

Horticulture

8.19 India, with its wide variability of climate and soil, produces a large range of horticultural crops such as fruits, vegetables, potato, tropical tuber crops, ornamental crops, medicinal and aromatic plants, spices, and plantation crops like coconut, cashewnut, cocoa, etc. The Government has identified horticultural crops as a means of diversification for making agriculture more profitable through efficient land use, optimum utilization of natural resources (soil, water and environment) and creating skilled employment for rural masses, especially women folk (Box 8.3). Recent efforts have been rewarding in terms of increased production and productivity and availability of a much larger volume of horticultural produce. India has emerged as the largest producer of coconut, arecanut, cashewnut, ginger, turmeric, black pepper and the second largest producer of fruits and vegetables. Among the new crops; kiwi, olive crops and oil palm have been successfully introduced for commercial cultivation in the country. Some improvement is seen in the adoption of technology for raising production.

8.20 Efforts are on to encourage private investment in hi-tech horticulture with micro-propagation, protected cultivation, drip irrigation, and integrated nutrient and pest management besides making use of latest post-harvest technology particularly in the case of perishable commodities. As a result, horticulture crop production has begun to move from rural confines to commercial ventures and has attracted young entrepreneurs, since it has proved to be intellectually satisfying and economically rewarding.

8.21 It is only recently that a reasonably reliable data base for horticultural products has begun to take shape. The estimated area and production of some of the major horticultural crops in recent years is given in Table 8.10.

Fruits

8.22 A large variety of fruits are grown in India. Of these mango, banana, citrus, pineapple, papaya, guava, sapota, jackfruit,

litchi and grape are some of the tropical and sub-tropical fruits and nuts. Apple, pear, peach, plum, apricot, almond and walnut constitute the temperate fruits and nuts. Aonla, ber, pomegranate, annona, fig and phalsa are some of the arid zone fruits. India produces over 46 million tonnes of fruits accounting for about 10 percent of the world production. The country ranks first in the production of mango, banana, sapota and acid lime and, in recent years recorded the highest productivity in grape.

8.23 Mango is the most important fruit covering about 39 percent of the area accounting for 23 percent of total fruit production in the country. India's share in the world production of mango is about 54 percent. Citrus ranks second in area and accounts for about 10 percent of country's fruit production. Limes, lemons, sweet orange and mandarin cover bulk of the area under this group of fruits. Banana ranks third in area covering about 13 percent of the total area. It ranks first in fruit production contributing nearly one-third of total fruit production. Apple is the fourth major fruit crop of the country with production of 1.42 million tonnes. The share of other fruits like guava and papaya is about 4 percent while that of grapes and pineapple is about 2 percent and litchi, about 1 percent. The arid zones of the country are potential areas for fruits like aonla, ber, pomegranate, annona, etc. There has been a steady increase in the area and production of these fruits particularly aonla, ber and pomegranate in the country as a result of identification and development of suitable varieties and production technologies. In addition to these, date palm and fig cultivation is also finding favour in some areas.

Vegetables

8.24 Vegetables constitute the most important food next only to cereals and milk. Important vegetable crops grown in the country are potato, tomato, onion, brinjal, cabbage, cauliflower, okra and peas. India occupies first position in the production of cauliflower, second in onion and third in cabbage production in the world.

Box 8.3 : Towards agricultural diversification

The shelf life of foodgrains is over 3 years or even more as against fruits and vegetables whose shelf life ranges between 1 week to 3 months. Currently hardly 1 per cent of over 140 million tonnes of fruits and vegetables produced in the country goes through the processing route. Hence strategies for diversified agriculture should involve a separate road map for value addition in fruits and vegetables sector. Creation of essential infrastructure for preservation, cold storage, refrigerated transportation, rapid transit, grading, processing, packaging and quality control would be the key areas for such a strategy.

The Ministry of Food Processing is setting up food parks in different parts of the country. The idea behind setting up of food parks is to enable small and medium entrepreneurs find access to capital intensive facilities, such as cold storage, warehouse, quality control labs, effluent treatment plants etc. Development of such facilities is expected to make the food processing units in the food parks cost competitive besides improving their market accessibility. So far 30 food parks have been sanctioned in different parts of the country. The Ministry is also in the process of introducing a new Plan Scheme for development of infrastructure like cold chain, storage etc. for the benefit of food processing units in addition to the scheme of food parks already in existence.

The Ministry is also operating Plan Schemes on the Promotion of Total Quality Management including ISO 9000, ISO 14000, Hazard Analysis and Critical Control Points (HACCP), Good Manufacturing Practices, Good Hygienic Practices etc. with the following objectives:

- To motivate the food processing industries for adoption of food safety and quality assurance mechanism.
- To prepare them to face the global competition in the international trade in the post WTO era.
- To enable adherence to a stringent quality in hygiene norms.
- To enhance product acceptance by overseas buyers.
- To keep Indian Food industry technologically abreast of international best practices.

In addition, Ministry of Food Processing is also working towards the promotion of bar coding on food packages, as the bar coding is on its way to become almost a compulsory requirement in the global market.

8.25 Brinjal is a major vegetable crop and is available, like potato and onion, almost throughout the year. It contributes about 8.2 percent of the total production of vegetables followed by tomato (7.7 percent) and cabbage (6 percent). Onion is the fourth most important commercial vegetable crop, accounting for 5 percent share in the vegetable production. Cauliflower and peas contribute about 5 percent and 3 percent respectively. Among root & tuber crops, India ranks 5th in the world in area and production of potato and tops with 24 percent share in total vegetable production. Annual export of fresh processed fruits and vegetables is valued at about \$400 million.

Spices

8.26 India, the home of spices, produced 3.08 million tonnes in 2001-02, which includes a wide variety of spices such as black pepper, cardamom (small and large), ginger, garlic, turmeric, chilli and a large variety of tree and seed spices. Chilli (or mirchi) tops with a share of 33.7 percent in the total production. Turmeric has a share of 21.6 percent in the total production of spices. Indian spice exports is valued at over \$300 million annually.

Coconut and Cashewnut

8.27 Coconut is an important tree crop grown extensively in coastal areas providing livelihood to about 10 million people in cultivation, processing and related activities. Besides production of over 8.8 million tonnes of coconut, the coir obtained from processing coconut husk is of high commercial value. Shell based products have also gained entry into the national and international markets. The coir pith made into brick like structure is now used for raising horticultural plants especially in greenhouses.

8.28 India is the largest producer, processor, consumer and exporter of cashew in the world. India currently produces 0.46 million tonnes of cashewnut, accounting for 45 percent of global production.

Flowers

8.29 Traditional flowers such as jasmine, marigold, chrysanthemum, tuberose, crossandra and aster are commonly grown. Commercial cultivation of cut flowers such as rose, orchids, gladiolus, carnation, anthurium, gerbera and lilies has also become popular. The total production of

Table 8.10 : Estimated area and production of major horticultural crops (Area: million hectares; Production: million tonnes)						
Crop	1999-2000		2000-2001		2001-2002*	
	Area	Production	Area	Production	Area	Production
Fruits	3.80	45.50	3.89	45.37	3.95	46.60
Apple	0.23	1.04	0.24	1.23	0.25	1.42
Banana	0.49	16.81	0.48	16.17	0.62	16.45
Citrus	0.52	4.65	0.50	4.40	0.56	4.58
Grapes	0.04	1.13	0.05	1.06	0.06	1.10
Guava	0.15	1.71	0.15	1.63	0.19	1.68
Litchi	0.05	0.43	0.05	0.40	0.05	0.42
Mango	1.48	10.50	1.52	10.24	1.56	10.64
Papaya	0.06	1.66	0.07	1.77	0.07	1.82
Pineapple	0.07	1.02	0.08	1.22	0.08	1.26
Sapota	0.06	0.80	0.07	0.67	0.07	0.70
Others	0.65	5.75	0.23	6.58	0.44	6.53
Vegetables	5.99	90.83	6.25	93.92	6.89	96.54
Brinjal	0.50	8.12	0.47	7.70	0.50	7.80
Cabbage	0.26	5.90	0.25	5.62	0.27	5.70
Cauliflower	0.25	4.72	0.26	4.69	0.27	4.70
Okra	0.35	3.42	0.35	3.34	0.36	3.42
Onion	0.49	4.90	0.50	4.72	0.52	4.85
Pea	0.27	2.71	0.32	3.01	0.34	3.11
Potato	1.34	25.00	1.21	22.24	1.41	24.00
Tomato	0.46	7.43	0.50	7.28	0.52	7.42
Others	2.07	28.63	2.49	35.34	2.70	35.54
Flowers	0.09	0.52	0.10	0.56	0.11	0.57
Spices	NA	2.91	2.50	3.02	2.60	3.08
Cashew nut	0.69	0.52	0.72	0.45	0.73	0.46
Arecanut	0.29	0.33	0.29	0.33	0.29	0.33
Coconut**	1.78	12.25	1.84	8.70	1.85	8.80
Other horticultural crops	NA	1.75	0.11	0.15	0.12	0.17
NA : Not available *Provisional **Production in thousand million nuts						
Source : Ministry of Agriculture.						

flowers during 2001-02 was 0.57 million tonnes of loose flowers and 803.5 million numbers of cut flowers. Although flower cultivation has been practised in India since time immemorial, floriculture has blossomed into a viable business only in recent years.

Considering the potential of this sector for generation of income and employment opportunities, promotion of involvement of women and enhancement of exports, it has been identified as an Extreme Focus Area for exports by the Government.