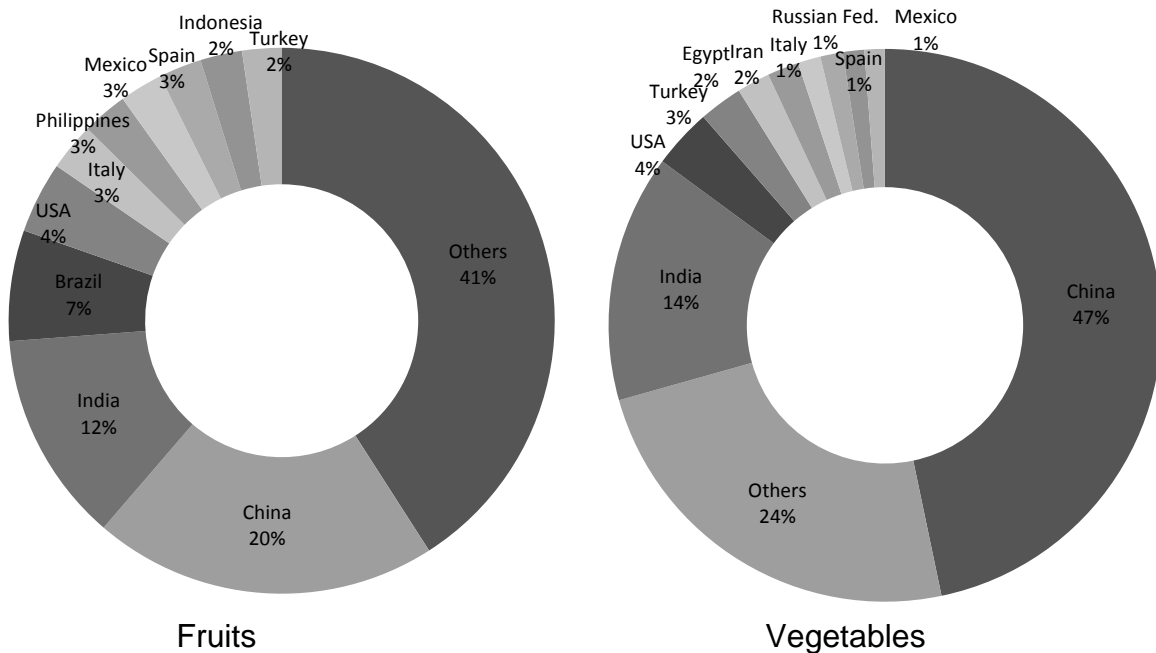


CHAPTER 9

HORTICULTURE

9.1 India & World : India has been bestowed with wide range of climate and physio-geographical conditions and as such is most suitable for growing various kinds of horticultural crops such as fruits, vegetables, flowers, nuts, spices and plantation crops (coco nut, cashew nut and cocoa). Its horticulture production has increased by 30 per cent in the last five years. This has placed India among the foremost countries in horticulture production, just behind China. During 2010-11, its contribution in the world production of fruits & vegetables was 12 % & 14% respectively. Total production of fruits during last year was 599 million tonnes while that of vegetables was 1012 million tonnes.

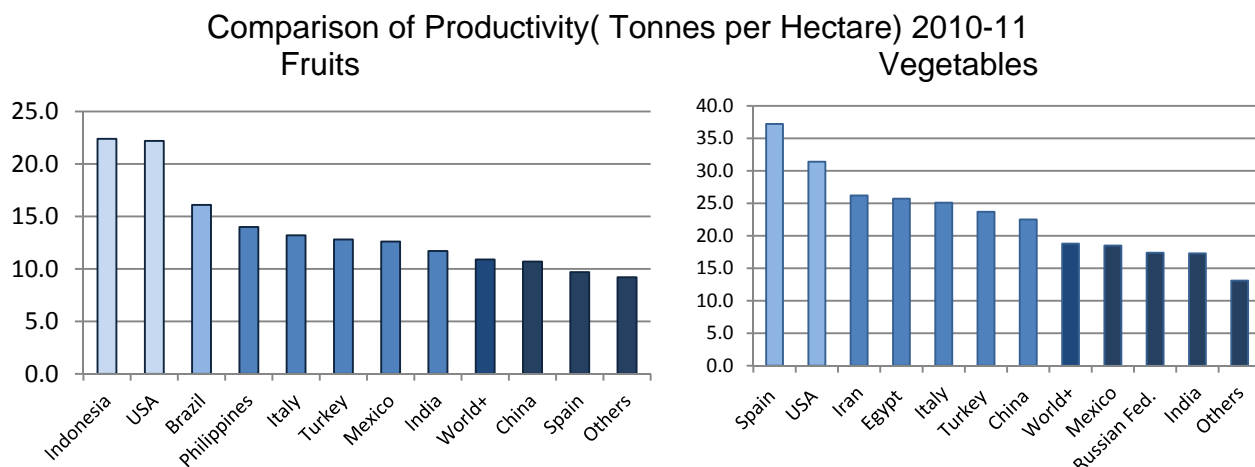
Share of different countries in global production 2010-11



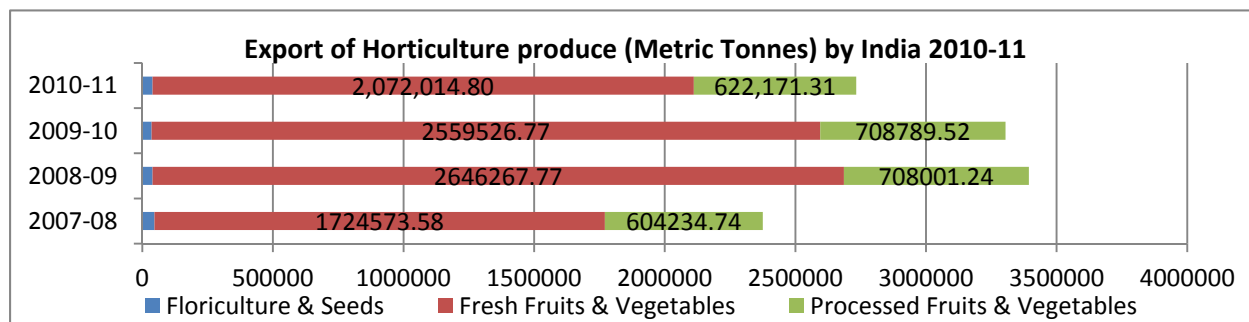
9.2 India is the largest producer, consumer and exporter of spices. India is also the largest producer of mango, banana, papaya, coconut, areca nut and cashew nut in the world .

9.3 India's significant horticulture production is despite its comparatively lower productivity. Both in case of fruits & vegetables productivity of India (11.7 & 17.3 tonnes per hectare respectively) is about half of the productivity of USA(22.2 and 31.4 tonnes

per hectare). During 2010-11, its productivity was closer to world average for both fruits(10.9) & vegetables(18.8 tonnes per hectare). Compared to the leading producer of fruits & vegetables China, India lags behind in productivity in case of vegetables, whereas it leads in case of fruits. In fact productivity of India is amongst the highest in case of some fruits like grapes, banana, papaya etc.

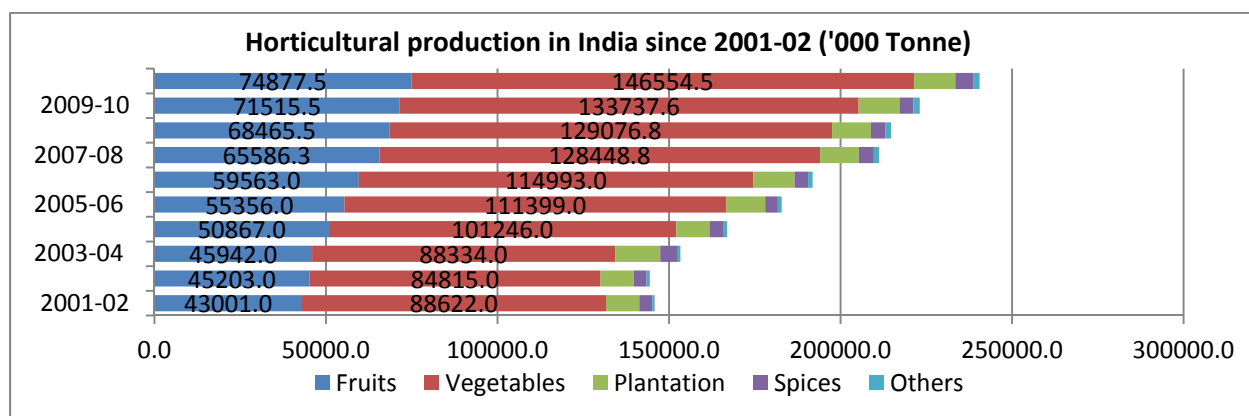
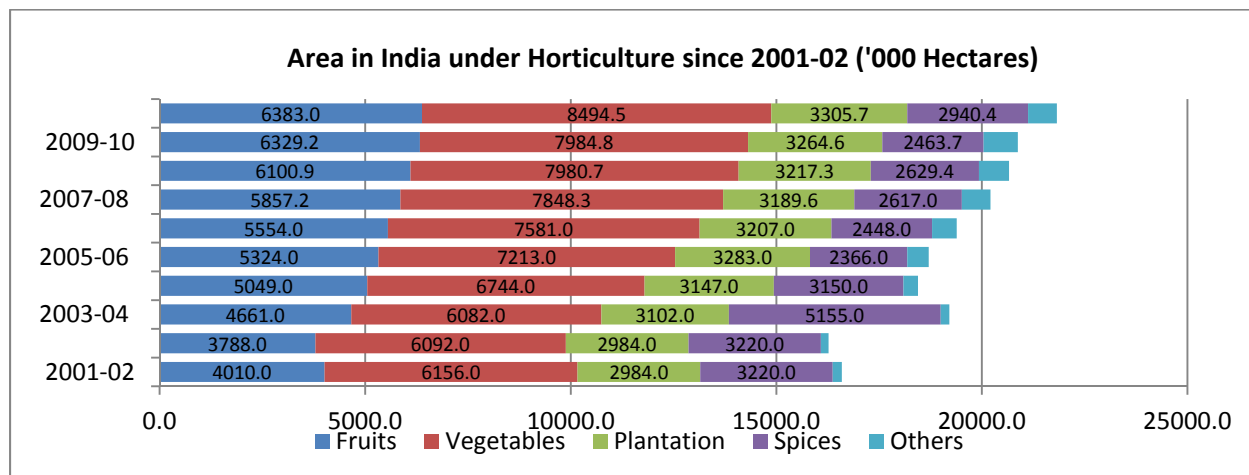


9.4 Exports: Besides meeting the increasing demand of the domestic population, which continues to grow, India exports some portion of its horticulture produce. During 2010-11 total exports of horticulture produce by India was 2733145 metric tonnes which amounted to about Rs 696461 lakh. In terms of volume, fresh fruits & vegetables comprised about 76 % of exported horticulture produce followed by processed fruits & vegetables (23 %) and floriculture & seeds (1%). Similar composition is observed in case of value of horticultural exports where once again fresh fruits & vegetables comprise about 55 % of total horticulture exports followed by processed fruits & vegetables (38 %) and floriculture & seeds (7%). Compared to previous year, value of exports of horticulture produce declined by 9% during 2010-11 (17 % decline in volume). This is largely on account of decline in exports of fresh fruit (value 15 %, quantity 19%) besides marginal decline in export value of processed fruit 2 % (12 % in volume) even though proceeds from export of floriculture and seeds increased by 5 % (9% increase in quantity).



9.5 Trends in Horticulture Production & Present Status: During the last decade, area involved in production of horticultural crops has increased by 32 % from 16592 (in

2001-02) to 21825 (in 2009-10) thousand hectares whereas the production increased by 65 % from 145785 to 240532 thousand tonnes. Increase in production is more than twice of increase in area. This is indicative of improved productivity, which, still has considerable scope of improvement.



9.6 Among fruits, banana and mango accounted for more than half (60 %) of total fruit production during 2010-11, with production of banana being almost double of that of mangoes. Among vegetables, potato comprised little less than one third of the total production (29 %). Potato along with tomato (11%) and onion(10 %) comprised half of total vegetable production in India. Annual growth rate in production of vegetables(9.6 %) was more than twice compared to that of fruits(4.7%).This was primarily on account of increased area under vegetable crops.

9.7 **State wise comparison:** With a horticulture production of about 30 million tonne(13 % of total production) , West Bengal , led the horticulture production during 2010-11 followed by Andhra Pradesh(10%), UP(10%) & Tamil Nadu (10%).Uttar Pradesh slipped to third position from the first position in 2009-10 because its production declined by 5 million tons whereas the production of west Bengal , Andhra & Tamil Nadu increased by 5, 4 & 3 million tons respectively. West Bengal alone

accounted for more than one third (34%) of total flower production (including both cut & loose flowers) during 2010-11. In fruit production, Tamil Nadu led in banana production (8 million tons, 28 %), whereas UP (3.6 million tons, 24 %) & Andhra (22%) contributed significantly in production of mango. UP (13.6 million tons) and West Bengal (3.4 million tons) each accounted for about one third (32 %) of potato production in the country. Maharashtra led in onion production with produce of about 5 million tons and accounted for about one third (32%) of total onion produced in the country .Production of tomato, however, was more evenly distributed with the highest producer Karnataka (1.7 million tons) accounting for about 10 per cent of overall production.

Government Initiatives :

9.8 Keeping in view the importance of Horticulture sector, the Government of India has launched a centrally sponsored scheme called the **National Horticulture Mission (NHM) in 2005-06**. The objectives of the Mission are to enhance Horticulture production and improve Nutritional security and income support to farm households and others through area based regionally differentiated strategies. Crops such as fruits, spices, flowers, medicinal and aromatic plants, plantation crops of cashew and cocoa are included for area expansion whereas vegetables are covered through seed production cultivation, integrated Nutrient management, integrated pest management and organic farming.

9.9 All the states and the three Union Territories of Andaman and Nicobar islands, Lakshadweep and Puducherry are covered under the mission except the 8 North Eastern states including Sikkim and the States of Jammu & Kashmir, Himachal Pradesh and Uttarakhand. The latter are covered under the Horticulture Mission for the North East and Himalayan States. The scheme is being implemented in 372 districts in the country. During 2005-06 to 2009-10 an additional 16.57 lakh hectare of identified Horticulture crops have been covered. Apart from establishments of 2192 Nurseries for production of quality planting material 2.78 lakh hectare has been covered under rejuvenation of old orchards.

9.10 With the implementation of NHM and other schemes the productions of Horticulture crops have increased from 170.8 million tonnes in 2004-05 to 214.7 million tonnes in 2008-09. The per capita availability of fruits and vegetables has increased from 391 gram per day in 2004-05 to 466 gram per day in 2008-09.

9.11 Technology Mission for Integrated development of horticulture in North Eastern states, Sikkim, J&K, Himachal Pradesh and Uttarakhand

9.12 This scheme has launched in 2001-02 to address issues related to Production and productivity, marketing and processing of Horticulture crops in the North Eastern states. In 2003-04, the Mission was extended to 3 Himalayan states of Himachal

Pradesh, Jammu & Kashmir and Uttarakhand. This scheme has now been renamed as **Horticulture Mission for North Eastern and Himalayan states**. Under this Mission 265435 persons including 53276 women have been trained so far.

9.13 Various Institutes like **Indian Agricultural Research Institute (IARI)**, Horticulture Wing in **Indian Council of Agricultural Research (ICAR)** , **Indian Institute for Horticulture Research**, Bangalore, Agricultural universities etc have been continuously striving to improve the quality of the horticultural products as well as to increase their productivity.

9.14 Sources of Horticulture Data:

- **Directorate of Economic & Statistics (DES), Ministry of Agriculture**, Government of India operates a Centrally Sponsored Scheme “Crop Estimation Survey on Fruits and Vegetables (CES-F&V)” for estimating area and production of horticulture crops. However, CES (F&V) covers only 7 fruits crops 5 vegetables crops and 2 spice crops from 11 states only.
- **The National Horticulture Board (NHB)** compiles and publishes annual data base for horticulture sector in respect of all the states and the crops.
- **Food & Agriculture Organization (FAO)** maintains the information on area under cultivation of horticultural products, production & productivity for various countries in the world.

9.15 **Challenges** : The horticulture sector in India is characterized by small, segregated farms with low per-hectare yields and huge post-harvest losses, owing to outdated practices. A recent study by YES Bank showed India stored only two per cent of its horticulture products in temperature-controlled conditions, while China stored 15 per cent and Europe and North America stored 85 per cent of their products in such conditions.

9.16 Adequate cold storage facilities are available for just about 10 per cent of India’s horticulture production. Of the total annual production, 30-40 per cent is wasted before consumption. During the peak production period, the gap between the demand and supply of cold storage capacity is a mind-boggling 25 million tonnes.

9.17 As per National Centre for Cold Chain Development, “The biggest wastage happens during the transportation of horticulture products from the farm gate to mandis and thereafter. Storage solutions can be provided only near the mandis, and this does not solve the problem. The answer lies in minimising the wastage that happens during transportation.” From a farm gate to a consumer, a horticulture product passed through seven different distribution channels, and in every step, there was a loss of five-seven per cent.

9.18 Processing losses also abound. While China processed about 30 per cent of the food (fruits and vegetables) in 2009, the Indian food processing industry has been set a target of raising the level of processing perishable products from six per cent to 20 per cent by 2015. The \$70-billion Indian food processing industry is dominated by small and medium enterprises, which do not have the capacity to undertake large-scale processing of fruits and vegetables.

9.19 Recent initiatives of the government to open Foreign Direct Investment (FDI) in retail is expected to minimize some of these problems. It is expected that entry of international retail chains would improve the situation by augmenting the storage capabilities, processing facilities & through efficient distribution, thereby minimizing wastage and benefitting the farmers as well as the consumers through a more coordinated and systematic approach besides economy of scale operations .