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Rapporteur's Report on Horticulture in India: Organisation of Production, Marketing and Processing

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I

INTRODUCTION

The horticultural crops have come into the main focus of the policy makers, the Government and the private sector of late only. The prime position occupied by India, as the second largest producer of fruits and vegetables in the world coupled with the need to diversify the agricultural produce export basket, was the main reason for this change in the perception of the planners especially during the Eighth Plan period. The importance given is evident from the huge allocation of Rs.10,000 million in the Eighth Plan period as against hardly Rs. 232 million during the Seventh Plan. The liberalised industrial policy of 1991 by the Government of India allowing 51 per cent equity participation in joint ventures, liberal import of plant material, tariff concession, etc., have resulted not only in technological advancement but also in the flow of huge capital by private firms into this sector as in the case of hi-tech floricultural units.

Unfortunately, not enough attention has been paid to the special problems associated with this group of crops such as wide price fluctuations due to seasonal and highly perishable nature of these crops, huge time lag between investment and returns resulting in high capital requirements, exploitation by middlemen at the markets, lack of infrastructural facilities like cold stores, etc. These problems have come in the way of taking advantage of the favourable climate created by the Government for this sector. The very recent experience (July/August 1997) of the Karnataka tomato growers who are forced to dump their tomatoes on the roads due to rock bottom prices offered in the market though they could get very high yields due to hybrid seeds technology speaks volumes of the neglect of these problems. The post-harvest losses of fruits and vegetables was estimated to be around 25-30 per cent of the total production which is mainly due to lack of infrastructural facilities for handling these perishable commodities and absence of linkage between the processors and fresh fruit and vegetable markets. Hardly half to one per cent of the total fruits and vegetables are presently processed in India compared to 83 per cent in Malaysia, 78 per cent in the Philippines, 70 per cent in Brazil and 60-70 per cent in U.S.A., resulting in poor capacity utilisation of the processing plants.

In view of the above situation, the subject chosen for discussion in this Conference has assumed great significance and relevance.

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II

REVIEW

In all 69 papers were accepted for discussion in this Conference. The papers received were grouped into topics based on the outline provided to the contributors and the salient findings are highlighted below.

1. *Economics of Cultivation*

Nineteen of the total papers received on this subject could be broadly grouped under this topic. Six papers have worked out the costs and returns of growing four fruit crops, viz., mango (Andhra Pradesh and Uttar Pradesh), apple (Himachal Pradesh), ber (Haryana and Andhra Pradesh) and banana (Uttar Pradesh); four have dealt with costs and returns associated with growing vegetables in Madhya Pradesh and Uttar Pradesh and six pertain to growing flower crops in states like Maharashtra, Uttar Pradesh, West Bengal, Himachal Pradesh and Punjab. The resource use efficiency in the cultivation of vegetables was analysed in two papers and labour demand for cultivation of banana fruit in one paper.

In all the above papers, the profitability of these crops was brought out and these crops were reported to be highly remunerative. The product price plays an important role in determining the profitability of horticultural crops, as was pointed out earlier in the case of tomato in Karnataka and as this is depending on the time of harvest/season, there is a need to take the changes in product prices into account while working out the profitability.

In none of the papers, an assessment was made regarding the influence of modern technology, i.e., hybrid seed technology or new varieties like Mallika, Amrapali in the case of mango crop on the economics of cultivation of these crops except in one paper on flower crops in Himachal Pradesh where capital requirements for setting up a tissue culture and floriculture unit were worked out.

2. *Area, Production and Productivity and Development Schemes for Promotion*

The changes taking place in area, production and productivity of horticultural crops was analysed by the authors both at all-India level as well as at individual state level. Some of them have dealt only with fruits, some with only vegetables and the others with both fruits and vegetables. Most of the papers dealing with changes at all-India level have used data generated by the National Horticulture Board (NHB) except in one or two papers which have used data collected by the Centre for Monitoring Indian Economy (CMIE). The CMIE data coverage was limited to the vegetables, potato, onion, tapioca and banana fruit which were considered as forecastable crops by the Ministry of Agriculture, Government of India and published by them prior to the establishment of NHB.

In all the above papers, the authors have found positive changes in both area and production and only in the case of yield in a few crops they have observed negative change. However, none of the authors has made any attempt to know the reasons for this change, i.e., how the area has increased, is it by diversion from other crops or by bringing in new area under cultivation, etc., by comparing the changes in the case of their competitive crops.

In some of the papers the export and consumption were also touched upon and projections were made regarding the requirements.

No attempt was also made to point out the lacunae in the data collection, which would affect such type of analysis. For example, in the case of perennial crops with time lag between production and planting, the productivity figures will be misleading as some of the area under the crop may be newly planted and as such it may not contribute to production at all.

Regarding the state policies/special development programmes there were three papers, one from Himachal Pradesh dealing with the price support, subsidies, etc., and one each from Rajasthan and Andhra Pradesh dealing with promoting the cultivation of horticultural crops. There were no papers dealing with the national schemes for promoting both production and export by organisations like National Horticulture Board, Agricultural and Processed Food Products Export Development Authority, Government of India, etc., which have some impact on the development of horticultural crops.

3. *Horticulture Crops Vs. Other Crops*

On this topic, the authors have compared the economics of cultivation of all the three types of horticultural crops, viz., fruits, flowers and vegetables with mostly field crops like paddy, wheat, soyabean, sugarcane, mustard, etc. Some of the authors have compared the costs and returns of perennial fruit crops straight with the field crops without even bothering about the fact that there is an establishment cost and also there is a lag between planting and economic bearing. In all the cases, the authors have proved from their calculations of costs and returns, and labour employment that the cultivation of horticultural crops is much more profitable and labour intensive than the field crops and advocated for their cultivation. Though the horticultural crops *per se* may be profitable, the role of horticultural crops in increasing the income of the cultivators in the whole farm situation has not been worked out. The fact that still large area is devoted to food crops by most of the small cultivators shows that it is not because of the ignorance regarding the profitability but due to other compelling reasons like food and fodder requirements, location factors, etc., they are not growing them. Hence, how these horticultural crops can fit into the overall scheme of crop planning by the cultivators needs to be brought out.

4. *Horticultural Crops' Impact on Livestock*

Only two papers have covered this topic. In the paper by K.C. Dhawan *et al.* from Punjab, the impact of introducing mango and kinnow on dairy was studied by developing optimum plans through linear programming technique. They have found that only at enhanced returns of 50 per cent and 75 per cent of mango and kinnow they could come into the plans at the cost of dairy animals. In the other paper from Uttar Pradesh (Hemant Kumar *et al.*), the authors have reported that increasing the area under horticultural crops has resulted in an increase in the number of dairy animals, though it resulted in decreasing the number of draught animals in modern technology farms. According to the authors, the decrease in draught animals was due to introduction of tractor power though they tried to conclude that the horticultural crops have resulted in a decrease in livestock.

5. *Marketing*

The papers received under this topic have covered four aspects, viz., price spread in the marketing of horticultural commodities, co-operative marketing societies, contract farming and post-harvest losses during marketing practices. Price spread was worked out in the case of two vegetables, viz., potato and onion and two fruits, grape and citrus. The working of a co-operative society, viz., Horticultural Producers' Co-operative Marketing and Processing Society Ltd. (HOPCOMS) in Bangalore and marketing of grapes and vegetables through co-operative society in Maharashtra and Bihar respectively were covered in three papers on this aspect. The post-harvest losses of mango in Uttar Pradesh due to transport, packing, etc., were estimated in two papers. The paper dealing with contract farming has examined the experience of other countries but has discussed little about its relevance in the Indian context.

The most important aspect in the marketing of horticultural crops, viz., risk due to wide price fluctuation and exploitation at the market yards and the measures to be taken, was not at all tackled by the scholars. Similarly, no attempt was also made by any scholar to analyse the steps taken/impact of some measures to overcome the price risk such as support price schemes, cold storage of the commodities, etc., except in the paper from Himachal Pradesh where some details regarding price support, subsidies, etc., offered by the State Government was discussed. Similarly, no attempt was also made to study the market integration.

6. *Exports*

Among the six papers which have dealt with exclusively on export of horticultural crops, three were on fruits and vegetables, two were on floricultural crops and one was on cashew. In all these papers, time-series data were used for working out the growth of exports, the destination of exports and the general constraints faced in the export of these crops. In none of the papers any attempt has been made to study the reason for changes in the export growth, i.e., to what extent the changes in Government policy such as liberalised imports, concession in tariff, disintegration of U.S.S.R., Gulf war, etc., were responsible for these changes. Similarly, the impact of exports on domestic consumption and prices was also not attempted. In the past, i.e., during the 1980s and in 1994, the Government was forced to put a temporary ban on export of onions to contain the spiralling prices in the domestic market and hence it is desirable to study the impact of exports on domestic market. Similarly, a lot of 100 per cent export-oriented units with foreign collaborators were started and no information is available regarding their impact/desirability and the problems faced. The scope and extent of export of some new exotic fruits like litchi, chikkoo, etc., was also not discussed.

7. *Infrastructure*

Hardly any paper received for the Conference has examined in depth the existing and required infrastructural facilities for the development of horticultural crops. Most of the papers have in a general way pointed out the lack or need for infrastructural facilities like cold stores, packing houses, pre-cool chambers, transportation, post-harvest technologies, etc. In the paper by K.U. Viswanathan and K.J.S. Satyasai, the authors tried, to some extent, to examine the infrastructural facilities both credit and non-credit ones like processing,

regulated markets, co-operative societies available in relation to production in different states and found them to be inadequate. No attempt was made to examine the existing facilities, the future requirements and needed investment to develop the facilities like cold stores, transportation, packing, etc.

8. *Processing*

This topic has not received the attention of the paper-writers. No paper was received on any aspect of processing, like economics of processing, linkages with production, impact of liberalised policies, growth of processing industry, contractual arrangements for supply of raw materials, demand for preserved products, etc. Only in a few papers, passing remarks were made regarding the processing industry.

III

ISSUES FOR DISCUSSION

1. Adequacy and needed improvements in data base of horticultural crops.
2. Implications of growth of horticultural crops on agricultural and allied sectors like forestry, sericulture, etc.
3. Market risks and its implications on production of horticultural crops.
4. Implications of modern technology/joint ventures on indigenous technologies and development of horticulture.
5. Impact of exports on domestic consumption and prices.
6. Adequacy and future needs of infrastructural facilities - Role of Government/private/public investment and its scope.
7. Role/impact of Government policies, programmes and organisations in development of horticulture.
8. Horticulture processing industries: New developments in integration with production, the problems, likely changes in composition, i.e., scale of industries due to entry of foreign collaborators, etc.
9. Post-harvest technologies and its implications on horticultural marketing.
10. Human resource requirements: Training facilities, manpower availability and requirements, etc.