the growth of the sector. India can look forward to emerge as a major producer of horticultural products and thus secure reasonable market access for its agro exports, which are largely dependent on the competitive technologies that will help in enhancing export potential. This development will also help in overall growth of the economy through generation of extra foreign exchange, creating employment opportunities and also up liftman of the small and marginal farmers, with definite positive implications on income and employment. The government should create a positive environment that will ensure a mutually beneficial relationship between farmers and organized sector. Horticultural crop diversification should be encouraged by intercropping horticultural with non-horticultural crops. The horticultural development requires a minimum set of basic production factors, an optimal crop management

infrastructure, post-harvest infrastructure, entrepreneurial management and horticultural expertise, logistical infrastructure and supporting financial infrastructure.

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