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GOVERNMENT ROLE IN APPLE PRODUCTION: A STUDY OF HIMACHAL PRADESH

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ABSTRACT

Apple is the major fruit of the state of Himachal Pradesh which accounts for about 48 per cent of total area under fruits and 87 per cent of total fruit production. There has been a phenomenal increase in the area and production of fruits, particularly apple. But the productivity of apple has been low compared to advanced countries of the world. Many interrelated factors like socio-economic, agro-climatic, infrastructure, market, policy issues etc. are responsible for the low productivity of apple. Net return from apple cultivation can further be enhanced with the efficient marketing/investment support from the state and central governments.

KEYWORDS: *Apple Production, Agriculture, Policy, Himachal Pradesh, India*

1. INTRODUCTION

Apple is one of the important perennial commercial fruit crops. It is one of the most widely cultivated tree fruits in India where its suitable agro-climatic conditions are available. There are many varieties of apples with different characteristics with respect to tastes, uses, fresh eating, size, colour etc. Apple fruits are generally eaten raw, but can also be found in many prepared food products, drinks and medicines. Some important producers of apples in the world are China, USA, Turkey, Italy, India, Poland, France, Iran, Brazil and Chile.

As per the available information, apple was introduced in India by the British in the Kullu Valley of the Himalayan State of Himachal Pradesh as far back as in the middle of nineteenth century. It was only in the beginning of twentieth century that delicious cultivators of apples from United States of America were introduced by

Samuel Evans Stokes in Kotgarh (Shimla) hill area of the same state in 1917 (cited in Bhardwaj et. al., 2012).

2. MOTIVATION

Apple is one of the most widely grown temperate fruit crop in Himalayas of Northern India. Almost all the apples grown in India come from its three mountainous states, namely, Jammu and Kashmir, Himachal Pradesh and Uttarakhand. The total production and area under apple cultivation in India was 2498 thousand million tonnes and 313 thousand hectares respectively in year 2013-14 (National Horticulture Board, India). According to Food and Agricultural Organisation, India was the third largest country in apple production in year 2011.

In Himachal Pradesh, horticulture sector is important for a sizable number of farmers for whom it serves as the main source of income. As per the data from Himachal Pradesh 'Horticultural

Produce Marketing and Processing Corporation (HPMC) Ltd, apple is so far the most important fruit crop of the state which constitutes about 48 per cent of the total area under fruit crops and about 87 per cent of the total fruit production. In 2013-14 the production was 738.72 thousand tonnes under 10769 thousand hectare area. The production of apple depends upon many factors such as the age of tree, variety, climate condition, cultural practise etc. Apple growers of Himachal Pradesh suffer from many problems at various stages – during production, storage, transportation and marketing. State policies have important roles in removing several obstacles in apple production and producers. Hence, it is necessary to carry out a study on the present topic.

3. OBJECTIVES

The main objective of the study is to examine various economic problems faced by the apple growers in Himachal Pradesh. The specific objectives of the present study are:

- (a) to examine the economic problems faced by the apple growers with special reference to marketing problems, and
- (b) to examine the roles and schemes of the government to increase the production of apple.

4. EXISTING GOVERNMENT SUPPORT SCHEMES

The state government of Himachal Pradesh has been supporting apple production in various ways. During the post-independence period, especially after the statehood in 1971, there has been a strong backing from the state for apple production. Consequently, the area under apple cultivation increased from 500 hectares in 1950s to 81630 hectares in 2001-2002 and further 10769 hectares in 2013-2014 (State Department of Horticulture, Himachal Pradesh). The pre-liberalization period growth in apple production was the result of the massive peasant movement that demanded support system from the state government.

Some of the measures taken by the state which contributed to an increase in apple production are listed below (also cited in Panwar, 2011):

- Setting up a separate horticulture department,
- Establishing a separate University of Horticulture for resource and extension services (University of Horticulture and Forestry) in Nauni in Solan district,
- Opening a large number of regional extension centres,
- Forming a society called 'Horticultural Produce Marketing and Processing Corporation (HPMC) Ltd' with the objective of marketing and processing of all types of fruits,

- Installing a packing carton factory with the world class quality material at subsidised rate. To reduce losses during transportation caused due to overfilling of apple fruit in prevalent telescopic cartons, the use of Standard Universal Carton is being emphasized so that apple growers are also protected from financial loss at the hands of middlemen in the market.
- Opening cold storage, packaging and grading stores. Controlled Atmospheric storages and CA storage capacity to the tune of 20000 MT have been created in major apple producing areas of the State,
- Setting up nurseries and giving plants to farmers in large scale. In order to improve the production, productivity and quality, production of quality plant material is being encouraged through promoting hi-tech nurseries and tissue culture units. Besides this, improved varieties and root stock of apple is being imported from advanced countries which are being multiplied at the departmental orchards for further distribution to orchardists of the State. During year 2012, 10300 plants of apple have been imported from France,
- Offering heavy concession on tools like cutters, spray pumps etc,
- Offering special mandatory help for the poor and dalits to plant apple orchards. In order to bring the horticultural production at par with global standards, the State Government is providing technical know-how and inputs to the orchardists on subsidy through training, extension and advisory service. Every year around 55,000 farmers are being trained through camps and exposure visits. 350 to 400 MT pesticides are also being supplied on subsidy to control pests and diseases,
- Intervening in market by opening subzi mundi,
- Two massive agitations across the political spectrum during years 1987 and 1991 demanding increase in the support price of apple crop, resulted an increase in support price to Rs. 3.25 from Rs. 1.20 per kg. Determined to give the drive to boost fruit production added thrust, the state government has enhanced the procurement price of apple under the Market Intervention Scheme (MIS). The State Government enhanced the support price of apple to Rs. 6.50 per kg for the year 2013,
- 'Rashtriya Krishi Bima Yojana' was introduced in the State in the year 1999-2000 to give a sense of security to the farmers. Crops covered are wheat, paddy, maize, barley and potato. Insurance is mandatory for all loanee farmers and optional for non-loanee farmers. The scheme provides comprehensive risk cover against drought, hailstorm, floods and pest diseases etc,

- Project on 'Sustainable Development of Apple' in Shimla, Kullu and Kinnaur districts of Himachal Pradesh would undertake strategies for improving the productivity and quality of apple orchards by water harvesting, mechanization and agriculture education, with major emphasis on training and capacity building of farmers. The project being implemented under corporate social responsibility work of Container Corporation of India Ltd (CONCOR) through The Energy and Resources Institute (TERI) and will benefit about 1500 apple growing households directly while around 1000 households will be benefited indirectly¹,
- To enhance productivity and improve quality, 'Apple Rejuvenation Project' worth Rs.85 crore is being implemented that envisages replacement of old and uneconomic apple plantations with improved, high yielding, regular bearing and globally popular apple varieties in 5000 hectare area. So far, for covering 1700 ha area under this project funds amounting to Rs.1190.90 lakh have been received out of which Rs.24.36 lakh have been spent on rejuvenation of apple orchards in 170 hectare area of 349 orchardists. To make this project more feasible and farmer acceptable, the operational guidelines of this project are being modified and simplified,
- The Government is giving financial assistance in the form of subsidy to the apple growers under "Horticulture Technology Mission" on different components i.e. Area Expansion, Creation of Water Sources, One farm water management, Production of planting material, Organic farming, Farmer training & exposure visits, Promotion and popularization of agriculture equipment etc. State Government is providing assistance to the apple growers by procuring their processable grade fruits under MIS (Market Intervention Scheme). Tree leaf analysis service is provided to the fruit growers of the State for identifying manurial needs of their orchards
- State plan Schemes like Horticulture Development Scheme, Plant Protection Services, Horticulture Training & Extension Service Services, Fruit Processing Programme Services, Marketing & Quality Programme Services etc.

In general, above mentioned government schemes helped in the promotion of public investment in the horticulture sector, particularly apple growers. Opening up the institutions or centres for horticulture study helped in the

introduction of new crops, promotion of technology and for capacity building among growers/farmers. The support by the government has been expanding but there seems to be no significant improvement in the productivity. Apple growers are still facing the problems like unorganised marketing system, lack of real time information regarding government scheme in rural areas of the states etc.

5. PROBLEMS IN MARKETING CHANNELS

One of the important problems which apple growers are facing is the marketing of their products. Without proper marketing facilities and channels, just increasing production and productivity may have to face several problems. Recently, apple growers in Himachal Pradesh faced such a situation. In this connection, Sharma (2013, August 18) pointed that "a combination of factors - bumper crop, increasing labour wages, poor marketing, dilapidated roads, unavailability of cold storage and undersized fruit" are making the apple growers in Himachal Pradesh to suffer multiple problems. Arrival of thousands of tonnes of apple from the hill state to the fruit markets led the apple prices to nosedive suddenly.

In India, almost all produced apples are used for fresh consumption with small quantities used for processing into products such as apple juice, jam etc. Although in Himachal Pradesh, the Horticulture Produce Marketing and Processing Corporation is involved in apple marketing, most apples are sold through private marketing channels.

In India, about 70% of the apple fruits is transported to and sold in the India's largest wholesale fruit and vegetable market at Azadpur in Delhi. There are a number of market channels in fruit marketing, of which the pre-dominant are:

- (a) Farmer → pre-harvest contractor → commission agent → wholesaler → retailer → consumer.
- (b) Farmer → forwarding agent → commission agent → wholesaler → retailer → consumer.
- (c) Farmer → commission agent → wholesaler → retailer → consumer.

The sale of apples through the pre-harvest contractors is the most important system of marketing. Normally, the small orchardists sell their crops at the flowering stage to contractors who organize plant protection practices, plucking and packaging of fruits. The medium and large orchardists prefer to market their produce through other two channels (b) and (c) mentioned above. In H.P., about 65 per cent of total apple produced is marketed through these two channels. Some grower marketing cooperatives and government-controlled marketing corporations, primarily the HPMC in Himachal Pradesh, are also involved in apple marketing. However, only about 3.5 per cent of production is handled by grower cooperatives, and

¹ Chief Minister of H.P. launched the Concor's CSR and Sustainability Project, 19th August, 2013, press note.

the HPMC handles only about 2.5 per cent of the Himachal Pradesh apple crop.

In the primary market from commission agents, apples typically move through several owners, including wholesaler, sub-wholesaler, and retailer, before reaching the consumer. At each step in the marketing chain, the primary role of the intermediary is to arrange transport and handling, bring together sellers and buyers, and facilitate the financial transaction. Value addition in the supply chain is negligible and consists primarily of breaking shipments into smaller and smaller lots for onward sale.

The apple value chain in Himachal Pradesh consists of a plethora of intermediaries who not only jack up the final costs without significant value addition but also exert a negative pressure on the farmer's margin. Also, the quality of apples deteriorates due to multiple handling. The share of apple growers in consumer rupee is a mere 35 per cent and the major share goes in the hands of market intermediaries. This price realization by apple growers of the state is very low when compared to the farm realizations of 60- 65 per cent of the apple retail price in countries like the USA (Pandey et. al., 2009). Moreover, domestic apple growers also face the competition from imported apples of various qualities. In many cities, consumers sometimes buy more of imported apples thinking that imported apples are of better quality even if their prices are higher than those of domestic prices. Such phenomenon adds to woes of domestic apple growers.

India eliminated quantities import restrictions on apple in April 1999, when import of apple and other fruit were opened to private trading under Open General License (OLG). This removal has raised the imports of apples rapidly. On an average the United States has been largest supplier of apples. Australia, China and New Zealand have been the other major suppliers. During the peak domestic harvest and market arrival month of August-November imports are less and during domestic lean season of December-July imports are very high.

6. PROBLEMS OF APPLE ORCHARDISTS

With the growing number of apple growers or orchardists engaged in cultivation in Himachal Pradesh, the area under cultivation has also been increasing. There are now more than 20000 apple growers/farmers among which 86 per cent are marginal farmers (cultivating less than 1 hectare), 10 per cent are small farmers (1-2 hectares), 3 per cent of semi-medium farmers (2-4 hectares), 0.5 per cent are medium farmers (4-10 hectare) and 0.5 per cent of large farmers (more than 10 hectares). No doubt, the agro-climatic conditions in Himachal Pradesh are suitable for apple crop cultivation; growers face several problems at various stages.

We mention some major problems of apple growers below (Pandey et. al. 2009):

- Inadequate facility of cold storage is the common problem with majority of farmers. Lack of cold storage forced growers to sell their produce immediately after harvest, in which they may get low price for their produce.
- Transportation is the most important factor in marketing of apples. But apple grower faces the problem like lack of vehicles at peak time, high transportation charges, villages are not linked with metalled road etc. Growers generally face shortages of trucks during the peak harvest period, leading to periods of unrefrigerated storage in producing areas. Trucks are often loaded beyond the stipulated legal and safe norms. In combination with poor quality packing materials, overloading leads to heavy pressure on the fruit and damage during transport. Lack of refrigeration, long journey times, and poor packaging reduce the quality of domestic apples available in more distant markets, including Mumbai, Chennai, and Bangalore.
- Shortage of quality root stocks. There is a need of improved variety of root stocks so as to achieve higher output. Majority of plantation are beyond their fruit bearing stages and would need to be replanted in a phased manner and on a continuous basis.
- The rise in price of packaging materials and lack of availability of good quality cartons was found to be a major problem. Many different packing materials are used, including thin wooden crates with straw packing, corrugated cardboard boxes, and trays of various qualities. Use of high-quality boxes and trays with sufficient rigidity to protect the fruit is limited. Overstuffed boxes containing significant amounts of bruised fruit are common.
- High price and spuriousness of plant protection chemicals is also the major bottleneck in increasing the productivity of apple orchards.
- Lack of adequate financial resources to farmers at various stages.
- Largely disorganised harvesting, packing and marketing system. The handling of apples in state is done manually which spoils its quality.
- Problem of availability of accurate information regarding the demand in the market and prevailing prices.
- Higher wage rate and shortage of skilled labour in harvesting and grading process.
- Apple grower gets very little out of their sale and this may be because of low prices in the market, high marketing cost malpractices by commission agents and other market functionaries.

Above mentioned problems are interrelated and interdependent. Most of the problems occur due to the fact that majority of farmers are poor and do not have storage facilities just after harvesting. Like many raw fruits, apple is also perishable in nature in the sense that apple can not be kept in the natural stock without affecting its quality. So, to increase in apple production and productivity adequate marketing facilities along with transport and storage facilities must be provided to growers. Since majority of farmers are poor, government supports are must for remunerative and sustainable apple production in the state. There should not be unrestricted import of apples from abroad which affects domestic producers badly.

7. NEEDS OF THE GOVERNMENT SUPPORTS

As mentioned in the above section, apple growers in Himachal Pradesh have been facing several problems. Area under cultivation has been increasing but productivity has been low. Low productivity of apple cultivation in the state is a result of both internal and external factors. Solutions of those problems are beyond the decisions of individual growers and thus they require government supports in terms of infrastructure facilities, marketing and price supports, transportation and storage etc. Some of such issues have also been pointed out in studies like Panwar (2001), Sardana (2010) and Bhardwaj et.al. (2012). We describe below some issues and problems where government supports to apple growers are needed.

- (i) *Adoption of HYV*: There has been a change in the nature of the landholding pattern (i.e., more number of marginal and small farmers) in the state in addition to the deteriorating quality of land due to repeated cultivations. To solve this problem to some extent, some farmers are shifting to scientifically advanced methods by adopting high-yielding varieties (HYV) of the root stocks. But, it is a relatively high capital investment technology which cannot be afforded by poor and marginal farmers/growers without government intervention. While adoption of new technologies is necessary, arbitrary applications without government intervention may lead to a wider gap between poor and rich growers.
- (ii) *Effects of FTAs*: Signing various kinds of free trade agreements (FTAs) by the central government with the other foreign countries have been affecting domestic apple crop growers the worst. The lowering the import duty from 45 per cent to 35 per cent motivated imports of apples of various qualities, which led to a bad competition with domestic growers.
- (iii) *Costly Carton*: Himachal state government recently closed down the Gumma carton factory under the pressure of private carton cartels. A carton box is now costing Rs.60 which was available earlier for Rs.30 to 35. Thus, now farmers need to spend more for packing apples.
- (iv) *Crop insurance policy*: Changes in the climate have severely affecting the apple production and quality. The government provides insurance cover for any deficit in the chilling hours, but ignores the loss due to hail that has become a regular and predominant feature of weather incursions over the years. Instead of focusing on subsidising anti-hail nets, the government is stressing on anti-hail guns which were installed in recent years but failed miserably owing to weak scientific support system like the GPS and radars. The estimated loss due to rampant hail in the apple growing region in 2011 was estimated at Rs.500 crore.
- (v) *Protection from wild animals*: The menace of wild animals especially monkeys continues to be a major threat to the apple crop growers. In this regard, the state government had allowed selective culling of certain animals and monkeys. But the interference of animal's rights groups got the order stayed from the state high court. The annual loss attributed to wild animals and monkeys has been estimated Rs.2000 crores. While culling of wild animals is not an appropriate method, other safe alternative options should be adopted to protect crops from wild animals.
- (vi) *Dominant private market players*: Private market players in the absence of government intervention arbitrarily decide the price and apple growers are forced to sell because of (a) non availability of compressed atmosphere stores and (b) absence of remunerative price mechanism.
- (vii) *Need of good transport facilities*: In the absence of railways, the only mode of transport for the produce is the road network. Over the years, the carriage freight has been unilaterally determined by the transport operators. The freight fixed from Kotkahi to Delhi was Rs.45 per carton, but the farmers were forced Rs.250. The other major pre-requisite for fetching a good price is that the apple must reach the market in a healthy and good condition, which in turn demands the smooth transport of the crop. But due to poor infrastructure and neglect by the government, which has handed over the task of repairing the roads to private players, there was large-scale bruising of the apple crop in the preceding year. Almost 90 per cent of the roads are kuccha, i.e, unmetalled, which become potted during the rainy season, in turn affecting the smooth transport of the crop.
- (viii) *Need of cold storage facilities*: Most of cold storages in Himachal Pradesh are single chambered and for single product facilities.

These cold storage facilities are mainly utilized for stocking potatoes and potatoes seeds (80 per cent of total capacity) for about six months a year and for storage of multi commodities (17 per cent of the capacity). Apple growers hardly utilize these cold storage facilities. The HPMC has estimated a capacity utilization of only 25 per cent (Government of India, 2008).

It is true that the government of Himachal Pradesh has been implementing various schemes for the development of horticulture sector in the State by providing various facilities and incentives. But facilities and incentives have not been adequate. Moreover, apple growers also need to be alert and united. In a big move to bringing apple growers under one banner in Himachal Pradesh, a 'Himachal Apple Growers Association' (HAGA) was constituted on May 14, 2011, by bringing together all apple growers from various parts of the state. The association aimed to unite apple growers of the state so that they could fight for pro-farmer policies at state and central governments level. Some of the demands of the association included clearing payments from previous years to growers, compensation to the farmers due to hail, 90 per cent subsidy on hail nets, ending the 9 per cent commission in Delhi subzi mandi, proper infrastructure and repair of roads, remunerative price for the apple crop, CA stores and processing units in block headquarters, subsidies for fertilisers, insecticides and fungicides, crop insurance cover in all blocks, proper maintenance of roads, and intervention in the transport of apples.

8. CONCLUSION

The cultivation of apple in Himachal is more remunerative than the other field crops. Apple determines the income and purchasing power of the farmers and has a positive impact in term of people's living standard in the state. Excluding apple growers who are depending directly, the processes of grading, picking, packing and transportation provides employment to a large number of persons. Many of the problems of apple growers are beyond the control of apple growers themselves. Hence the state and central governments must come forward to help apple cultivation in many ways. Among many measures, marketing facilities and proper marketing channels have to be developed to help farmers get a fair price for their produce. Local markets should be developed which would provide somewhat better bargaining position and may also reduce transport costs. Hence, if attention is given upon the problems of apple growers by the government specially the state government, there will definitely be a positive change in the situation which will not only improve the standard of living of the dependent population but also of the state as a whole.

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