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**EVALUATION OF SOFT LOAN SCHEMES FOR THE
DEVELOPMENT OF POST HARVEST INFRASTRUCTURE FOR
HORTICULTURAL CROPS IN INDIA
(A CONSOLIDATED REPORT)**

Executive Summary

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EXECUTIVE SUMMARY

1. Introduction

India's varied agro-climatic conditions allow it to produce a wide variety of horticultural crops. Some of these crops can be profitably grown on marginal and degraded lands that are not best suited for other field crops. Horticulture provides better alternatives for diversification of agriculture. The sector also helps in generating huge additional employment opportunities for rural masses through its backward and forward linkages, increasing their income and helping poverty alleviation. The horticulture sector contributes about 24.5 per cent towards agriculture GDP from only 8 per cent of the cultivated area. The sector also helps in earning a sizable valuable foreign exchange for the country through exports.

India has made rapid progress in horticulture sector with 11.34 million hectares of land under horticulture crops and about 41 million tonnes of fruit production accounting for about 10 per cent of the total world fruit production in 1995-96. In case of vegetables, it is the second largest producer of vegetables with 73 million tonnes accounting for about 13 per cent of the world production in 1995-96. However, this is not matched by the availability of post-harvest infrastructure (PHI) leading to enormous losses valued at more than 30 billions of rupees annually. It is estimated that India wastes more fruits and vegetables than are consumed in the UK. Therefore, adequate PHI is crucial for India if she wants to curb the huge losses, to facilitate the domestic trade, to increase the farmers share in consumer rupee and to translate its high horticultural production into an equally impressive presence in global market.

2. National Horticulture Board (NHB) and the Soft Loan Schemes (SLSs)

Sustained efforts are being made by various organisations to develop adequate PHI facilities and to provide sound footing for boosting country's horticultural exports. One such major organisation that is doing efforts towards development of infrastructural facilities for horticultural crops is the National Horticulture Board (NHB). The NHB was established in 1984 by the Government of India.

Over the years the NHB has gathered a rich experience in terms of handling of a variety of programmes that not only include strengthening of production base but also development of PHI, including domestic and export trade of horticultural produce. Among the various horticulture development programmes, the NHB initiated the "Integrated Project on Management of Post-Harvest Infrastructure of Horticultural Crops" (IPMPHI) in 1988-89. Under this scheme, financial assistance of Rs. 15 lakhs per beneficiary organisation was provided for the creation of infrastructure in the form of a subsidy up to 1992-93. However, much impact was not seen under this scheme due to inadequate financial assistance. Therefore, IPMPHI was converted from a subsidy scheme to a soft loan scheme (SLS) by the NHB in 1993-94. In addition to this, another soft loan scheme "Development of Marketing of Horticultural Produce through Participation in Soft Loan" (DMHPSL) was also initiated in 1993-94. The main thrust of these two soft loan schemes was to create modern PHI that can reduce losses, improve quality, facilitate trade and ultimately give a better share to the producer in the rupee spent by the consumer.

These schemes were being implemented by the NHB since 1993-94. The financial assistance was provided to cooperative societies, farmer's associations, public sector organisations and private sector organisations / corporates, etc. Under these schemes, the NHB provided a loan up to Rs. 1.00 crore with 4 per cent (soft loan) service charge per annum to the organisations intending to create PHI facilities. The beneficiaries of these schemes were expected to introduce new technology aside from strengthening infrastructure facilities with backward linkages among producers, processors and marketers. The major thrust of these scheme was to help establish latest technology towards retaining the quality, colour, flavor, texture, nutritive value of product and minimize the post harvest losses, encourage the exports and induce private investment for the development of PHI for horticultural crops in the country. In other words, the rationale behind the schemes was to promote diversification enhancing the farm income and generating employment in rural areas. This move of NHB was also an important step because the processed commodities in our country form only a small percentage of the total production. In case of fruits and vegetables, only one percent of the production was processed in India as against 83 per cent in Malaysia, 78 per cent in Philippines and 70 per cent in Brazil.

Although the NHB provided soft loan with a maximum limit of Rs. 1.00 crore with a moratorium period of one year to set up the project, there was also a ceiling for various components covered under these schemes. The various components covered under the schemes include mechanised grading / packing centres, pre-cooling and cold storage units, refrigerated truck / van and specialised transport vehicles, retail outlets, auction platforms, ripening / curing chambers, marketing kits, quality testing equipments and improved packing. It is to be noted that NHB assistance was limited to 50 per cent of the actual cost or limit prescribed for each component, whichever was less. The NHB assisted projects include sectors such as floriculture, fruits and vegetables marketing, fruits and vegetables processing, mushroom, etc.

3. Need For the Study

The creation of PHI for horticultural produce requires a huge capital investment. On an average the cost of setting up of such facilities was estimated at Rs. 3000 per tonne of fruits and vegetables. In this context, the NHB is trying to develop the industry by providing assistance under the soft loan schemes. As reported earlier, these schemes were implemented by the NHB from 1993-94. However, after a span of five years of implementation of the schemes, it was observed that the gloom was looming large over some of the sectors of this industry. It was realised that a sizeable number of PHI projects assisted under the schemes entered into a depressed position. In this context, the imperative need was to critically evaluate the NHB soft loan schemes implemented during the period between 1993-94 and 1996-97.

In view of this, the present study was designed to assess the NHB soft loan schemes for the development of PHI for horticultural crops. An evaluation of these schemes is likely to help in promoting further investment opportunities in this sector in such a planned and appropriate manner that might bring a positive change in an otherwise dismal scenario of this sector.

4. Objectives of the Study

- (i) To study the horticultural development in India.
- (ii) To study the development of PHI for horticultural crops in India.
- (iii) To study the growth of PHI created by NHB soft loan schemes for fresh fruits, vegetables and flowers during the period 1993-94 to 1996-97 in India.

- (iv) To analyze the NHB soft loan schemes with reference to adequacy of loan, infrastructure development, its use, constraints, etc.
- (v) To study the use of created PHI facilities by the farmers and its impact on their cropping pattern, employment and income.
- (vi) To suggest policy measures for improvement of the soft loan schemes and the development of PHI for horticultural crops in India.

5. Scope of the Study

The study "Evaluation of Soft Loan Schemes for the Development of Post-Harvest Infrastructure for Horticultural Crops" was undertaken at the behest of the Directorate of Economics and Statistics, Department of Agriculture and Co-operation, Ministry of Agriculture, Government of India, New Delhi. The Agro-Economic Research Centre (AERC) of Gokhale Institute of Politics and Economics, Pune, was made responsible to work as the National Co-ordinator of the study and to make the consolidated report of the studies conducted in the states of Maharashtra, Karnataka, Punjab and Madhya Pradesh. This study consolidates the results of the evaluation exercises of the NHB soft loan schemes conducted by the AERCs / Unit of Pune, Bangalore, Ludhiana and Jabalpur.

6. Methodology

The present study was undertaken in Maharashtra, Karnataka, Punjab and Madhya Pradesh at the direction of the Ministry of Agriculture, Government of India. The selection of districts in these states was governed by the presence of PHI facilities developed with the assistance of NHB under the SLSS. Based on the kind of ownership of unit financed by the NHB under the SLSS, two types of PHI units have been selected for primary investigation. The first type relates to those PHI units, which were developed by the private sector corporate units or individual entrepreneurs with the help of SLSS. The second type of sample relates to those PHI units which were established in co-operative sector with the help of the loan under the SLSS. Both of these types of PHI units received the horticulture commodities from a number of farmers for post-harvest handling, storage and or marketing. The sample included 14 PHI units in four study states. A village or a cluster of villages was so selected that they are the beneficiaries of the selected PHI units.

The member farmers of the selected PHI units and the non-member farmers were grouped into three landholding categories - small farmers (less than 2.00 ha), medium

farmers (2.01 to 4.00 ha) and large farmers (above 4.00 ha). Sixty farmers who were the members of the PHI units were randomly selected to represent the small (20), medium (20) and large (20) landholding classes. Similarly, another sixty non-member farmers were also selected from the beneficiary villages of the selected PHI units to represent their respective landholding classes. Thus, in each study state the final sample included 120 respondent farmers (60 members and 60 non-members) equally distributed in selected PHI units. However, in Punjab the number of sample farmers varied due to non-availability of farmers in the respective PHI unit beneficiary villages.

The study is based on primary and secondary data. The primary data were collected from the member and non-member sample farmers through the personal interviewers. This data was collected through a specially designed and pre-tested questionnaire that covered the information on household resource base, land use pattern, cropping pattern, production and marketing of horticultural crops, employment, income, assets, etc. Primary data were mainly collected for the reference year 1997-98. However, in order to evaluate the impact of NHB soft loan schemes on cropping pattern, employment, income and assets of the farmers, data on relevant parameters were also collected for the reference year 1992-93. In addition to this farmer questionnaire, two additional questionnaires were designed and used to elicit the information from the cooperative societies, and private entrepreneurs. The secondary data relating to area, production and exports of horticultural crops and development of PHI were obtained from various sources such as Statistical Abstracts of respective states, APEDA Year Books, FAO Production Year Book, National Horticulture Board, State Horticulture Department, etc.

7. Major Findings

7.1 Status of Horticulture in India

The area under fruit, vegetable, and flower-crops increased by 24.47, 9.94, and 11.11 per cent, respectively, from the triennium ending 1993-94 to 1996-97. The production of fruits increased from 32.33 million tonnes to 42.90 million tonnes recording an increase of 32.69 per cent during the same period. The production of vegetables increased by 23 per cent from 60.73 million tonnes to 74.73 million tonnes from the triennium ending 1993-94 to triennium ending 1996.97. Similarly, the flower production has also recorded an increase of 170 per cent from 0.27 million tonnes to 0.73

million tonnes during the same period. The yield levels of fruits, vegetables and flowers recorded an increase of 6.57, 11.93 and 143.33 per cent, respectively, during the study period. However, the productivity levels of horticultural crops continued to be quite low as compared to other horticulturally advanced countries in the world.

The total value of exports of fruits increased from Rs. 1480 millions to Rs. 2186.67 millions recording the growth of 47.75 per cent from the triennium ending 1993-94 to 1996-97. The vegetable and flower exports also recorded an increase of 54.98 per cent and 214.29 per cent during the same period. However, the share of our exports of fruits, vegetables, and flowers in the world trade of these commodities remained around only one per cent.

7.2 Status of PHI for Horticultural Crops in India

Sustained efforts are being put forward by the Central and State governments as well as other organisations to help develop the PHI facilities in the country. With 8 Indian Council of Agricultural Research (ICAR) institutes having 26 regional stations, 10 National Research Centres, one Project Directorate on Vegetable Crops, 14 All India Coordinated Research projects for tropical, sub-tropical and arid fruits, vegetables and flowers, and post-harvest technology research being conducted at 215 centres located at various research institutes and state agricultural universities, India has one of the largest infrastructure for horticultural research in the world.

The data on growth of cold storages indicate that the number of cold storages increased from 600 during 1965 to 4146 by 2001. In terms of storage capacity, it increased from 6.82 lakh tonnes in 1965 to 149.52 lakh tonnes in 2001. However, nearly 85 per cent of the total installed capacity was seen to be utilised for storage of potatoes alone and only about 1.20 per cent of the cold storage capacity was being utilised for storage of fruits and other vegetables. The highest number of cold storages (88.45 per cent) were observed to be established by private sector followed by cooperative (8.22 per cent) and public (3.33) sectors.

Although, the number of fruits and vegetables processing units increased from 3413 in 1988 to 4368 in 1995, less than one per cent of fruits and vegetables production is processed in our country.

The NHB soft loan scheme IPMPHI helped in the establishment of 127 grading / packing sheds, 64 pre-cooling units, 39 cold storages, 129 transport vehicles and 214

retail outlets from 1992-93 to 1996-97. In addition to this, 69 projects were sanctioned under the DMHPSL scheme during the same period.

Several other organisations, such as the National Bank for Agriculture and Rural Development (NABARD), National Cooperative Development Corporation (NCDC), Agricultural and Processed Food Products Export Development Authority (APEDA), Commercial banks, commodity boards, and other associations provide financial, technical and other support not only to grow the horticultural crops but also to establish the PHI for fruits, vegetables and flowers. The study of activities of these organisations indicates that they are trying to do their best efforts to enhance the PHI facilities in the country.

7.3 Evaluation of the Soft Loan Schemes (SLSs)

The two soft loan schemes IPMPHI and DMHPSL were evaluated with respect to financial assistance sanctioned, distribution of projects, infrastructure created, adequacy of funds, shortfall in soft loan, time required for processing and disbursement of loan, repayment performance, capacity utilisation of the PHI created and post-harvest losses. In the process, certain suggestions are also made to improve the performance of the schemes.

It was observed that under the SLSs largest number of PHI projects (66 per cent) were sanctioned for floricultural sub-sector followed by fruits and vegetables marketing (19 per cent) and mushrooms (15 per cent) indicating relatively less emphasis on the traditionally dominant sub-sector of fruits and vegetables. The analysis of the distribution of projects and created infrastructure showed that the development of PHI was concentrated in the states of Andhra Pradesh, Maharashtra, Haryana, Karnataka, Gujarat and Punjab as compared to other states.

The extent of funding from NHB was very inadequate at Rs. 42 lakhs per project which was far below the ceiling amount of Rs. 100 lakhs per project. Soft loan being very inadequate, the PHI units borrowed from other financial institutions at a higher interest. It was reported by the PHI units that the ceiling amount fixed by the NHB itself was inadequate. They suggested that it should be increased from present maximum amount of Rs. 100 lakhs to about Rs. 200 lakhs per unit depending upon the total cost of the project.

Although the contribution of NHB to total cost of the project was very inadequate (about 15 per cent only), it has attracted about 6 times additional private investment for the development of PHI for horticultural crops in India. This shows that NHB soft loan schemes encouraged the private investment in the development of PHI for fruits, vegetables and flowers.

The shortfall in NHB soft loan was about 26 per cent for the study units in Maharashtra and Karnataka. In some cases even the actual releases were found to be less than the amount of soft loan sanctioned by the NHB. The time taken by NHB to process and distribute the soft loan varied between 12 to 24 months which has created hurdles in the effective implementation of the project. Therefore, it is recommended that the NHB take a hard look at the time consuming and cumbersome procedures of processing and disbursement of loans to make it simple for quick and more effective loan processing and disbursement. This may be achieved by NHB with more involvement of and delegating powers to their regional offices in various states.

In spite of the flexibilities in repayment and precautions taken by the NHB for the safety of the loan, the recovery performance under the soft loan schemes seen to be very discouraging. The overdue has been on increase year after year. On an average only 6.89 per cent of the total dues were repaid to NHB by the beneficiaries of the soft loan schemes. The per cent of refund to total dues at the beginning of the year was 13.38 per cent in IPMPHI while it was only 3.81 per cent in DMHPSL. These recovery levels were far below than the all India recovery levels for Regional Rural Banks (61 per cent), District Central Cooperative Banks (70 per cent), Commercial Banks (66 per cent) in 1998. In Karnataka also the per cent refund to total demand was observed to be 22.26 per cent for IPMPHI and 19.44 per cent for DMHPSL reflecting again a very poor repayment performance.

Inadequate loan, shortfall in loan, heavy burden of repayment of bank loan, expecting waiving of loans, hope of getting subsidy and expectation of getting the extension of moratorium period were some of the factors responsible for the poor repayment performance of the soft loan schemes. In addition to this, the poor repayment performance could be also the result of combination of other factors such as lack of experience (of PHI units), lack of improved technology for production, processing and marketing, ineffective supervision and monitoring at the field level (by NHB). It is in these circumstances that the NHB has to evolve suitable institutional policy measures for

combating the overdues of the soft loan schemes. This may include the measures that are aimed at making the establishment of PHI units a commercially viable venture through providing backward and forward linkages and institutional support. It needs to be noted here that the existing arrangements for managing the soft loan schemes were found to be not working satisfactorily. Therefore, it is suggested that the soft loan schemes need to be restructured in such a way that it helps to overcome the shortcoming identified including the thrust on recovery.

The capacity utilisation pattern of PHI units varies from 40 per cent to 100 per cent in study states reflecting the mixed results. The capacity utilisation of PHI units was higher in areas where there was higher horticultural production having higher market surpluses. In such cases it is essential to create higher capacity in the area considering both the current and future horticultural production of the area. In other areas where the capacity utilisation was low, it is essential to educate farmers on the benefits of the use of PHI facilities. Secondly, there is also need to increase the production of horticultural crops by using improved technology. The extension service will have to play a critical role in this matter. Thirdly, the problems encountered by farmers in using these facilities need to be removed to enhance the capacity utilisation of PHI units.

One of the important objectives of implementing the soft loan schemes was to arrest and reduce the heavy post-harvest losses of horticulture produce observed in India. The SLSs seems to be successful in reducing the post-harvest losses to a great extent. In general, loss of fruit (grape) and vegetable (potato) as a per cent of total production ranged between 1.10 per cent to 6.87 per cent which was well below the losses of 20 per cent to 35 per cent reported by earlier studies. Thus, it can be concluded from these results that pre-cooling, cold storage and other facilities created by the NHB through SLSs have certainly helped the farmers to reduce the post-harvest losses of the horticultural produce. An effective Government Policy addressed to remove the above mentioned constraints of the PHI units can certainly go a long way for further development of PHI for horticultural crops in India.

7.4 Impact of SLSs on Cropping Pattern, Employment and Income

The analysis and assessment of changes that have taken place partly due to the development of and improvement in PHI facilities for horticultural crops with the help of SLSs in the study area indicates that the average size of owned land, operational holding,

net cultivated area and land utilisation pattern showed no discernable change during the study period between 1992-93 and 1997-98 for both member and non-member sample farmers. However, the study of seasonal cropping pattern indicated that sample farmers across the states were adjusting their crop area under kharif, rabi and summer seasons to enable them to allocate higher area to horticultural crops. The observance of the cropping pattern have clearly shown that the most spectacular change have occurred in horticultural crops which have substantially enhanced its relative importance in the whole cropping pattern from 1992-93 to 1997-98. The horticultural crops seems to have gained most from the foodgrain crops due to their relative economic advantage and the continuously increasing consumer preferences for horticultural products. Within the horticultural crops the share of fruit crops has increased markedly during the study years. The increase in area under horticultural crops and the development of and improvement in PHI facilities in study area may have played an important role in not only increasing the employment and income but also in strengthening the livestock and machinery asset position of sampled farmers from 1992-93 to 1997-98.

7.5 Problems and Prospects of PHI Development

The performance of the horticultural sector is greatly affected by the inadequate PHI facilities available in the study area. Most of the sampled farmers were not quite satisfied with the kind of PHI facilities available to them in the area. Lack of availability of pre-cooling and cold-storage facilities, bad approach road conditions, shortage of vehicles, high transportation costs, lack of availability of skilled labour and higher wages for various post-harvest operations, dearth of packing material and its higher prices, inadequate or no access to vital market information, delayed payments of the proceeds, absence of transparency in the market transactions, rampant malpractices by the market functionaries, rarely receiving fair prices to the produce of the farmers, need of awareness and training to farmers and shortage of processing facilities were among the major problems faced by the sample farmers. The resentment of the problem was more among the non-member farmers as compared to member farmers.

8. Policy Implications

8.1 The area, production, productivity and exports of horticultural crops have been increasing over the years signaling the tremendous potential and bright future prospects for the development of PHI in India. Therefore, concerted efforts are need to be directed towards improving the PHI facilities to match the production, reduce the post-harvest losses, improve quality and enhance the domestic and international trade. (Attn.: National Horticulture Board (NHB), National Cooperative Development Corporation (NCDC), National Bank for Agriculture and Rural Development (NABARD), Commercial Banks, other financial institutions and Ministry of Agriculture, Central and State Governments).

8.2 India has one of the largest research infrastructure for horticultural crops in the world. However, productivity of these crops is very low as compared to top ten horticulturally advanced countries in the world. Therefore, the country needs to address the productivity enhancing related issues for increasing production by developing high yielding varieties having characteristics that are most suited for high productivity, processing and domestic and international trade. The improvements in productivity and quality of horticulture produce through adoption of improved technology will make it more competitive in world market. (Attn.: Indian Council of Agricultural Research (ICAR), Indian Institute of Horticultural Research (IIHR), Bangalore, State Agricultural Universities and other research organisations).

8.3 For the development of PHI, financial and other assistance is being provided to various organisations and individuals by the different institutions and organisations, such as NHB, NCDC, APEDA, NABARD, Commercial Banks, Cooperative Banks, etc. The activities of these institutions and organizations indicate that they are involved in serious efforts to enhance the PHI for horticultural crops in India. However, their efforts need to be further strengthened through establishment of a proper mechanism for coordination. (Attn.: Respective institutions and organisations).

8.4 The distribution of projects and developments of PHI through SLSs was concentrated in the states of Andhra Pradesh, Maharashtra, Haryana, Karnataka, Gujarat and Punjab. The PHI facilities also need to be developed in other states to achieve proper distribution of PHI facilities throughout the country. (Attn.: NHB, NCDC, NABARD).

8.5 The funding from NHB under the SLSs was very inadequate (About 15 per cent of project cost). Moreover, about 26 per cent shortfall in NHB soft loan was also observed in two study states. Efforts may be made to enhance the funding and reduce the shortfall in loan. (Attn.: NHB, NABARD, and Commercial Banks).

8.6 The time taken by NHB to process and distribute the soft loan varied between 12 to 24 months which has created hurdles in the effective implementation of the projects. It is recommended that NHB take a hard look at their time consuming procedures of processing and disbursement of loans to establish simple, quick and more effective loan processing and disbursement mechanism. In this respect, more involvement of and delegating powers to NHB Regional Offices may prove crucial and effective. (Attn.: NHB, Gurgaon).

8.7 The repayment performance of the SLSs is very poor. It needs to be noted here that the existing arrangements for managing the soft loan schemes were found to be not satisfactory. Therefore, it is suggested that the soft loan schemes need to be restructured to overcome the shortcomings including the thrust on recovery. (Attn.: NHB, Gurgaon)

8.8 The NHB soft loan schemes seems to be successful in helping the farmers to reduce the post-harvest losses of horticulture produce at least by 50 per cent. This means the PHI helps in making available more fruits and vegetables for domestic consumption and international trade even at the existing level of production. It is very encouraging and implies the need of further PHI development in the country to save the loss of crores of rupees to national economy. (Attn.: NHB, NCDC, NABARD, and Ministry of Agriculture, Government of India).

8.9 The soft loan schemes seem to have triggered the change in cropping pattern in favour of horticultural crops. This may have played an important role in not only increasing the employment and income but also in strengthening farm asset position of sampled farmers. (Attn.: NHB, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India, New Delhi).

8.10 The lack of approach roads to fields, uninterrupted power supply, lack of adequate communication facilities, inadequate transport infrastructure, etc. are found to be the major impediments for the development of PHI for horticultural crops in India. Therefore, efforts are need to be focussed on development of this basic infrastructure for rapid development of PHI facilities in the country. (Attn.: Ministry of Rural Development, Central and State Governments).

8.11 In view of the problems faced by the farmers in use of PHI facilities in their area, it is essential to remove these problems to enhance the development of PHI facilities and its use to the maximum extent possible by the farmers. At the same time it is crucial to plan a detailed strategy in such a way that each problem encountered by the farmers gets its due priority in its solution. (Attn.: PHI Units and NHB).

8.12 The post-harvest activities are performed by many persons, such as farmers, labours, transporters, wholesalers, retailers, etc. in India. However, the post-harvest related scientific training to them is far from satisfactory. By developing this human resource through scientific training will help perform their respective post-harvest activities very efficiently giving them the competitiveness in the face of continually increasing global competition in trade of horticultural commodities. (Attn.: NHB, Gurgaon; Ministry of Agriculture, Central and State Governments).

8.13 The development of adequate post-harvest infrastructure for horticultural crops needs huge investments. Therefore, all the stakeholders including the farmers should come forward, join hands with the Governments and collectively share the responsibility. In this context, the Government's endeavor should be to develop the basic infrastructure and create congenial policy environment for attracting higher private investment. In

addition to this, in the light of the changing economic environment of the country and world, the Government of India should encourage the foreign investments in projects for the development of PHI for horticultural crops in the country. (Attn.: All the stakeholders, Central and State Governments).

8.14 Accurate and timely market information will assist farmers in enhancing their market efficiency and earning price worth of their produce. However, it has been observed that farmers are facing difficulties in obtaining adequate market information when it is required most. Due to this they are often prone to exploitation by the traders. Therefore, concerted efforts need to be made to remove these difficulties by disseminating the market information on a regular basis. In view of the recent progress in telecommunications, dissemination of accurate, timely, and adequate market information to farmers and other stakeholders should not be of a great deal to Government and other organisations. (Attn.: NHB, Marketing Boards / Committees, Association of Growers, NGO's, State Depts. of Horticulture / Agriculture, Ministry of Agriculture, Government of India).

8.15 In view of the urgent need of the PHI facilities in the country, it is suggested that the concerned public organisations may establish PHI Service Centres in the major horticulture production zones of the country. These PHI Service Centres should provide facilities for pre-cooling, cooling, grading, packaging, cold storage, refrigerated container and transport facilities and appropriate market information not only to farmers but also to other stake holders with reasonable charges for the same. The location of these PHI Service Centres in the heart of the horticulture producing areas will help to cut down the transport costs and reduce transit losses consequently making the horticulture produce relatively cheaper to domestic consumers and more competitive in the international markets. (Attn.: NHB, APEDA, States Marketing Boards / Committees, Ministry of Agriculture, Central and State Governments).