EVALUATION OF PRICE SUPPORT AND MARKET INTERVENTION SCHEME

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Executive Summary

Abstract: *The importance of agriculture in the Indian economy continues to be very critical as it not only provides food and raw material for the industries, but most importantly, it is a source of livelihood for almost 80 percent of the population, directly or indirectly. Despite its importance, in hill state like Himachal Pradesh, agriculture has to face constraints like uneven topography, lack of irrigation facilities, and poor quality of soil and fragmented tiny holdings. Hardly 10 percent of the geographical area is under cultivation of which only 16 percent is irrigated. Even then agriculture in Himachal Pradesh is the mainstay of people because the scope for industrialization is very limited in the difficult terrain and weather conditions. Whatever little industrialization has taken place is concentrated in the border areas of the state. Hence, the onus of development to provide income and employment opportunities to the growing population heavily falls on the agricultural sector. The transition from subsistence to surplus commercial farming is inevitably linked with the development of infrastructural facilities and efficient marketing. In order to facilitate the marketing of perishable fruits produced in the state, state government has introduced the Market Intervention scheme for some important fruits. This has proved to be important step in efficient utilization of culled fruits, specially apple, and also to augment the income of orchardists. But there are many bottlenecks in smooth and efficient implementation of the scheme. The study indicates that all the stakeholders face some problems during the operation. Experience in implementing the MIS, over the years has shown that it has not proved beneficial to the farmers to the desired extent. Two agencies viz. HIMFED and HPMC have been entrusted the job of MIS implementation in the state.*

Objectives

The present study has been carried out with following specific objectives.

- To understand coverage of MIS across crops and regions of India.
- To ascertain factors that influence coverage of crops across regions.
- To understand levels and basis of participation of farmers in MIS.
- To understand problems of different stakeholders in operation of MIS.
- To study the effect of MIS on the market price of commodity in the targeted region.
- To assess efficiency of Central Agencies in operation of MIS.
- To suggest policy measures to improve operations of MIS.

Methodology

Under the constraints faced by hill agriculture, the best use of the land can only be made through cultivation of perennial fruit crops. Consequently, horticulture in the State has now become a business proposition not only for orchardists but also for many others involved with the production and marketing of fruits and vegetables and various other ancillary occupations like transportation, carriage, input supply etc. Apple production has the pride of place in Himachal horticulture sector due to the fact that among all fruits, apple is most important due to highest per hectare returns.

Districts Shimla and Kullu account for more than 90 percent in total production of apple in the state which formed the basis for their selection for the study. This was further validated by the fact that these two districts accounted for highest amount of procurement under MIS during the years 2003 to 2011. In Shimla district, Dhalli and Narkanda markets, the largest markets, were selected for the study. Similarly, in district Kullu, Bhuntar and Bandrol were selected. This selection was out of 10 markets in Shimla and seven markets in Kullu. In the next stage of sampling, two blocks viz Theog and Narkanda in Shimla and Kullu and Nagar in Kullu district, which feed above markets, were selected. Further, in selected blocks, three villages under each block were chosen for forming a cluster of villages in district Shimla. Whereas, in district Kullu, two villages in each block were selected for forming cluster of villages. Following the guidelines, two village clusters comprising of villages Bago-Sandhu, Bishari, and Guai in Theog block and Kandyali, Firnu, and Konthlu in Narkanda block of district Shimla were formed. In case of district Kullu, the villages were Katrain and Dobhi in Nagar block and Jarri and Bradha in Kullu block. In each clusters of villages 15 respondents belonging to different category of farms were randomly chosen for data collection. In all a sample of 30 apple orchardist households in each district were selected for the study.

Main Findings:

The following main findings emerge from the study.

Demographic profile of districts: The analysis indicates that the male and female literacy in district Shimla was marginally higher than the state average whereas in case of district Kullu it was slightly lower. It was found that the land put to non-agricultural uses was increasing in

both the districts whereas the net area sown, area sown more than once and gross cropped area declined in district Shimla. But net area sown and area sown more than once registered increase in district Kullu. Overwhelming percentage of farms belonged to marginal and small categories whose number was increasing over the time. The situation of irrigation in both the districts was not satisfactory by any standards, though the situation in district Kullu was better in this respect. Rice, maize and wheat were the important crops grown in both the districts and there was tendency to grow vegetables in larger and larger areas due to its higher profitability.

Demographic profile of blocks: Overall literacy in the selected blocks of Narkanda and Theog in district Shimla was almost identical with the state average and this was true for male and female literacy percentages as well. Almost same pattern was observed in district Kullu also. The geographical area of Theog block was about double that of Narkanda and same was the case with net area sown. Same pattern was observed in Kullu block of district Kullu having about double area under net area sown and total geographical area. But land under non-agricultural uses was about seven times in Kullu block. There was no data available in both the districts, at block level, regarding the distribution of households according to amount of land with them. All the villages in selected blocks of both the districts were electrified but none had electrically operated tube wells. About 75 per cent of the villages were connected with motor-able roads. The available data indicated that there was no area irrigated in both the blocks of district Shimla but 794 Ha area in Nagar and 1186 ha area in Kullu block was irrigated but no information was available about the source of irrigation. In addition to apple and other fruit crops, a variety of cereals, pulses and vegetable crops were grown in all the blocks of both the districts. In order to implement the MIS there were 10 procurement centers established in Theog and 21 centers in Narkanda block of district Shimla. In district Kullu, five centers each were established in Nagar and Kullu blocks.

Profile of selected villages: The geographical area of villages in Theog block indicated that Sandhu was the largest and had 173 hectares of land followed by Guwai (139 ha.) and Vishri (80 ha.). On the other hand, in Narkanda block, village Kandyali has largest area of 270 hectare followed by Kunthru (205 ha.) and Phirnu (121 ha.). The geographical area of the villages under Kullu cluster was 213 Ha in village Katri almost same to the village Dobhi having 222 hectare whereas, it varied from 356 Ha in case of Jarri to 651 Ha under Bradha. The literacy level of all the villages was quite satisfactory but higher in villages of district Shimla.

The largest percentage of households belonged to marginal category followed by small in all the villages of both the districts. The study of land use indicated that in villages of Shimla more than half of the geographical area was used for non-agricultural purposes whereas this percentage was comparatively quite small in villages of district Kullu. There was negligible area sown more than once in all the villages, this was completely absent in district Kullu villages. All the irrigation in all the villages was through tanks except for village Katrain in Kullu where canal was the source of irrigation. Primary and private schools, post offices along with primary health centers were available in all the selected villages. Private medical practitioners and veterinary dispensaries were not available in village cluster 2 of district Shimla. The institutions like it is, polytechnic, KVIC office, NGOs etc were not available in majority of villages. Commercial banks and cooperative societies were available in three out of four village clusters. Factories and farm produce storage facilities were not available in any of the village clusters but fair price shops were present in all the clusters. There was complete absence of agriculture produce markets but MIS procurement centers and village markets were present in village clusters of Kullu only. The importance of apple as a commercial crop has been increasing in both the districts but no data in this regard was available at block level.

Performance of MIS: Generally procurement of apples begins during the month of June but process begins during the period of April-May with joint efforts of Directorate of Horticulture and federations (HPMC & HIMFED). The highest quantity of apple procured under MIS in district Shimla was during 2010-11. During the peak marketing period of August, the arrival of apples in local markets accounts for about 25 percent whereas the major chunk of about 75 percent is sold in markets situated out of Himachal Pradesh. During the year 2010-11, 10.74 and 20.29 per cent of the culled apple were procured in district Shimla and Kullu respectively. Due to unfavourable climate the proportion of culled remained higher in Kullu district as compared to that of Shimla. In Himachal Pradesh only two agencies viz HPMC and HIMFED are responsible for procurement and disposal of MIS produce. The marketing system of MIS apple varied between the study districts. In district Shimla, the whole collection of culled apple is sold to APMC. The traders of adjoining states frequent this market for purchase of culled apple, sold through auction system. In district Kullu, the Federations feed the local markets, where such traders had already arrived. The area under apple has increased from 31329 hectare to 33579 hectare between 2007-08 and 2009-10. The rate of increase in area under

apple was quite low in district Kullu as compared to district Shimla. In Kullu district the area has increased from 23179 hectare to 23870 hectare during this period. The apple production is continuously declining during the period 2007-08 to 2009-10 in both the districts. The productivity of the crop has decreased from 11.15 MT. to 5.12 MT/Ha during 2007-08 to 2009-10 in district Shimla. In case of district Kullu, the productivity has decreased from 6.91 to 2.28 MT/Ha during the same period.

The area under target crop in Shimla district indicates that Theog cluster has 400 ha area which is just double as compared to Narkanda. However, this gap is comparatively narrow in Nagar and Kullu clusters having 377 and 306 hectares respectively. The extent of loss through pest and disease was only 5 percent among all the clusters. The other type of loss occurred during the time of transportation of fruit from fields to markets and such loss has been estimated only one percent. During 2011-12, apple under MIS were sold only in low quantity in Theog and Narkanda clusters. But in the clusters of Kullu no sale was recorded. Though the government had announced prices at the rate of Rs. 5.25 per quintal for apples procured under MIS, farmers still preferred to sell even at lower prices in local markets as they could get spot payments for the produce. The percentage of MIS produce recorded 3.29 and 2.60 percent of total production in Theog and Narkanda clusters of district Shimla. There is no marketing cost incurred by producers because the State Government provides an assistance of Rs. 130/Qtl as handling charges for one quintal of apple along with Rs. 525/Qtl as purchase price to the federations. The producer is not obliged to pay any charges to the federations. Generally, the average cost was Rs. 25 for labour charges, Rs. 80 for transportation cost and Rs. 25 for loading & unloading in the field and market points. The cost of cultivation reveals that land preparation cost for digging and filling of pits was Rs. 19477/ hectare. The cost of apple plants was about Rs. 10000 per hectare and the quantity of FYM required is about 1.1 metric tons per hectare. About 25 kg of fertilizer and nutrients are required for one hectare orchard. There is a need of irrigation from Jan. to March which requires about 22000 liters of water during this period. As per revenue records, about Rs. 23750 is the land rent for one hectare of land. The expected quantity of apple varies between 100-150 quintals of apple/hectare. All the targeted apple growers have been benefited from the scheme in both the districts. In district Shimla, there were 332 targeted apple growers located in six village clusters whereas the number of targeted apple growers in district Kullu was 1815 located in four village clusters. It was found

that MIS has proved to be a successful scheme in Himachal Pradesh. It was found that each category had outstanding loans drawn from commercial banks. At overall level per farm average loan borrowed has been Rs. 4.4 and 3.2 lacks per farm in Theog and Narkanda blocks of district Shimla respectively and in Nagar and Kullu block of district Kullu the figures were Rs. 1.62 and 2.51 lacks at per farm.

There is a system of intercropping the apple orchards with field crops in Theog and Narkanda block of district Shimla. In case of district Kullu orchardists are solely dependent on apple crop in both the blocks. The analysis of production cost reveals that per hectare land preparation cost in apple orchards was less in Kullu block as compared to Shimla which varied between Rs. 15 to 17 thousand per hectare in district Kullu and Rs. 17 to 18 thousand in district Shimla. The cost of material was higher in district Kullu when compared to district Shimla. Regarding cost of irrigation the farmers of district Shimla were spending Rs. 27178 and Rs. 26593 per hectare in Theog and Narkanda blocks of district Shimla respectively whereas, this cost was absent in district Kullu. The hired labour cost was almost equal in both the study districts varying between Rs. 15 to 17 thousands in study blocks. Out of total production about 5 to 6 percent was retained at home for consumption and remaining part disposed of in markets. The price received by the growers varied between Rs. 3833 and Rs. 3395 per quintal in Theog and Narkanda block respectively. Total apple production in the orchards of selected farmers of district Kullu was 4853 and 5814 qtls at Nagar and Kullu blocks respectively. In district Kullu overall level the per farm production of apple was 711 qtls.

In both the study districts only two marketing channels are adopted by orchardists i.e. producer-wholesaler-traders and producer to MIS. In district Shimla about 97 per cent of the marketed surplus was sold to wholesaler/traders and remaining three per cent to HPMC under MIS scheme. The prices of apple have been recorded to be Rs. 3833 and 3395 per qtl in Theog and Narkanda block respectively. In district Kullu, all the producers sold their produce to wholesaler-traders.

The analysis of marketing costs of apple at farmers' level indicated cost of picking, filling in boxes/bags/container was Rs. 225 per qtls under Channel-1 and channel-2. In case of district Kullu, generally, the apples are packed in crates and the costs of picking/filling are lower. The depreciation of container was Rs 25 under channel-2 which is about half as

compared to channel-1. The transport cost was Rs.150 per qtl in Theog block. In other cases, it varied between Rs. 60 to 70. In case of channel-2 the costs were Rs 30 and 25 for orchard to road and road head to market, respectively. The cost of loading and unloading was constant at Rs.25 for channel-1. The net prices received by the growers under channel-1 were Rs 3293 and 2945 in Theog and Narkanda block of district Shimla, respectively. Whereas these prices were Rs 2760 and 3095 in Nagar and Kullu blocks of district Kullu. In case of channel-2, all the costs were incurred by the concerned agencies and therefore, growers do not have to pay any expenses on this account.

It was found that the apple offered by the growers under MIS was never rejected, by any agency. Every farmer is eligible to sell produce under MIS but 50 per cent farmers of district Shimla and 80 per cent of district Kullu have not shown any interest in MIS because of late payments. But all the farmers understand that this scheme had helped in increasing area under target crop and felt that this scheme is very helpful in increasing in farm income.

There are various stakeholders involved in the scheme extending right from the designated agencies, their employees, traders and farmers etc. Procurement agencies, HPMC and HIMFED, faced problems like, financial problems, problems due to inter-agency competition, competition with traders, road connectivity and unavailability of transportation etc. The employees of designated agencies faced problems due to transfer policy, boarding and lodging, lack of cooperation from farmers etc. The problems faced by traders related to auction schedule, quality of apple and due to personal relations etc. The problems listed by farmers related to price of apple, price offered under MIS, price volatility and malpractices etc. However, no farmer complained on account of the fact that the gunny bags are not returned to farmers. Weighing and other problems in selling were also not the issue for farmers. Long distance of procurement centre from the farm is not a deterrent for the farmers and neither was the delay in payments for selling culled apple under MIS.

Efficiency of MIS: The fruits like apple, kinnow, malta and santra were taken up under the scheme during the year 1990-91. Later on Galgal was included during the year 1995-96 and for mango MIS was implemented during 1998. The MIS is being implemented in different districts depending upon the production of fruit in various districts. The scheme is not open throughout the year and is open only during the harvesting and marketing period of fruits

covered under the scheme. The payments due to the farmers on account of procurement of apples are never made instantly. The usual lag between the procurement and payments is about ten months and even more than that in many cases.

The procurement of fruit under the scheme is strictly at the price announced and notified by the state government beforehand. The procurement cost is being born by the administrative department i.e. Horticulture department. The price paid to farmers for the apple procured by the designated agencies has increased from Rs. 3.75/Kg during the year 2000-01 to Rs. 5.25/Kg during the year 2008-09 after which it has remained constant till date. However, there is great variation in the quantity procured. The quantity procured of apple was as low as 912 MT during 2009-10 and as high as 111154 MT during 2010-11 indicating absence of any trend in this respect. For quality check up detailed guidelines are issued. The procured fruits are used for two purposes viz processing and sale in the open market. There is no definite trend in procurement and its disposal of apple in case of HIMFED. Majority of apple quantity is disposed of in the market. In case of HPMC, the quantity used for processing forms significant proportion.

The MIS is loss making preposition for the government as during the period 1986-87 to 1990-91, the losses were of the tune of Rs. 210.89 lacs during the first year which increased to Rs. 2742.94 lacs during the year 1989-90. During the next year the losses declined substantially mainly due smaller procurement level

The reimbursement of losses to procurement agencies is made through state department of horticulture after the submission of audited accounts by concerned agencies. The state government reimburses the procurement cost and overhead expenses after deducting the sale proceeds received by way of open market sale and utilization in processing units and any other income.

The MIS is in operation in the state for many years now. However, there are hardly any signs of improvement in the scheme. The utilization pattern of procured apples is not efficient as indicated by the low quantum being used for processing purposes and wastage. The time lag between the time when fruit is procured and the payment is released to farmers shows no sign of declining. Also the farmers are obliged to accept the payment in kind, which many times is against their will and there is mismatch between the requirement and product being offered in lieu of cash payment.

Chapter - 1

INTRODUCTION

Despite the significant progress made by our country in the field of industry and infrastructure, since the beginning of planning in 1950-51, the importance of agriculture in the Indian economy continues to be very critical. Agriculture not only provides food and raw material, but is also a source of livelihood for almost 80 percent of the population. Hence, agricultural development has been given a place of pride in successive Five Year Plans of the country. In hill state like Himachal Pradesh, the situation with regard to non-viable production units is further aggravated due to uneven topography, lack of irrigation facilities, and poor quality of soil and fragmented tiny holdings. Hardly 10 percent of the geographical area is under cultivation of which only 16 percent is irrigated.

In the hilly areas like Himachal Pradesh the agriculture is the mainstay of people because the scope for industrialization is very limited in the difficult terrain and weather conditions. Hence, the onus of development to provide income and employment opportunities to the growing population heavily falls on the agricultural sector. Therefore the main emphasis of the government is on the development of agriculture and its allied sectors.

The transition from subsistence to surplus commercial farming is inevitably linked with the development of infrastructural facilities. The development of marketing infrastructural facilities and their efficiency of operation are closely linked with the overall development of agriculture. In early phases of development the growth of infrastructure helps in the evolvement and development of a market, and the development of marketing accompanies the movement towards specialization of agricultural production, division of labour, monetization of production process and increased use of purchased inputs; all of which are characteristics of an advanced economy. Since marketing operations are both essential and costly, it is important that they be done efficiently. What is needed is widespread understanding of the importance of marketing, and of the essential contribution that efficient marketing systems can make to agricultural development. In this concern the government of Himachal Pradesh introduced some agriculture marketing reforms in the state which have been discussed as follows.

Agriculture Market Reforms in Himachal Pradesh

The Himachal Pradesh Agricultural Produce Markets Act, 1969 (Act No.9 of 1970) was passed by the state assembly which came into effect from 25.3.1970 in all the twelve districts of the state. The main objective of the Act was “to consolidate and amend the law relating to the better regulation of the purchases, sale, storage and processing of agricultural produce in Himachal Pradesh”. Prior to this “The Patiala Agricultural Produce Markets Act, 2004 was extended to the erstwhile Himachal Pradesh with effect from 8.11.1960. The new areas of Himachal Pradesh, i.e. Shimla, Kullu, Kangra and Lahaul-Spiti which were transferred in the year of 1966 from Punjab to Himachal Pradesh and were governed by the Punjab Agricultural Produce Markets Act, 1961. Hence after 1966 two Acts were in operation in Himachal Pradesh i.e., “The Patiala Act” in the old areas of Himachal Pradesh and the “Punjab Act” in the newly merged areas in Himachal Pradesh. This created confusion and duality. That is why in 1970 one uniform common Act, i.e. the Himachal Pradesh Markets Act, 1969 was passed wherein all these Acts were repealed.

The Himachal Pradesh Marketing Board is a statutory Apex Body constituted under section 3 (1) of the Himachal Pradesh Agricultural Produce Markets Act, 1969 for the enforcement of market regulation in Himachal Pradesh. The Himachal Pradesh Agricultural Marketing Board is headed by a Chairman (appointed by the State government) and represented by 15 members of whom 5 are officials and 10 are non-officials (which are nominated by the state government). The Chairman and the Secretary of the Marketing Board are the Chief Executive and the Executive respectively. The Secretary is appointed by the Government of Himachal Pradesh from the Joint Directors of Department of Agriculture. The term of the office of the Board members is three years from the date of their appointments.

The following powers and functions have been assigned to the Board in the Himachal Pradesh Agricultural Produce Markets Act, 1969 and rules framed there under:-

i) The Himachal Pradesh Agricultural Marketing Board shall advise the State Government in matters of better Marketing and trade relations and better regulation of trade in agricultural produce and improvement of agricultural marketing in the regulated markets of the Pradesh.

ii) The Board shall also act as a liaison between the State Government and the Market committees in all matters under the purview of the Act.

iii) The Board has the responsibility of framing bye laws for better marketing of agricultural produce.

iv) The Board with the prior approval of the State Government has also powers to declare its intention of exercising control over the purchase, sale, storage and processing of agricultural produce in a specified area.

v) The Board exercises superintendence and control over all Market committees established and constituted under this Act.

vi) The Board has the powers to establish a Market committee for every Notified Market Area.

Thus, the marketing Committees are accountable to the Marketing Board for their day to day functioning. The Marketing committees have also been given certain duties under section (1) of the Himachal Pradesh Agricultural Produce Markets Act. The Market Committees are corporate bodies, comprising members from the producers and trade license holders. It is the duty of the Market Committees to enforce the provisions of this Act and the rules and bye-laws made there under in the Notified Market Area.

The Himachal Pradesh Agricultural Marketing Board has declared 10 Notified Market Areas which cover the whole geographical areas of the State. One district comprises one Notified Market area except Kinnaur and Lahaul-Spiti districts which are amalgamated with Shimla and Kullu districts respectively. There is a provision under section 10 (1) that a Market Committee should have either 9 or 16 members out of which 5 members should be from the producers of the notified market area 4 from the licensed traders and one salaried person, in case there are 9 members. If total members are 16, then 9 would be producers, 6 licensed traders and one salaried person. The Board has decided to keep strength of 16 members in each Market Committee to give wider representation to the maximum area of the Notified Market area.

After liberalization of trade, agricultural marketing has witnessed major changes World over. To enable the farming community to derive maximum value from the new market access opportunities both at home and globally, Himachal Pradesh took initiative in introducing the

Agricultural Marketing reforms on the lines of the Model Act by repealing the old Act and putting in place a new Act, The Himachal Pradesh Agricultural and Horticultural Produce Marketing (Development and Regulation) Act, 2005. This Act came into force with effect from 26.5.2005. Himachal Pradesh is the first State in the country to take lead in this regard. It provides for setting up of private markets, consumer/farmers markets and creation of post harvest infrastructure in the State. Himachal Pradesh introduced single point levy of market fee system in the State. The rate of market fee in the State is lowest (1%) as compared to the neighbouring States of Punjab (4.5% including Dev. Charges) and Haryana (4%).

Comparison of Old and New Acts

Under the old act, only market committees were entrusted the responsibility of developing infrastructures and regulating the sale and purchase of the notified agricultural produce in their respective notified areas whereas under new Act, the marketing sector has been opened to the private and cooperative sectors to make it competitive as they are now allowed to set up private markets. In the new Act the alternative marketing system by encouraging direct marketing by the farmers to the bulk buyers/processors has also been allowed. There is a provision to setup farmers and consumers markets as well. Provision has been made for Public-Private Partnership in the management and development of agricultural marketing in the state. It also provides for regulation and promotion of contract farming so that farmers can get benefit from the advances of agricultural technology and opportunities being offered by the liberalization.

Himachal Pradesh has taken benefits of centrally sponsored schemes of development / strengthening of agricultural marketing infrastructure, grading and standardization' associated with the new Act. This scheme is 'reforms linked' and is being implemented in those states which amended the A.P.M.C. Act, and it allows direct marketing/contract marketing and permits setting up of markets in private and cooperative sectors. The assistance under this scheme is being provided @ 33.33% subsidy of the capital cost of the project with no upper ceiling for subsidy to the state bodies like State Agricultural Marketing Boards, whereas the rate of subsidy is 33% of the capital project subject to maximum of Rs.60.00 lakh for each project to the private entrepreneurs. The Himachal Pradesh State Agricultural Marketing Boards has already availed assistance for 13 schemes for construction/modernization and strengthening of existing market yards amounting to Rs.6.49 Crores. The private sector is also

availing assistance as provided under the scheme as a result of amendment in the Act. Besides this, M/S Adani Fresh Ltd., Container Corporation of India and Dev Bhoomi Cool Chamber Ltd are also buying the quality produce directly from the farmers. M/S Adani Group has set up 3 Controlled Atmosphere Stores with 6000 MT capacity in the state and M/S Dev Bhoomi is also setting up one Cold Store in the State. The scheme is being administered directly by the Directorate of Marketing and Inspection, Govt. of India and being implemented through NABARD.

There are total 48 Market Yards in the state including 10 Principal market yards, which handle about 15-20% of the total marketed surplus of fruits and vegetables within the State and rest of the produce is marketed outside the State. Selling of farm produce outside the state not only adds to the marketing costs in term of freight, handling, commission charges, deterioration in quality of produce but reduces the margin of market share of producers in consumers' purchase price. To enable the farmers to derive maximum value from new market access opportunities both at home and globally, the marketing network in the State needs to be upgraded, integrated and strengthened. With opening up of marketing sector for private sector investment and providing for contract farming in the State, the rural areas will become hub of agri-business activities.

Establishment, Constitution, Powers and Functions of the Marketing Board

The State Government for coordinating the activities of markets and for development, promotion and regulation of agricultural marketing, has established the Himachal Pradesh State Agricultural Marketing Board.

The Board is a body corporate and is competent to acquire and hold property both moveable and immovable and to lease, sale or otherwise transfer any such property etc. The Board consists of a Chairman, who is appointed by the State Government and twenty members including Vice-Chairman, of whom ten are ex-officio members and ten non-official members nominated by the State Government.

The Board, subject to the provisions of this Act performs the following functions:-

(i) Exercise superintendence and control over all the Committees established and constituted under this Act.

(ii) Coordinate the working of the Committees and other affairs including programmes undertaken by such Committees for the development of markets and market areas;

(iii) Undertake the State level planning of the development of agricultural produce markets;

(iv) Administer the Marketing Development Fund;

(v) To give directions to the Committees with a view to ensure improvement;

(vi) Any other functions specifically entrusted to it by this Act which may include to approve proposals for selection of new sites by the Committees for establishment of principal or sub-market yard; constructing infrastructure facilities in the market area such as grading, packing houses, storages, processing, other post harvest management facilities etc; supervise and guide the Committee in the preparation of plans and estimates of construction programme; execute all works chargeable to the Board's fund; to undertake marketing extension activities in the Board for the transfer of marketing technology and extension services etc.

Above mentioned reforms were the need of the time because of the reason that without some minimum level of agricultural infrastructure, efforts to stimulate more rapid increases in agricultural output will be frustrated. Without adequate roads, it is difficult to transport a perishable agricultural surplus to urban areas. Improved roads and transport facilities reduce transport losses and factor input costs at farm gate. Commercialization of agriculture through cash crops like fruits and vegetables can play an important role in the overall economic development, if adequate marketing infrastructural facilities are made available to the people.

Regarding fruit and vegetables the state of Himachal Pradesh, situated in north-western Himalayas, has a congenial climate for the production of off-season vegetables and fruits like apple, plum, apricot, citrus, nuts etc. The State has made tremendous progress in fruit production since 1970s. In fact, it is now popularly known as Apple State of the country, apple production, which was 1.18 lakh tons during 1973, has increased to 3.77 lakh tons during 1999-2000 with an annual growth of 3.2093 per cent. In terms of value of different fruits crops, apple alone accounts for about 92 per cent of the total value of different fruits grown in the state (Prasher and Negi, 2001). The increase in apple production in the State may be attributed to the early incentives given by the State Government e.g. priority given to research

and development, and development of post-harvest infrastructure facilities, enabling the apple orchardists to get better prices. The so far profitable nature of fruit crops have encouraged the orchardists to expand their fruit acreage, thus requiring better infrastructure facilities to cope with the increasing production. Moreover, fruit producing areas in the State are located in the interiors with high altitudes and difficult road conditions.

Marketing is often viewed as being unproductive, and the various agents that make up the marketing system are frequently felt to be highly exploitative of those with whom they deal. To examine marketing problems, we need to understand the total marketing system and the operational characteristics of its sub-systems. When surplus farm production increases there must be a market for these products and a price for them high enough to at least repay the farmer for his costs and his efforts in producing them. In this connection three things are necessary: (i) there must be a demand for farm products; (ii) someone through whom to sell them--- a marketing system; and (iii) farmers' confidence in the working of the marketing system. Even where there is someone to sell to (market demand) and someone to sell through (a marketing system), they will not make their full contribution to agricultural development unless farmers have confidence in the marketing system and the infrastructure facilities created for them.

There are several factors involved in developing farmers' confidence in the marketing systems. One is a recognition and understanding by farmers of the essential services performed by private merchants, cooperatives, or governmental agencies. Another factor is the record of performance of each agency and marketing systems in the past. Confidence is important not only to farmers, but to all those involved in the marketing systems. The matter of confidence proved more fruitful when farmers felt more secure at the time of glut production of highly perishable cash crop like apple in Himachal Pradesh. There are number of instances when apple producers unable to sell their produce in the market due to glut in production of apple. At this stage farmers required some interventions from government to compensate the loss. Though ‘Free market’ has pivotal role in the neo-liberal framework of economic development; there are innumerable instances of market failure. These instances are more frequent for agriculture commodities and also developing countries. Consequences of market failure for either producer or consumer have been enormous; and hence government intervenes in agriculture market. In India Government intervention in agriculture market takes different form,

Price support scheme (PSS) and Market intervention scheme (MIS) are two of them. The market intervention scheme (MIS) is implemented to protect growers of agricultural commodities from distress sale. In developing countries like India prices of commodities in the event of bumper crop production, often fall to low levels during the peak arrival period of commodity, In order to avoid such situation the Union Government on the request of a state government, implemented MIS for particular commodity. The MIS is achieved with the help of several public and cooperative agencies. The National Cooperative Marketing Federation (NAFED) is an important central agency for many pulses, oilseeds and horticulture commodities. The procedure for implementation of MIS in Himachal Pradesh as per the guidelines of central government is as follows.

The Government of India has been implementing market intervention scheme (MIS), for various horticultural commodities since, 1983-84 on request of State government in the event of fall in prices to uneconomic levels to ensure the farmers are not forced to make distress sales of the product. Under the scheme, a pre-determined quantity is purchased at a price fixed by the Central Government in consultation with the concerned State governments. The purchases are made by NAFED as the Central nodal agency and by the State designated agency, on equal basis. Profiles/losses incurred in the operations are shared on 50:50 basis by the Central government and the State governments.

Experience in implementing the MIS, over the years has shown that it has not proved beneficial to the farmers to the desired extent. Horticultural commodities undertaken under MIS are highly perishable in nature. The short shelf life adds to the transit losses and transportation to distant markets is not possible. Due to absence of processing arrangements for the quantities procured, the stocks are dumped in the same market creating a situation of glut. This implementation of the scheme quite often results in heavy losses on the part of State and Central governments.

In view of the above, a set of guidelines has been envisaged for quick implementation of the scheme and to ensure a system of efficient marketing, development of non-traditional/new markets, processing of agricultural produce for marketing and the sales through network of retail points, besides initiating stops for varietals changes. The salient features of the guidelines are as enunciated as follows:

(i) Market intervention price should be related to the trend in prices in rural markets and terminal markets over last 5 years besides cost of production. It would be the overall price of peak season of the last 5 years in the terminal markets minus overhead expenses or a price mutually agreed to between the State Governments and the government of India.

(ii) ICAR/Horticulture division in DAC will initiate action to introduce the improved varieties. To encourage varietals change in horticultural crops two levels of prices should be proposed, one for the existing varieties and another premium price for the improved varieties to serve as an incentive to the farmers. This will enable the farmers to grow quality produce.

(iii) Purchase of the produce would be made only from the registered farmers, farmers' cooperatives or farmers' organisations so as to eliminate middlemen.

(iv) Stocks should be disposed off through the retail outlets of cooperative or to the consumers as far as possible. However, NAFED and State agencies would have the right to exercise their discretion in favour of wholesale disposal if the situation so warrants.

(v) Ordinarily 5-10% of the targeted quantity expected to arrive in the market during the peak season would be purchased and this quantity may be enhanced in due course in consultation with the State government, NAFED, and the State agency.

(vi) The Ministry of food Processing Industries and Horticulture division of this Department would take more active part in effective tie-ups with the processing industries.

(vii) A corpus would be created from the profits of MIS to take care of losses in any given year. Though, in the beginning, Central and State governments will continue to share losses on 50:50 basis. A certain percentage of profits by the farmers will be credited to the fund to be utilised also for creation of infrastructural facilities like pro-cooling and proper storages etc. by the Central and State model agencies.

(viii) NAFED would be the agency on behalf of the Govt. of India for the MIS operations and it would also assist State agencies, farmers' cooperatives/farms in marketing and transportation, whoever needed.

(ix) The matter will be taken up with the State Govt. to provide funds from the market costs for creation for infrastructural facilities like grading, drying and pro-cooling etc.

List for Proposal of Market Intervention Scheme:

(i) Area and production of horticultural commodity for last 5 years 9 (variety wise).

(ii) Anticipated/production during the season when MIS is proposed.

(iii) Average prices for last 5 years in the rural and terminal markets (Combined and separate for common and improved varieties).

(iv) Month wise up-to-date prices at the time of proposal of MIS/harvesting period.

(v) Harvesting period of the commodity and the period for MIS operations.

(vi) Name of improved varieties, it any, which can be grown in the area and fetch better price to the farmers.

(vii) Cost of production per Qtl. Component wise (variety wise).

(viii) Overhead expenses, items wise in terminal markets:

- (a) Procurement cost
- (b) Procurement commission
- (c) Grading and packing
- (d) Mandi tax
- (e) Packing material
- (f) Transportation from procurement centres to terminal market.
- (g) Selling expenses including commission.

(ix) Storage prospects nearer the producing and consuming areas.

(x) Processing facilities available.

(xi) Names of cooperative societies of farmers/farmers' associations from which purchases will be made.

(xii) Names of cooperative societies through which retail sales will be made.

(xiii) Publicity measures undertaken to increase consumer's acceptability of the produce.

(xiv) Quantity to be purchased under the scheme.

(xv) Name of State designated agency/agencies.

(xvi) Willingness of the State government to share 50% profits/losses under the scheme.

(xvii) Willingness of the State Government to meet 50% working capital requirements of the state designated agency.

Above mentioned guidelines of MIS have been implemented in Himachal Pradesh since 1986-87 for apple fruit. In this concern the Ministry of Agriculture and Co-operation has assigned a study to Agro-Economic Research Centre Shimla to evaluate the operation of Market Intervention scheme in Himachal Pradesh with following objective.

OBJECTIVES

- To understand coverage of MIS across crops and regions of India.
- To ascertain factors that influence coverage of crops across regions.
- To understand levels and basis of participation of farmers in MIS.
- To understand problems of different stakeholders in operation of MIS.
- To study the effect of MIS on the market price of commodity in the targeted region.
- To assess efficiency of Central Agencies in operation of MIS.
- To suggest policy measures to improve operations of MIS.

Methodology

The methodology prescribed by the coordinator of the study has been adopted as such. The following text provides details of sampling procedure and analysis of data etc.

Selection of the area and sample

The peculiar topography and agro-climatic conditions in most parts of Himachal Pradesh limit the scope for profitable production of field crops, but the same offer favourable conditions for raising horticultural crops. Further, cereal cultivation, except in some areas of the low hill zone, does not offer good potential to sustain economic well being of the hill people. Even the weather does not permit multiple cropping on a profitable basis in most parts of the State.

Therefore, the best use of the land can only be made through cultivation of perennial fruit crops. Thus, the introduction of horticulture in the state not only added to the cash incomes of the farmers but also infused in them the desire to better utilize the marginal hilly land areas that were not much suitable for production of field crops. Horticulture in the State has now become a business proposition not only for orchardists but also for many others involved with the production and marketing of fruits and vegetables and various other ancillary occupations like transportation, carriage, input supply etc.

During the period, 2001-02 to 2010-11, the production of apple increased from 1,80,258 MT (99,29,040 boxes) to 8,92,112 MT (4,46,05,600 Boxes), Table-1.1 indicating the substantial progress made by the state in the field of apple production. There was matching increase in export of apple from the state. Keeping pace with the production of apple the procurement of apple by the designated agencies also registered an increasing trend. Whereas only 8,266 MT apples were procured during the year 2001-02, the amount increased to 1,11,154 MT during the year 2010-11. This phenomenal increase has been due to the fact that among all fruits, apple is most important due to highest per hectare returns. This factor induced the state government to create the infrastructure for apple marketing by establishing a number of regulated markets in these two major producing districts during the last decade. Districts Shimla and Kullu account for more than 90 percent in total production of apple in the state. The quantum of production in both these districts formed the basis for the selection and thus, both these districts were selected for the study. The selection of districts was further validated by the fact that these two districts accounted for highest amount of procurement under Market Intervention Scheme (MIS) during the years 2003 to 2011. The details of amount of procurement in different districts producing apple along with the value of procured apple at the prevailing procurement price and total apple production during the particular year have been presented in Table-1.2.

In Shimla district, Dhalli and Narkanda markets handle about 55 percent of the total arrival from different producing areas of the district, making it the largest market in Shimla district. The next in importance is the Narkanda market. On the other hand, in district Kullu, Bhuntar and Bandrol are the two major markets, together handling about 47percent of the marketed surplus of apple in Kullu which is largest. The importance of these markets, led to their selection for the study. The total number of markets in Shimla and Kullu were 10 and 7 respectively.

In the next stage of sampling, two blocks viz Theog and Narkanda in Shimla and Kullu and Nagar in Kullu district, which feed above markets, have been selected. Further, in selected blocks, three villages under each block were chosen for forming a cluster of villages in district Shimla. Whereas, in district Kullu, two villages in each block were selected for forming cluster of villages. In this selection criteria of guidelines have also been followed that distance between different clusters should not be less than 15 km. Following the guidelines, two village clusters comprising of villages Bago-Sandhu, Bishari, and Guai in Theog block and Kandyali, Firnu, and Konthlu in Narkanda block of district Shimla were formed. In case of district Kullu, the villages were Katrain and Dobhi in Nagar block and Jarri and Bradha in Kullu block. In each clusters of villages 15 respondents belonging to different category of farms have been chosen randomly for data collection. In all a sample of 30 apple orchardist households in each district were selected for the study (Table-1.3).

This sampling has been done from the universe of holdings which were 172, 97, 39 and 24 among marginal, small, medium and large respectively in district Shimla and 1184, 404,147 and 80 among marginal, small, medium and large farmers in district Kullu respectively (Table-1.4). The table also presents the total number of blocks and regulated markets in the selected markets from which the selection has been made.

Data Collection:

The primary data has been collected on the schedules provided by the coordinator by personal interview method. The collected data was tabulated and analysed on computers using the EXCEL worksheets. The secondary data has been collected from different institutions of the State government like Directorate of Horticulture, Directorate of Land Records, Marketing Board, Directorate of Economics and Statistics, Directorate of Census, HPMC and HIMFED dealing with MIS in the state.

LIMITATIONS:

Despite the best efforts of the study team the study suffers from following limitations.

1. In some cases the block wise data especially related to land is not available at Directorate of land Record. Therefore, in such cases district wise data has been presented in the study.

2. The data on cropping pattern, land use pattern and land holding sizes has not been published after 2007-08 and hence the latest data could not be used.

3. The prolonged scenario of poor crop production in district Kullu led to situation where the farmers did not offer any quantity of apples for procurement under MIS during last 6 years, except for 2007-08 and 2010-11. During 2010-11 also, the farmers of only Nagar block offered apples for procurement under MIS.

Table-1.1: Apple Production, export and quantity procured under MIS in H.P. during the period 2000-01 to 2011-12.

Year	Total apple production in the state		Export (Outside the state)		Procured under MIS	
	(In M.T.)	(In boxes)	(In M.T.)	(In boxes)	(in M.T.)	(In bags)
2000-01	376736	-	-	-	52890	881500
2001-02	180528	9929040	162475	8936136	8266	137765
2002-03	348263	19154465	313437	17239019	28921	482017
2003-04	459492	25272061	413543	22744855	37338	622300
2004-05	527601	26380039	474841	23742035	44837	747283
2005-06	540356	27017827	486321	24316045	22616	376933
2006-07	268402	13420109	241562	12078098	9569	159483
2007-08	592576	29628800	533318	26665920	29427	490450
2008-09	510161	25508063	459145	22957257	45741	762350
2009-10	280105	14005230	252094	12604707	912	15200
2010-11	892112	44605600	802901	40145040	111154	1852567

Table-1.2(A): District wise procurement of apples under market intervention scheme during the years 2003 to 2007

Sr. No.	Name of district	2003 Procurement price @ Rs. 4.00 per Kg.			2004 Procurement price @ Rs. 4.25 per kg.			2005 Procurement price @ Rs. 4.25 per kg.		
		Total production	Quantity procured (In MT)	Value of procured apples (in lac Rs.)	Total production	Quantity procured (In MT)	Value of procured apples (in lac Rs.)	Total production	Quantity procured (In MT)	Value of procured apples (in lac Rs.)
1.	Shimla	229207	31759.650	1270.39	294402	40841.620	1735.76	318449	17780.645	755.68
2.	Kullu	81489	3318.330	132.73	98781	2029.980	86.27	141844	2699.960	114.75
3.	Mandi	10147	2051.220	82.05	23261	1664.940	70.76	20131	1930.800	82.06
4.	Sirmour	592	75.900	3.04	367	92.400	3.93	560	5.460	0.23
5.	Kangra	285	45.743	1.83	595	-	-	710	20.580	0.87
6	Kinnaur	22177	67.404	2.70	33074	203.940	8.67	38066	123.510	5.25
7	Chamba	4238	10.800	0.43	8811	-	-	7564	50.400	2.14
8	L/Spiti	41	8.880	0.35	135	3.960	0.17	209	4.620	0.20
9	Solan	87	-	-	66	-	-	68	-	-
	Grand Total	348263	37337.927	1493.52	459492	44836.840	1905.56	527601	22615.975	961.18

Sr. No.	Name of district	**2006** Procurement price @ Rs. 4.25 per kg.			**2007** Procurement price @ Rs. 4.75 per kg.		
		Total production	Quantity procured (In MT)	Value of procured apples (in lac Rs.)	Total production	Quantity procured (In MT)	Value of procured apples (in lac Rs.)
1.	Shimla	310252	8798.760	373.94	163301	22862.490	1085.97
2.	Kullu	140633	430.080	18.28	43730	4135.020	196.41
3.	Mandi	36421	327.540	13.92	16625	2290.560	108.80
4.	Sirmour	680	-	-	245	-	-
5.	Kangra	650	-	-	443	-	-
6	Kinnaur	41101	11.204	0.48	40277	121.287	5.76
7	Chamba	10367	-	-	3533	10.980	0.52
8	L/Spiti	193	1.200	0.05	191	6.540	0.31
9	Solan	59	-	-	53	-	-
	Grand Total	540356	9568.784	406.67	268402	29426.877	1397.77

Table-1.2(B): District wise procurement of apples under market intervention scheme during the years 2008 to 2012

Sr. No.	Name of district	2008 Procurement price @ Rs. 5.25 per Kg.			2009 Procurement price @ Rs. 5.25 per kg.			2010 Procurement price @ Rs. 5.25 per kg.		
		Total production	Quantity procured (In MT)	Value of procured apples (in lac Rs.)	Total production	Quantity procured (In MT)	Value of procured apples (in lac Rs.)	Total production	Quantity procured (In MT)	Value of procured apples (in lac Rs.)
1.	Shimla	349262	42560.932	2234.45	336753	616.200	32.35	171945	98624.640	5177.79
2.	Kullu	160124	1618.740	84.98	77409	143.340	7.53	54385	7387.080	387.82
3.	Mandi	32283	925.120	48.57	30300	130.860	6.87	8659	4435.860	232.88
4.	Sirmour	689	599.279	31.46	776	19.620	1.03	242	602.880	31.65
5.	Kangra	423	0.000	0.00	502	0.000	0.00	401	0.000	0.00
6	Kinnaur	41550	15.240	0.80	55169	0.000	0.00	40289	90.120	4.73
7	Chamba	7744	11.340	0.60	8640	2.280	0.12	3962	6.000	0.32
8	L/Spiti	473	10.680	0.56	577	0.000	0.00	193	7.020	0.37
9	Solan	27	0.000	0.00	34	0.000	0.00	28	0.000	0.00
	Grand Total	592576	45741.331	2401.42	510161	912.300	47.90	280105	111153.600	5835.56

Sr. No.	Name of district	**2011** Procurement price @ Rs. 5.25 per kg.			**2012** Procurement price @ Rs. 6.00 per kg.		
		Total production	Quantity procured (In MT)	Value of procured apples (in lac Rs.)	Total production	Quantity procured (In MT)	Value of procured apples (in lac Rs.)
1.	Shimla	602684	5398.920	283.44	168634	11158.800	669.53
2.	Kullu	191212	173.400	9.10	44619	362.280	21.74
3.	Mandi	22315	72.120	3.79	4417	211.380	12.68
4.	Sirmour	673	15.840	0.83	457	85.800	5.15
5.	Kangra	425	0.000	0.00	400	-	-
6	Kinnaur	63781	0.000	0.00	53290	2.880	0.17
7	Chamba	10789	3.360	0.18	3074	0.840	0.05
8	L/Spiti	194	0.000	0.00	126	-	-
9	Solan	38	0.000	0.00	19	-	-
	Grand Total	892112	5663.64	297.34	275036	11821.980	709.32

Table-1.3: Distribution of sample according to size of holding

Block	Size class				Total sample
	Marginal	Small	Medium	Large	
District Shimla					
Theog	4	6	2	3	15
Narkanda	6	9	0	0	15
Total	10	15	2	3	30
District Kullu					
Nagar	6	4	5	0	15
Kullu	3	10	2	0	15
Total	9	14	7	0	30
Grand total	19	29	9	3	60

Table: 1.4 Distribution of sample Farmers

District	Regulated market	Blocks/ Tehsil	Village cluster	No. of respondent Under MIS Market	Category of farmers (as per size of holding)			
					Marginal (< 1Ha)	Small (1-2 ha)	Medium (2-5 ha)	Large (>5 ha)
Shimla								
Total	10	10	-	-	-	-	-	-
Sample	2	2	6	30	172	97	39	24
Kullu								
Total	7	5	-	-	-	-	-	-
Sample	2	2	4	30	1184	404	147	80

Chapter - 2

BACKGROUND OF STUDY DISTRICTS

It was considered important to present the brief history of both the study districts before the discussion of socio-economic profile of sample farmers is discussed. It is in this context that the general discussion of study districts viz Shimla and Kullu has been presented below.

DISTRICT SHIMLA

Physical Features

Shimla district is situated in humid temperate zone of Himachal Pradesh. The district is located between longitude 77^0 and 78^0 East and latitude 30^0. It is surrounded by Mandi and Kullu districts in the North, Kinnaur in the East and Sirmour district in South and Solan district in the West. The geographical area of the district is 5,131 sq. kms, which is 9.22 per cent of the total area of the state. The elevation of the district varies from 600 mts above msl at Tata Pani to 5,760 mts above msl at Gushu Pishu. The entire district is mountainous with steep hills. The topography of the district is rugged and tough.

Climate

The climate of the district varies from cold and dry zone to temperate and sub-tropical zone depending on the terrain and height of the area. The hills and the mountain ranges are generally aligned in the east-west direction. The predominantly rough terrain, prevalence of interlocking spurs, narrow and steep side valleys throughout the district reflect the youthfulness of its topography.

Soils

The soils of Shimla district mainly developed under varying magnitude of podzolization. The B horizon shows eluviations of free resquioxides and clay. The gentle slopes of hills have undergone a good deal of modification due to terraced farming. On the whole, the soils are young and thin, deep ploughing is neither possible nor advisable. Generally, the soils on the northern slopes are thicker than those of southern slopes. The soil reaction ranges from slightly acidic to strongly acidic and the texture of the soil ranges from sandy loam to clay loam.

Demographic Features

The population of Shimla district as per 1981 census was 5,10,932 which increased to 6,17,404 in 1991 recording a decadal growth rate of 20.84 per cent. The population of the district further increased to 7,22,502 in 2001 with a decadal growth rate of 16.90 per cent. The

district accounted for 11.89 per cent of the total population of the state. The density of population increased from 100 persons per square kilometre in 1981 to 141 persons per square kilometre in 2001. The literacy level of the district has increased from 42.74 per cent in 1981 to 79.68 per cent in 2001. The literacy rate of the district was higher than that of the state average for 1991 and 2001. The male literacy was higher than that of the female literacy both for the district as well as for the state as a whole.

Land Utilization, Cropping Pattern and Crop Production

The area under forest in the district remained almost stagnant between 1990-91 (25.19 per cent) and 2004-05 (25.50 per cent). There was marginal decline in the proportion of the area under barren land, while the area put to non-agricultural uses, pastures, cultivable waste, current fallow, other fallow and area under miscellaneous trees/groves marginally increased by varying degrees between 1990-91 and 2004-05. The net sown area decreased significantly from 17.65 per cent to 13.34 per cent during this period. The net sown area decreased significantly from 17.65 per cent to 13.34 per cent between 1990-91 and 2004-05. The pattern of change in land utilization for the state was, however, different. The area put to non-agricultural uses, however, recorded a significant increase particularly between 2000-01 and 2004-05.

Distribution of Land Holdings

The process of marginalisation of holdings was also evident both for the district and state since 1980-81. As per 1980-81 and 2000-01 agricultural census, the proportion of marginal holding increased from nearly 42 per cent to more than 55 per cent while that of the small holdings, it remained unchanged at about 24 per cent. The proportion of medium and large holdings, however, recorded a continuous decline. The proportion of medium and large holdings, recorded a continuous decline. The proportion of operated area accounted for by marginal and small holdings was around 43 per cent. Whereas medium and large size holding whose numerical proportion was around 23 per cent, accounted for nearly 57 per cent of the total operated area. More or less similar pattern was in evidence for the state as a whole. While the proportion of marginal holdings increased from around 55 per cent in 1980-81 to more than two third of the total holdings, that of small holdings decreased by a small proportion from 22.03 per cent to around 19 per cent. The medium and large holdings have also recorded continues decrease.

Livestock and Fisheries

Animal husbandry is subsidiary occupation and correlated in agriculture and horticultural operations in the district as well as in the state. The overall situation in the district regarding livestock composition and the changes occurred between 1977 to 2003 reveal that among livestock population, cattle occupied the most important place followed by sheep and goats. The number of cattle as per 1977 census was 3,87,715 which decreased to 3,07,187 recording around 21 per cent decline over the period. The number of buffaloes and sheep also recorded a declining trend between the years 1977 and 2003. It is significant to note that the number of sheep reduced by more than 46 per cent over the period. The goats and poultry showed slight increase in their number over the period. However, the total livestock population reduced by about 16 per cent between the years 1977 and 2003.

DISTRICT KULLU

Initially, Kullu was a Tehsil of Kangra district which was made a separate district in 1963 and later on was integrated with Himachal Pradesh in November, 1966. Presently, Kullu district is comprised of four tehsils, namely, Kullu, Manali, Banjar and Nirmand and two subtehsils at Ani and Sainj. There are five development blocks in the district, namely, Kullu, Naggar, Banjar, Ani and Nirmand. There are 204 panchayats and 172 revenue villages. Kullu, Manali, Bhuntar and Banjar are major towns. Kullu and Manali are major tourist places. Manikaran and Vashisht are famous for hot water springs.

Location

The name Kullu traces its origin from the word 'Kullut' which was described on the coins of first and second centuries. District Kullu, the valley of village gods, nestles in the Pir Panjal range of the Western Himalayas. It is located between 30^0 -51'-00" North latitude and 77^0-06'-04" East longitude.

Boundaries

The north-east boundary of the district touches the border district of Lahaul & Spiti. On the east and south-east, it is bound by Kinnaur and Shimla districts; on the south-west by Mandi and on the west by Kangra. The geographical condition of the district is mountainous cruised by rivers and valleys. The mountains in the region are comprised of high ranges with sharp crests and steep terrains. The region is characterized by semi-tropical forest vegetation. The hillsides are covered with dense pine woods and higher up stand deciduous arboretum, rhododendron and evergreen oak, fir and spruce. The Beas and Satluj are the principal rivers of the district and the entire drainage of the district is received by these two rivers. The Beas runs down from the snowy heights of Beas Kund near Rohtang pass and passes southwards through Manali and

Kullu towns till it reaches Larji. It joins its main tributaries, the Parvati at Bhuntar, the Sainj (a fairly large river flowing to the west from 'Supa Kuni' high peak on Spiti boundary) and the Tirthan below Larji. Other tributaries of Beas in the district are Solang nalla, Manalsu, Sujoin, Sarvari and Phozal nullah. Satluj is the other major river on the southern boundary of the district touching Ani and Nirmand blocks. Kurpan stream in the Outer Seraj, flows in the south-east direction from Srikhand peak down to a fertile valley and joins the Satluj below Nirmand. Ani Khad having its origin from Jalori peak, flows through a narrow valley and drains into Satluj near Behna village.

Area

The total geographical area of the district is 5503 sq. km. which is comprised of mountain peaks as high as Deo-Tibba (6123 mts) and as low as Jalori pass (3000 mts.), the valleys of the Beas, the Parvati, the Sainj, the Tirthan and the vales of Ani and Kurpan. The total population of the district is 3,81,571 as per the 2001 census, which accounts for 6.25 per cent of the state's population. The altitude of the district ranges from 500 m to 5000 m above the mean sea level, but the habitation is only up to 3500 m. The district comprises of physiographic areas viz., Ujhi, Lug, Rupi, Kharahal and Seraj areas. The Seraj area is further divided into inner and outer Seraj. The inner Seraj includes Banjar block and Outer Seraj includes Ani & Nirmand blocks.

Agro-Climatic Conditions

The district is characterized with cold dry weather. The maximum temperature varies from 15.8^0C in January to 32.8^0C in June, whereas the minimum temperature ranges from 21.1^0C in July to as low as 0.7^0C (Twenty three years' average from 1985-2007). The summers are mild and winters are harsh due to snowfall on mountain ranges. The upper regions experience snow and sleet fall while rains are confined to the lower heights. The rainfall is well distributed from January to September and other three months receive comparatively less rainfall. Maximum rainfall is received during the month of July.

Agro-Ecological Situations and Soils

Kullu District falls under two agro climatic zones viz., mid hill sub humid zone and high hill wet temperate zone as identified under NARP. Further, on the basis of altitude, topography, thermal regime, soil type, hydrological features, precipitation and land use, four agro ecological situations (AESs), three falling under mid hill sub humid zone and one under high hill wet temperate zone, have been identified.

Valley Areas

This AES includes the valley areas having elevation ranging from 651-1300 m in all the five development blocks. The average annual rainfall is about 1000 mm. Soils are entisol and inceptisol with gentle slopping topography. The net cultivated area under this AES is about 12.7 thousand hectares (35.05%) with partial irrigation facilities. Main sources of irrigation are flow and lift irrigation schemes. Vegetable, cereal and fruit based cropping systems are predominant in this AES. The net cultivated area is spread over approximately 54.3, 11.8, 11.8, 11.8 and 10.3 per cent in Kullu, Nagar, Banjar, Nirmand, and Ani blocks, respectively.

Forests

According to the forest department the total area under forests in the district is 4,95,169 hectares. The entire area is divided into six forest circles, namely, Kullu, Parvati, Banjar, Ani, Wild Animals and National Park, each having 19.5, 31, 5.29, 10.8, 9.69 and 23.72 per cent of the total forest area, respectively. Again, the forest area has been classified under three categories i.e. reserved forests, protected forests and unclassified forests. Reserve forests occupy 3.24 per cent of the area whereas protected forests occupy 64.8 per cent of the total area. Large scale felling of trees, forest fire, theft, and overgrazing are the major factors resulting in destruction and degradation of forests. Total value of medicinal herbs, resins and other forest products during 2002-03 amounted to Rs.61 lakh.

Agricultural Status

The economy of the district is basically agrarian. It largely depends on agriculture, fruit farming, and animal husbandry. Edaphic conditions in the district vary considerably. The average rainfall also varies in the valley as well as on the high altitude. The texture of the soil is generally sandy loam to clay loam. The salubrious agro-climatic conditions provide a range of potentialities for growing cash crops like off-season vegetables, seed potatoes, pulses, and temperate fruits apart from cereals, millets and oilseeds. The low lying fertile valleys where irrigation facilities are available, cultivation of off-season vegetables has emerged as an attractive source of income for the farming community.

Land Holding Pattern

More than 81 per cent of the total holdings in district Kullu are marginal, 13.5 per cent are small, 4.5 per cent are medium and only 0.85 per cent are large (2005-06). The proportion of marginal holdings has continuously increased whereas that of small and medium has decreased over the period from 1980-81 to 2005-06, which witnesses the fact that the small, medium and large holdings are continuously being fragmented to give rise to marginal holdings.

Land Utilization Pattern

The proportion of land put to non-agricultural purposes has increased over the time, which is a matter of concern for increasing pressure on agricultural land. But, on the other hand, the proportion of barren land has decreased from 7.15 in 1990-91 to 2.20 in 2004-05, which shows that the endeavours to reclaim the barren land have proved to be successful over the period. The percentage of net sown area has remained almost constant over the period varying between 72 and 74 per cent. At the same time, an increase in the proportion of current fallow land reflects the increasing disinterest of farmers towards agriculture, which may be because of rapidly increasing costs of agricultural production, risk of market fluctuations, lack of irrigation facilities, etc. The non-cultivating owners also contribute to this factor. At state level the proportion of both the barren land and land put to non-agricultural uses has increased over the period.

Cropping Pattern

As the cereal crops viz., maize, wheat, barley and pulses are generally the domain of unirrigated land, hence, no significant shift in the proportion of acreage under these crops has taken place over the period. However in case of paddy, 80 per cent of which is grown under irrigated conditions, a significant proportion of the area has been shifted to vegetables. A sharp decline in the area under food grains signifies the extent of commercialisation of agriculture in the district in recent years. The total cropped area as well as the area under food grains registered a declining trend at state level too.

Fruit Production

Apple is the major fruit crop of district occupying about 85 per cent of the total area under fruits and contributing more than 87 per cent to total fruit production. Area under apple as well as that under total fruits has continuously increased over time. Other fruits include plum, peach, pear and apricot.

Livestock and Poultry

Livestock is another rewarding source of income. Every household invariably used to keep a few cows or buffaloes, sheep, goats, pits and ponies. The bovine density was almost constant during the three census periods i.e. 1977, 1992 and 1997 but has shown an increase from 0.6 to 0.7 during 2003. Similarly, the number of bovines per hectare decreased during first three census periods but increased to 8.98 during the last census period, which is an indicator of the increased pressure on agricultural land. The number of poultry birds has decreased during 1997 and 2003 as compared to 1992 census.

Chapter - 3

DEMOGRAPHIC FEATURES OF SELECTED DISTRICTS

The present chapter deals with the demographic and agro-economic details of the selected district in comparison to the state profile.

Demographic features

The geographical area of the state has increased from 3367596 hectares to 4547280 hectare during 1990-91 to 2000-2001. The increase of total area of the state is due to the fact that initially the revenue department of the state used to maintain land record on the basis of individual land of the households by keeping aside the government land but with the introduction of resettlement of land record the revenue wing has started measuring government land also and has included in the papers. It is because this reason the geographical area has increased from 425672 to 508027 hectare during 1990-91 to 2000-01 in district Shimla. However, there is a decrease in the geographical area of district Kullu may be due to the fact that it is surrounded by many districts and variation in the land distribution as per resettlement has shown decrease in its geographical area, Table-3.1 presents the details

There is a slight increase in number of inhabited village in the district Shimla may be due to the fact of increase in population and availability of land in hilly topography. Further table shows that in comparison of 172 villages of district Kullu the number of villages in district Shimla was very high, 2311 during 1990-91. The number of inhabited villages remained constant in Kullu but it increased to 2520 in district Shimla during the year 2000-01.

It may be observed that the population of district Shimla is just about double in comparison of district Kullu but the population pressure in district Kullu is high as compared to Shimla. Further table shows that the gap between rural and urban area was less in district Kullu as compared to district Shimla which may be due to the fact of comparatively more geographical area in district Shimla and lower connectivity within the district. At overall level the pace of increase in rural population was higher as compared to urban population in the state.

The sex-wise distribution of population in the state indicates that in 1990-91 the sex ratio was 975.52 which decreased to 968.25 during 2000-01 and the similar pattern has been observed in both the study districts with lower sex ratio. The sex ratio was 896.35 and 926.97 in district Shimla and Kullu respectively.

In case of literacy status, it is indicated that though literacy rate is lower among females but the gap between literacy rates among male and female has decreased over the period of time. The pace of increase in literacy among both male and female is very encouraging and has registered continuous increase in the districts.

Land use Classification

The study of land use pattern (Table 3.2) indicates that in the state, net area sown decreased from 582799 hectare to 554592 during 1990-91 to 2000-01 and it further declined to 539462 hectares during the year 2008-09. This may be due to the reason that in foot hills of the state there is trend of diverting the cropped land to non-agricultural uses because of escalating land prices. Many farmers have also stopped cultivating the land due declining land holding sizes which has made the agriculture non-viable preposition. The menace of monkeys and other wild animals damaging the crops is also a major contributing factor for the scenario. At the same time availability of cheap food-grains in required quantities through PDS has relegated agriculture into secondary occupation with major chunk of household income coming from non-farm sources.

The farming system in low hills of the state is cereal based with low income levels as compared to horticulture and off-season vegetables etc in other areas of the state. The possibility of undertaking such high income generating activities in low hill areas is limited due to requirements of huge investments, such crops being capital and labour intensive in nature. The situation has become more critical with no or limited availability of irrigation facilities. The only financial returns from un-cultivated land are from selling of grass to households with large dairy component.

The study indicates that the net area sown has decreased from 75136 hectare to 72554 hectare in district Shimla and further to 64792 hectares during the period 1990-91 to 2008-09. However, the situation was just reverse in district Kullu where net area sown has increased from 36881 hectare to 37185 hectare between 1990-91 to 2000-01 and remained almost constant at 37236 hectares during the year 2008-09. The increase in net area in district Kullu is due to the fact of diversification of cropping pattern towards off-season vegetable crops like tomato, cauliflower, cabbage, beans, capsicum and potato etc. The soil of this district is very suitable for growing off season vegetables and at present the farmers are getting major income from vegetable and cultivation of fruits. At the same time the district also enjoys the desired

marketing facilities through the efforts of the state government which has opened a number of market yards at different places of the district. In fact, Kullu district has plain valley and availability of irrigation water is in plenty.

In case of area sown more than once, at overall level, the gap between 1990-91 and 2000-01 is very narrow as compared to study districts. During the year 2008-09 also it almost remained constant at 406669 hectares. The area sown more than once has been continuously declining in district Shimla from 34851 hectares during the year 1990-91 to 21052 during the year 2008-09. This has been due to the reason that more and more area is being diverted to apple crop which is a plantation crop. But in district Kullu the area sown more than once after initial decline till the year 2000-01 increased further during the year 2008-09, due to the fact that vegetable cultivation is becoming more popular in the district due to higher profitability.

Further, the gross cropped area, in the state, decreased from 983599 to 947542 hectare during 1990-91 to 2000-01 and further to 946131 during the year 2008-09. The same trend was observed in district Shimla with gross cropped area declining from 109987 to 86024 hectare over the entire period. But in district Kullu gross cropped area after initial increase from 60650 to 66818 hectare during the period of 1990-91 to2000-01, declined to 64256 hectares during the year 2008-09. The increase in gross cropped area only in Kullu district is again due to the fact of continuously increasing trend of cultivation of vegetable crops in different seasons of valley area of the district.

Categories of Farm Households:

The pattern of distribution of operational holdings among different categories of households has been presented in table 3.3 which reveals that at overall level the percentage of farm household in the category of 0 to 1 hectare were 61.55, 67.29 and 68.21 percent during 1990-91, 2000-01 and 2010-11 respectively. This indicates that there is a regular shift of holdings to this category from other categories. This is a clear indication of process of land fragmentation in the state over a period of time. However, the process of fragmentation appears to have slowed down during the later period of 2000-01 to 2010-11. Similar trend fragmentation is evident in the individual districts. The higher increase inthe number of holdings in the category of 0 to 1 hectare of land especially between 1990-91 to 2000-01 may be due to the fact that there were number of programmes in favour of marginal farmers under which the provision of special benefits of subsidy were given. Among these programmes IRDP was the major one

under which number of provision of assistance have been made available to this category of farms. For availing these facilities joint families deliberately converted into nuclear families during this period. But this process got retarded during the later years and hence the pace of fragmentation slackened.

It is further indicated that presently (during the year 2010-11) 62.28 and 81.78 percent of the holdings in Shimla and Kullu districts respectively belonged to the category of 0 to 1 hectare of land in comparison to 68.21 percent holdings belonging to this category at overall level of the state. In case of small farmers (1-2 hectare) the percentages of holdings started declining and were 20.63, 19.06, and 18.82 during the years 1990-91, 2000-01 and 2010-11 respectively.

This trend of declining percentages of holdings in the larger categories was present in both the districts and in the state as well. The decline in the percentage of holdings in the category of 2.1-4.0 hectares was from 16.81 per cent to 11.82 per cent in district Shimla whereas in district Kull this decline was from 8.96 to 4.18 per cent of total holdings. In this category, the percentage of holdings at state level was from 12.24 to 9.48 per cent. Similar is also evident in other two categories also.

Implements, Infrastructure and Institutions

Implements, infrastructure and institutions in selected districts and also at overall level of the state, over the years have been presented in table 3.4 depicting that all the villages in the selected districts and the state as well were electrified. This is due to the fact that Himachal Pradesh is power surplus state and the state electricity board has put in place the extensive transmission and distribution network electricity despite very difficult and mountainous terrain. Himachal Pradesh has a vast hydro electric potentials which is estimated 23,000 M.W. The total installed capacity (hydro & diesel) in Himachal Pradesh as on 31st March 2012 was 471.6 MW (Hydro 471.5 MW and diesel 0.1 MW).

Owning to hilly topography of the state there is very little scope for the use of tractors except in valley areas. There were only 3466, 4205 and 6966 tractors in the state during the three points of time under consideration. There were no tractors in the selected districts being used for agriculture; these even if present were mainly used for transportation of construction material and other goods. Only a few district situated in low hills zone (Una, Hamirpur, Bilaspur, Kangra, Sirmour and Mandi) of the state were utilizing tractors for various operations like ploughing and sowing of crops. In these districts the pressure of population is higher and size

of holding is less which does not allow to rear bullock hence, the importance of said implement is more. However in the other districts which are having hilly terrain like, Shimla, Kullu, Kinnaur, Lahaul & Spiti, part of Sirmour, Mandi and Chamba the scope of tractor is less hence, the presence of tractors is very low in the state.

The statistics on motorable road shows that there has been a regular increase in road length at state level as in 1990-91 there were only 22445 KM of road which increased to 32926 km in 2010-11. In a hilly state like Himachal Pradesh the entire progress of development depends primarily on the development of roads. It has not been possible so far to provide railways network in these areas. No movement of any type of material and persons in various fields like agriculture, horticulture, industry is at all possible unless there is a well developed system of roads and road transport. Thus the road constitutes the very life line of Himachal's economy. Percentage of villages connected with road shows that at overall level about 70 per cent of the villages have been connected with road in 2010-11 against 60 percent in 1990-91. Similarly the percentage of villages connected with roads varied between 72 and 70 percent during 2010-11 in Shimla and Kullu districts respectively.

Number of bank branches functioning at overall level was 1105 branches in 2010-11 which were only 723 in 1990-91 (Table 3.4). Similar increase was also observed in study districts where the number of bank branch increased from 120 to 157 in district Shimla and 60 to 92 in district Kullu during 1990-91 to 2010-11, respectively. The higher increase, between the years 2000-01 to 2010-11, may be due to the reason of increase in commercial crops, followed by opening of various market yards and establishment of Himachal Gramin Bank in large scale.

Post office is the oldest institution in India and up to eighties the state was dependent on this institution for communication and financial activities also. At overall level the number of post offices was 2550 during 1990-91 which increased to 2745 in 2000-01 and 2777 in 2010-11. This increase was from 280 to 300 and further to 325 in district Shimla and from 140 to 148 and 157 in district Kullu over this period. The pace of expansion of post office network was almost same in districts and the state. But during the later period the pace of expansion slowed down may be due to the reason of fast expansion of other similar institutions.

The number of co-operative societies in the state (Table 3.4) increased from 3200 to 3900 and 4489 during 1990-91, 2000-01 and 2010-11. Increasing trend was also clear in Shimla and Kullu which could be due to the fact that rural population has higher accessibility and larger

confidence in cooperative leading to increase in number of societies. This could also be due to the reason of benefits available to cooperative societies which motivated the farmers and others to carry on their business under the umbrella of cooperative societies.

The available figure of agriculture produce market reflects that at overall level there were 44 agriculture produce markets in the state during 2010-11, out of which 10 were in Shimla and 7 in Kullu.

Net Area Irrigated

Net area irrigated in study districts and state as a whole has been presented in table 3.wherein it may be observed that percentage of net area irrigated was merely 18.4 per cent during 2000-01 which has shown marginal increase of about one percent from 1990-91. In this comparison the percentage share of irrigated area in Shimla and Kullu was merely 4.3 and 5.7 respectively in 2000-01. The percentage of net area irrigated has shown an increase of about one percent in Kullu district whereas, it has decreased by about one percent during 1990-91 to 2000-01. District Shimla and Kullu situated at high hill zone hence, provision of irrigation is quite difficult and expensive and at the same time the quantity of natural resources of water has decreased significantly.

Regarding type of sources in different topography of the state shows that in low hill zone canal and tube wells are feasible whereas, in mid hill zone provision of tanks and in high hill zone diversion of water either from tanks or natural resources to fields through pipes is the main strategy. Overall situation of irrigation indicate that the provisions of irrigation system is very poor and even the irrigated area is decreasing over the period of time.

Area under Different crops

The area under different crop has been presented in Table 2.6. In this table area under different crops indicates that in both the districts data has been presented from 1982 to 2002. As per the direction of Directorate of Land Record still data up to 2002 is in use and for remaining period the data will be published later on as compilations work is in progress. The table shows that average area under total cereals in district Shimla accounted to be 82287, 65194 and 50512 hectare during the average period of 1980-82; 1990-92 and 2000-02 respectively. This shows the area under cereals comprises of rice, maize and wheat has been decreasing continuously since 1982 to 2002. This table also shows that the area under wheat

followed by rice has reduced just to half during mentioned period. This may be due to the fact that both the items are available through the continuous supply of PDS on subsidy bases. On the other side diversification towards cash crop in Shimla district especially of fruit and vegetables has shown its impact in reduction of area under cereal crops.

In case of area under cereal in Kullu district the speed of decrease in area is not as high as in district Shimla. In this concern table shows that average area under total cereal has been recorded 46162; 48092 and 42434 during average period of 1980-82; 1990-92 and 2000-02 respectively. The less decrease of average area under total cereals in Kullu district in comparison of Shimla is due to the fact that plain valley area of district Kullu is very famous for the growth of maize and wheat due to regular availability of water for irrigation. At the same time per unit production of both the crop is very high. These crops are also grown under rain fed conditions hence two blocks i.e. Banjar and Anni of the districts are remote areas where these crops are general for growth. The cultivation of rice is labour oriented hence, production cost is very high therefore, area under the crop has been reduced from 3133 hectare to 1719 hectare since 1980-82 to 2000-02. At the same time supply from PDS has proved very cheap in comparison of home produced rice. The supply of maize for the feed to poultry in Punjab has become very popular in Kullu district due to heavy production.

Further table shows that in Shimla district there is a decrease in area under pulses and food-grains over the period of 1990-92 to 2000-02. The area under pulses decreased from 7205 to 5544 hectare and food-grains from 72399 to 56056 hectare between the years 1990-92 to 2000-12, respectively. Similarly in both the crops (pulses and food grains) the area reduced from 3743 to 2816 hectare and 51835 to 45246 hectare in Kullu respectively. On the other hand area under fruit has been increased from 12133 hectare to 28758 hectare over 1990-92 to 2000-02 in Shimla district. Similarly in Kullu district area under fruit jumped from 6991 to 8829 hectare during 1990-92 to 2000-02. The area under vegetable has also shown increasing trend in both the district but the rate of increase has shown higher in Kullu district over said period. This shows the decreased in area of total cereals, pulses and food-grain diversified toward fruit and vegetable in both the study district. It is because of the reason that total cropped area has shown continued increase from 1980-82 to 2000-02 in both the districts.

Table: 3.1 Demographic features of selected districts as compared to the state over the period of 1990-91, 2000-01, and 2010-11.

Particulars	District -Shimla			District -Kullu			State		
	1990-91	2000-01	2010-11	1990-91	2000-01	2010-11	1990-91	2000-01	2010-11
Geographical area (hect.)	425672	508027		50791	50112		3367596	4547280	
No. of inhabited villages (no.)	2311			172			16997	17495	
Total Population (00's)	617404	722502		302432	381571		5170877	6077900	
Rural Population (00's)	491272	555269		281421	351478		472168	6482319	
Urban population (00's)	126932	167233		21011	30093		449196	595581	
Male Population (00's)	325897	380996		157529	198016		2617467	3087990	
Female Population (00's)	291507	341506		144903	183555		2553410	2989960	
Male literacy (%)	75.96	87.2		69.64	84.0		75.36	85.3	
Female literacy (%)	51.75	70.1		38.53	60.90		52,13	67.4	

Source: Statistical outline of H.P.

Table 3.2: Land Use Classification (in ha) of selected districts of state over the period of 1990-91, 2000-01, 2009-10.

Particulars	District -Shimla			District -Kullu			State		
	1990-91	2000-01	2010-11	1990-91	2000-01	2010-11	1990-91	2000-01	2010-11
Geographical area	425672	508027		50791	50112		3367526	4547280	
Land put to non agriculture uses	12406	13929		3891	5975		193186	313729	
Net area sown	75136	72554		36881	37185		582799	554592	
Area sown more than once	34851	21480		23769	20633		400802	392950	
Gross Cropped area	109987	94034		60650	66818		983599	947542	

Source: Annual season and crop report.

Table 3.3: Different categories of farm households in selected districts over a period of 1990-91, 2000-01, 2009-10

(No)

Particulars	District –Shimla			District –Kullu			State		
	1990-91	2000-01	2010-11	1990-91	2000-01	2010-11	1990-91	2000-01	2010-11
0-1 hectare	39572	61578	68427	31082	50331	55414	463403	614942	636619
1.1-2 hectare	16757	22753	24267	9544	8731	9038	155311	174230	175651
2.1-4 hectare	12526	12772	12981	4155	3047	2832	92173	89873	88447
4-10 hectare	5113	4150	3896	824	502	441	36352	30899	29136
More than 10 hectare	530	284	297	43	14	28	5643	3970	3530
Total	74498	101537	109868	46368	62625	67753	752882	913914	933383

Source: Agriculture census H.P.

Table 3.3(A): Different categories of farm households in selected districts over a period of 1990-91, 2000-01, 2009-10

(%)

Particulars	District –Shimla			District –Kullu			State		
	1990-91	2000-01	2010-11	1990-91	2000-01	2010-11	1990-91	2000-01	2010-11
0-1 hectare	53.12	60.65	62.28	67.03	80.37	81.79	61.55	67.29	68.21
1.1-2 hectare	22.49	22.41	22.09	20.58	13.94	13.34	20.63	19.06	18.82
2.1-4 hectare	16.81	12.58	11.82	8.96	4.87	4.18	12.24	9.83	9.48
4-10 hectare	6.86	4.09	3.55	1.78	0.80	0.65	4.83	3.38	3.12
More than 10 hectare	0.71	0.28	0.27	0.09	0.02	0.04	0.75	0.43	0.38
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 3.4: Implements, Infrastructure and institutions in selected districts over years, 1990-91, 2000-01, 2009-10.

Particulars	District -Shimla			District -Kullu			State		
	1990-91	2000-01	2010-11	1990-91	2000-01	2010-11	1990-91	2000-01	2010-11
Tractors (no)							3466	4205	6966
% of villages electrified	100	100	100	100	100	100	100	100	100
Electric operated tube wells (No.)	-	-	-	-	-	-	2530	7325	2681
Motorable road (KM)	-	4103	4461	-	945	1333	22445	27217	32926
% of villages connected with roads	60	70	72	45	65	70	60	65	70
Bank Offices	120	133	157	60	80	92	723	784	1105
Post office	280	300	325	140	148	157	2550	2745	2777
Co-operative society	300	440	495	120	126	131	3200	3900	4489
Existence of KGK/KVK									
Ag. Produce Market	-	-	10	-	-	7	-	-	44
MIS procurement centre	-	239	259	-	-	67	-	-	-

Source: Statistical outline of H.P.

Table 3.5: Net area irrigated with alternate source of irrigation for selected district over a Period of 1990-91, 2000-01, 2009-10.

Particulars	District –Shimla			District -Kullu			State		
	1990-91	2000-01	2010-11	1990-91	2000-01	2010-11	1990-91	2000-01	2010-11
Tube-well	-	-		1	-	0	1454	2061	17432
Canals	-	-		2118	2905	2378	-	-	4046
Tanks	-	1		-	0	0	1404	758	283
Others	4485	-			-	-	99457	105641	8691
% of irrigation	5.8	4.3	-	4.2	5.7	-	17.7	18.4	

Source: Statistical outline of H.P. and Agriculture census of H.P.

Table 3.6: Area (ha) under different crops in studied districts for selected years

Crops	1980-82 (Avg.)	1990-92 (Avg.)	2000-02 (Avg.)	2008-09	2009-10	2010-11
Shimla						
Rice	5649	3430	2923	N.A.	N.A.	N.A.
Maize	22118	20705	16685	-	-	-
Wheat	35493	29684	19758	-	-	-
Total cereals	82287	65194	50512	-	-	-
Pulses	4818	7205	5544	-	-	-
Food grains	87105	72399	56056	-	-	-
Fruit	12370	12133	28758	-	-	-
Vegetable	9337	9884	13135	-	-	-
Food crops	109120	105937	98486	-	-	-
Oil seed	495	1056	1131	-	-	-
Non-food crops	515	1070	1134	-	-	-
Total cropped area	109635	107020	99620	-	-	-
Kullu						
Rice	3133	2571	1719	N.A.	N.A.	N.A.
Maize	15081	17671	14809	-	-	-
Wheat	19196	22855	21172	-	-	-
Total cereals	46162	48092	42430	-	-	-
Pulses	3117	3743	2816	-	-	-
Food grains	49281	51835	45246	-	-	-
Fruit	4229	6991	8829	-	-	-
Vegetable	1460	1840	2472	-	-	-
Food crops	55159	60852	56817	-	-	-
Oil seed	561	760	621	-	-	-
Non-food crops	721	989	694	-	-	-
Total cropped area	55880	61761	57511	-	-	-

Source: District Agriculture Plan Shimla & Kullu H.P.

Chapter 4

DEMOGRAPHIC PROFILE OF STUDY BLOCKS

The present chapter deals with the demographic and agro-economic details of the developmental blocks of the selected districts, Shimla and Kullu.

Demographic Features of study Blocks

District Shimla: In Shimla district there are 10 blocks as mentioned in Table 4.1 A. Among these ten blocks Theog and Narkanda have been selected for detailed study. Table shows that 9.17 percent of the geographical area of the district is accounted by Theog block which just half in Narkanda block. The number of inhabited villages has been recorded to be 400 in Theog as compared to 166 in Narkanda block which is 15.87 and 6.59 percent of the total villages of the district. The block wise distribution of rural and urban population was not available but as discussed earlier about 76 and 92 per cent of the population is residing in rural areas in Shimla and Kullu district respectively. The distribution of male and female population shows that at overall level the percentage of female population was 47.27 percent in the district Shimla. In this block the ratio of female population was 49.03 and 49.16 percent in Theog and Narkanda block respectively.

The literacy level was 87.5 and 88.8 percent among male in Theog and Narkanda respectively which was 87.1 at district level as a whole. In this comparison the percentage of female literacy was 76.6 and 70.3 among female in Theog and Narkanda block respectively. At overall level the male, female and total literacy was into 87.1, 70.0 and 79.1 respectively in the district as a whole.

District Kullu: In Kullu district there are 5 blocks viz Kullu, Nagar, Banjar, Anni and Nirmand (Table-4.1 B). Among these blocks Kullu and Nagar have been selected for the study. The proportion of the geographical area have been recorded 148.95; 102.00 and 496.86 hectare in Kullu and Nagar blocks and district as a whole respectively. In percentage term it accounted 29.98 and 20.53 percent in Kullu and Nagar block respectively of total area of the district. Table shows that the number of inhabited villages was 50 and 37 in Kullu and Nagar blocks respectively. In percentage terms these accounted for 29.07 and 27.51 percent of the total villages of the district as a whole. This table also shows that the number of villages in Kullu block is higher as compared to that of other blocks of the district. Similarly the share of

population was high in Kullu block as compared to others. The proportion of female has been 48.47 percent in the district which figure was 47.88 and 48.26 percent in Kullu and Nagar blocks respectively. In all the cases the percentage of females was less than 50 percent.

The percentage of literacy among female section of the society has been recorded to be 59 percent in Kullu district which was 59.41 and 62.08 respectively in Kullu and Nagar block. The male literacy percentage was more than 80 per cent in all situations.

Land Use Classification

In land use classification the block wise data is not available in Directorate of Land Record as per the format. The data pertaining to area sown more than once and gross cropped area was not available. In this concern it may be stated that majority of cropped area in study districts as well as block is under apple, plantation crop, and therefore there is expectation of area sown more than once to be quite low. Due to hilly topography land put to non-agriculture has shown a significant role (Table 4.2). At overall level out of total geographical area 5.26 percent of area of total land has put into non-agriculture uses in district Shimla as whole. The said percentage varies between 3.51 and 2.84 percent in Theog and Narkanda blocks. In case of net area sown it has been worked out by deducting area under land put into non- agriculture uses. In case of district Kullu the area put to non-agriculture uses accounts 14.88 percent of the geographical area in the district as a whole. The said figures were 25.00 and 8.67 percent in Kullu and Nagar blocks respectively. The high percentage of land put to non-agriculture uses in Kullu block is because the reason that majority of the land in this block belongs to hilly terrain where cultivation is not possible.

Different Category of Farms:

Since block wise data is not available for number of different types of holdings, therefore, only district wise figures have been presented in table 2.10. In this concern detail discussion has been made in table 4.3 where 80 to 90 percent of the holdings belong to small and marginal farmers in all the blocks of district Shimla and Kullu.

Implements, Infrastructure and Institutions

The number of implements, infrastructure and institutions has been presented in Table 4.4 in which it may be seen that number of tractors and tube wells are missing. In this concern it may be noted that both the districts are hilly and feasibility of tractors and tube wells is insignificant

in different blocks and district as a whole. Block wise information's presented in the table reveals that 100 percent of the villages have been electrified in the district as well as in the blocks. It is a matter of satisfaction that despite very difficult and mountainous terrain almost all the inhabited villages in the state have been electrified. The block wise data on motor-able road is not available but at overall level only 15.19 percent road length is available for heavy vehicles in district Shimla. This percentage is only 5 percent in Kullu districted. The low percentage of motorable road length in both the district is due to the fact of mountainous terrain where density of population is quite low. However, percentage of villages connected with road has shown increasing trend. Table shows that in Shimla district 59 percent of the villages have been connected with road. These percentages were 75 and 60 percent for Theog and Narkanda blocks of Shimla district respectively. Similarly in Kullu district 53 percent of the villages have been connected with road and this percentage was 70 and 60 percent respectively for Nagar and Kullu blocks.

Further table shows that at overall level 232 branches of banks have been operating in Shimla district out which 8 and 9 percent of the bank offices have been located in Theog and Narkanda block respectively. In case of Kullu district there have 48 bank offices operating in the district out of which the percentage share of Kullu and Nagar blocks was 20 and 33 percent respectively. Both the districts are the producers of cash crops like fruit and vegetable hence, role of different banks has been important in both the districts. The concentration of number of post offices is higher as compared to banks. Co-operative societies are present in significantly higher numbers in both the districts may be due to the reason of higher involvement of local people and confidence in the concept and functioning of the society.

Presently 69 agriculture produce markets have been operating in Shimla district out which 3 and 1 markets are working in Theog and Narkanda block respectively. In Kullu district the number of these markets has been 7 out which one in each block is operating in study blocks of Kullu and Nagar. Presently 47 and 45 centres of MIS procurement have been operating in study blocks of Shimla and Kullu respectively.

Net Area Irrigated

Net irrigated area presented in Table 4.5 indicates that there has been no irrigation in selected blocks of district Shimla whereas this area was 794 Ha in Nagar block and 1186 Ha in Kullu blocks of district Kullu.

Cropping Pattern in Shimla

Block wise cropping pattern has been presented in Table 4.6 (A) in which it may be seen that broadly the cropping pattern includes all type of crops; cereal crops, spices and condiments, vegetables, fodder and other crops. It may be observed that out of total cropped area in the district 75.60 percent was under total food crops followed by vegetables 22.39 per cent. These percentages were 53.06 and 46.33 percent respectively in Theog block. In this comparison the Narkanda block had slightly different position with 85.67 and 12.23 percent area belonging to total food and vegetable crops respectively. This shows concentration of vegetable crops is about 4 times higher in Theog as compared to Narkanda block. The higher difference between total food crops in Narkanda block may be due to reason that in Narkanda block wheat is grown in 929.00 hectares as compared to 265 hectare in Theog block. Similarly, pulses were grown in 327 hectares in Narkanda block whereas it was grown only on 147 hectares of land in Theog block. Total food crops include maize, paddy, wheat, barley, ragi, minor millets, pulses and potato. Whereas vegetable crops includes pea (green) tomato, cabbage, cauliflower, French bean, capsicum/chillies, lady finger, brinjal, cucurbits, onion, radish/turnip and others. Area under horticulture crops has been included in 'others' accounting for 410 hectares in all and 50 and 25 hectares in Theog and Narkanda blocks respectively.

Cropping Pattern in Kullu

Regarding cropping pattern of district Kullu the details have been presented in Table 4.6 (B). In this table it may be observed that out of total cropped area of the district cereals, account for 51.14 percent which figures were 65.34 and 30.07 percent in Kullu and Nagar blocks of district Kullu. Further table shows that the cropping pattern of district Kullu is mainly constituted by cereals and fruits cultivation, not only in district as a whole but also in individual study blocks. In Kullu and Nagar blocks, area under cereals was recorded to be 65.34 and 30.07 percent respectively and it accounted for 51.14 percent in district as a whole. Comparatively, the area under cereal crops was very low in Nagar block. It is due to the reason of highest (54.78%) area under fruit crops in Nagar block. The percentage of area under fruits was 19.28 per cent in Kullu block and 29.60 percent in district as a whole. This shows that in cultivation of fruits Kullu block and Shimla districts are far behind as compared to Nagar block. Further, table shows that area under vegetable which was in third place of cropping pattern was 9.74 and

6.48 percent respectively in Kullu and Nagar block whereas the this percentage was 9.06 percent in district as a whole.

Status of apple procurement

The procurement centres are established for the duration of procurement at different locations in all the apple producing areas. The details of these centers established in different apple producing districts along with quantity procured during the production season of the year 2010 has been presented in table 4.7.

Storage and processing capacity:

Unlike cereals etc, the storage of fruit requires cold storing of the produce. This is a capital intensive venture and consequently there are only nine cold stores in the state used for storing not only apple but other perishable agricultural/horticultural commodities. These include five cold stores in producing areas with 1000 MT capacity each. In addition to this there is a cold store at Parwanoo with a capacity of 3000 MT and three cold stores located in markets with a total capacity of 8250 MT. All these centers were opened prior to the year 1981, indicating absence of any effort in this direction for a long time now. There are three transit warehouses for short term storage but these are not cold stores.

The department of Horticulture of Himachal Pradesh has eight fruit processing centers located on each in districts of Shimla, Kangra, Chamba and Kinnaur and two each in districts of Kullu and Sirmour. These eight processing centers have an installed capacity of 1800 MT per year. The Horticulture Produce Processing and Marketing Corporation has two processing centers located at Jarol in district Mandi and Parwanoo in district Mandi with combined capacity of 29000 MT. There are a number of fruit processing units in cooperative sector and private sector etc with a combined processing capacity of 52860 MT. Thus, the state has a total processing capacity of 83160 MT of fruit per year.

Table 4.1: A. Demographic features of sampled blocks vis-a-vis district Shimla

Particulars	Mashobra	Theog	Narkanda	Rampur	Jubbal Kotkhai	Roharu	Choohara	Chopal	Basantpur	Nankhari	District
Geographical area	410.25	470.81	231.41	826.25	447.22	298.76	523.06	853.63	285.80	560.61	5131.00
No. of inhabited villages (no)	490	400	166	153	303	166	127	353	276	86	2520
Total Population (00's)	75136	74200	39664	66373	65309	50870	45177	74903	38283	25154	722502
Rural Population (00's)	-	-									
Urban population (00's)	-										
Male Population (00's)	39593	37816	20267	35383	33436	26057	23158	38435	18555	12605	380996
Female Population (00's)	35543	36384	19597	30990	31873	24813	22019	36468	19728	12549	341506
Male literacy (%)	90.8	87.5	88.8	84.9	85.6	83.4	73.2	78.1	86.1	84.9	87.1
Female literacy (%)	76.6	70.6	70.3	64.1	63.7	58.0	46.8	59.2	68.7	64.9	70.0
Total literacy %	84.2	79.2	79.8	75.8	74.9	70.9	60.3	68.9	77.1	75.1	79.1

Source: Statically abstract of Shimla & Kullu district H.P.

Table 4.1: B. Demographic features of selected blocks vis-a-vis district Kullu

Particulars	Kullu	Nagar	Banjar	Anni	Nirmand	District
Geographical area	148.95	102.00	90.14	78.42	77.45	496.86
No. of inhabited villages (no)	50	37	42	17	26	172
Total Population (00's)	114240	87080	51765	50476	47917	351478
Rural Population (00's)	-	-	-	-	-	-
Urban population (00's)	-	-	-	-	-	-
Male Population (00's)	59542	45056	26228	25722	24583	181131
Female Population (00's)	54698	42024	25537	24754	23334	170347
Male literacy (%)	84.36	84.03	83.04	81.78	80.75	83.22
Female literacy (%)	59.41	62.08	57.60	57.16	56.64	59.00
Total literacy %	72.43	63.81	70.51	69.70	69.06	71.55

Source: Statistical abstract of Shimla & Kullu district of H.P.

Table 4.2: Land use classifications of sampled blocks in both districts

(Ha.)

Particulars	Mashobra	Theog	Narkanda	Rampur	Jubbal Kotkhai	Roharu	Choohara	Chopal	Basantpur	Nankhari	District
Shimla											
Geographical area	41025	47547	23812	125482	53416	29408	77113	58546	27565	26079	509995
Land put to non agriculture uses	13116	1669	676	2080	2021	1322	2818	600	450	2080	26832
Net area sown	27909	45878	23136	123402	51395	28086	74295	57946	27115	23999	483163
Area sown more than once	-	-	-	-	-	-	-	-	-	-	-
Gross cropped area	-	-	-	-	-	-	-	-	-	-	-
Kullu											
	Kullu	Banjar	Nagar	Ani	Nirmand	-	-	-	-	-	District
Geographical area	19244	9122	8115	7853	6591	-	-	-	-	-	56925
Land put to non agriculture uses	4810	1578	704	940	430	-	-	-	-	-	8468
Net area sown	14434	7544	7411	6913	6161	-	-	-	-	-	48457
Area sown more than once	-	-	-	-	-	-	-	-	-	-	-
Gross cropped area	-	-	-	-	-	-	-	-	-	-	-

Source: District Agriculture plan Shimla & Kullu H.P.

Table 4.3: Different categories of farm households (no.) in sampled blocks of selected districts

Size of Farm	Mashobra	Theog	Narkanda	Rampur	Jubbal Kotkhai	Roharu	Choohara	Chopal	Basantpur	Nankhari	District
Shimla											
0-1 hectare	-	-	-	-	-	-	-	-	-	-	61578
1.1-2 hectare	-	-	-	-	-	-	-	-	-	-	22753
2.1-5 hectare	-	-	-	-	-	-	-	-	-	-	14688
5.1-10 hectare	-	-	-	-	-	-	-	-	-	-	2234
More than 10 hectare	-	-	-	-	-	-	-	-	-	-	284
Total	-	-	-	-	-	-	-	-	-	-	101537
Kullu											
0-1 hectare	-	-	-	-	-	-		-	-	-	50331
1.1-2 hectare	-	-	-	-	-	-	-	-	-	-	8731
2.1-5 hectare	-	-	-	-	-	-	-	-	-	-	3322
5.1-10 hectare	-	-	-	-	-	-	-	-	-	-	227
More than 10 hectare	-	-	-	-	-	-	-	-	-	-	14
Total	-	-	-	-	-	-	-	-	-	-	62625

Source: Agriculture census 2001.

Table 4.4: Implements, Infrastructure and Institutions (no.) in sampled blocks of selected districts

Particulars	Mashobra	Theog	Narkanda	Rampur	Jubbal Kotkhai	Roharu	Choohara	Chopal	Basantpur	Nankhari	District
Shimla											
Tractors (no)											
% of villages electrified	100%	100%	100%	100%	100%	100%	100	100	100	100	100
Electric operated tube wells (No.)	0	0	0	0	0	0	0	0	0	0	0
Motorable road (KM)	-	-	-	-	-	-	-	-	-	-	5054
% of villages connected with roads	70	75	60	55	80	60	40	45	55	50	59
Bank Offices	12	19	21	23	28	16	7	16	9	6	232
Post office	39	47	29	39	49	25	13	38	33	13	352
Co-operative society	54	65	61	48	92	42	38	43	25	27	636
Existence of KGK/KVK	1	-	-	-	-	1	-	-	-	-	2
Ag. Produce Market	1	3	1	1	0	2	0	1	0	0	69
MIS procurement centre	2	17	30	22	47	34	16	21	0	18	207

Kullu											
	Kullu	**Nagar**	**Banjar**	**Anni**	**Nirmand**	**District**	-	-	-	-	-
Tractors (no)	-	-	-	-	-	-	-	-	-	-	-
% of villages electrified	100%	100%	100%	100%	100%	100%	-	-	-	-	-
Electric operated tube wells (No.)	0	0	0	0	0	0	-	-	-	-	-
Motorable road (KM)	1	1	-	-	-	2	-	-	-	-	1661
% of villages connected with roads	70	60	40	45	50	53	-	-	-	-	-
Bank Offices	10	16	5	9	8	48	-	-	-	-	-
Post office	32	30	35	17	19	133	-	-	-	-	-
Co-operative society	177	140	58	67	59	501	-	-	-	-	-
Existence of KGK/KVK	-	-	-	-	-	-	-	-	-	-	-
Ag. Produce Market	3	1	1	1	1	7	-	-	-	-	-
MIS procurement centre	10	35	10	16	6	77	-	-	-	-	-

Source: Statistical abstract and village directory of respective districts.

Table 4.5: Net area irrigated with alternate source of irrigation (in ha) in selected blocks of both districts

Source	Mashobra	Theog	Narkanda	Rampur	Jubbal Kotkhai	Roharu	Choohara	Chopal	Basantpur	Nankhari	District
Shimla											
Tube-well	-	-	-	-	-	-	-	-	-	-	-
Canals	-	-	-	-	-	-	-	-	-	-	-
Tanks	-	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-	-
Total	167	-	-	358	76	-	728.12	117	208	-	1654.12
Kullu											
Tube-well	Naggar	Kullu	Sanj	Banjar	Anni	Nirmand	-	-	-	-	-
Canals	-	-	-	-	-	-	-	-	-	-	-
Tanks	-	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-	-
Total	794	1186	44	-	124	-	405	-	-	-	2553

Source: Statistical abstract Kullu district of H.P.

Table: 4.6 A. Cropping Pattern in Shimla District, 2007-08 (Hectares)

Crops	Basantpur	Chirgaon	Chopal	Jubbal	Mashobra	Nankhari	Narkanda	Rohroo	Rampur	Theog	District
Food crops	4959.00	6576.00	9389.00	896.00	5575.00	896.00	1842.00	1616.00	4516.00	1575.00	37840.00
Maize	2403.00	577.00	3223.00	191.00	2946.00	319.00	673.00	729.00	1039.00	1140.00	13240.00
Paddy	73.00	510.00	378.00	105.00	13.00	172.00	81.00	83.00	366.00	0.00	1781.00
Wheat	2173.00	2329.00	3084.00	336.00	2158.00	236.00	929.00	500.00	2125.00	265.00	14125.00
Barley	303.00	895.00	1157.00	102.00	450.00	129.00	154.00	301.00	603.00	170.00	4264.00
Ragi/Kodo	2.00	453.00	473.00	78.00	1.00	0.00	5.00	25.00	84.00	0.00	1121.00
Minor millets	5.00	1812.00	1074.00	84.00	0.00	40.00	0.00	18.00	309.00	0.00	3342.00
Pulses	291.00	278.00	837.00	136.00	123.00	559.00	327.00	377.00	1271.00	147.00	4346.00
Black gram, gram, mash	83.00	78.00	525.00	98.00	76.00	274.00	120.00	176.00	244.00	111.00	1785.00
Gram,red gram, masur, Kulthi	208.00	200.00	312.00	38.00	47.00	285.00	207.00	201.00	1027.00	36.00	2561.00
Other food crops(potato)	42.00	680.00	460.00	404.00	173.00	231.00	79.00	2372.00	419.00	469.00	5329.00
Total food crops	5292.00	7534.00	10686.00	1436.00	5871.00	1686.00	2248.00	4365.00	6206.00	2191.00	47515.00
Spices and condiments	51.00	0.00	53.00	0.00	196.00	0.00	31.00	0.00	5.00	1.00	337.00
Ginger	29.00	0.00	20.00	0.00	165.00	0.00	0.00	0.00	0.00	0.00	214.00
Garlic	1.00	0.00	10.00	0.00	5.00	0.00	0.00	0.00	4.00	0.00	20.00
Coriander	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chillies	21.00	0.00	23.00	0.00	26.00	0.00	31.00	0.00	1.00	1.00	103.00
Non food crops (oil seeds)	49.00	13.00	305.00	44.00	68.00	8.00	16.00	67.00	102.00	16.00	688.00
Vegetables	646.00	1100.00	1256.00	433.00	1745.00	252.00	321.00	384.00	702.00	1913.00	14073.00
Pea (green)	200.00	884.00	628.00	147.00	702.00	67.00	100.00	100.00	372.00	1000.00	4200.00
Tomato	20.00	5.00	200.00	12.00	325.00	5.00	5.00	50.00	50.00	28.00	700.00
Cabbage	200.00	104.00	108.00	100.00	141.00	100.00	136.00	100.00	68.00	42.00	1750.00
Cauliflower	10.00	20.00	94.00	100.00	25.00	5.00	5.00	5.00	31.00	125.00	42.00
French bean	35.00	8.00	52.00	20.00	120.00	20.00	20.00	40.00	25.00	110.00	450.00
Capsicum/chillies	30.00	7.00	39.00	20.00	78.00	15.00	15.00	20.00	53.00	148.00	425.00
Lady finger	4.00	4.00	1.00	1.00	4.00	1.00	1.00	1.00	4.00	4.00	25.00
Brinjal	5.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	6.00	2.00	20.00
Cucurbits	40.00	6.00	20.00	5.00	1.00	5.00	5.00	11.00	34.00	10.00	140.00
Onion	10.00	5.00	25.00	2.00	6.00	2.00	3.00	5.00	4.00	2.00	64.00
Radish/turnip	30.00	16.00	30.00	5.00	25.00	5.00	5.00	10.00	10.00	14.00	140.00
Others	62.00	40.00	58.00	20.00	35.00	25.00	25.00	50.00	45.00	50.00	410.00
Fodder crops	5.00	2.00	4.00	2.00	3.00	2.00	2.00	3.00	3.00	2.00	28.00
Oats	2.00	2.00	2.00	2.00	3.00	2.00	2.00	3.00	2.00	2.00	22.00
Berseem	3.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	6.00
Other crops	54.00	41.00	71.00	6.00	6.00	6.00	6.00	8.00	9.00	6.00	213.00
Total cropped area	6097.00	8690.00	12375.00	1921.00	8502.00	1954.00	2624.00	4827.00	7027.00	4129.00	62854.00

Note: Other crops include flower, medicinal herbs/plants, tobacco, turmeric, coriander, etc.
Source: District Agriculture plan Shimla & Kullu H.P.

Table: 4.6 B. Cropping Pattern in Kullu District for the year 2007-08

(Ha.)

Crop	Kullu	Banjar	Naggar	Ani	Nirmand	District
Cereals	17220.9	7526.76	5617.6	4135.48	6537.16	41037.9
Maize	7557.9	4621	232	1511.8	2114	16036.7
Paddy	112	50	480	128	859	1629
Wheat	9009.9	2459.4	4516.8	2382.4	3438.06	21806.56
Barley	541.1	396.36	388.8	113.28	126.1	1565.64
Pulses	800.2	1773.26	1197	569.1	703.6	5043.16
Mash	284	239.76	184	163.5	353.6	1224.86
Rajmash	412	1335.5	896	325.6	245	3214.1
Other pulses	104.2	198	117	80	105	604.2
Oilseeds	407.4	212.48	173.7	198.6	204.32	1196.5
Mustard	107.8	77.28	86.2	73.3	58.3	402.88
Other oilseeds	299.6	135.2	87.5	125.3	146.02	793.62
Vegetables	2566.1	1572.25	1212.3	1105.06	813.72	7269.43
Potato	662.2	241.56	24	237.76	118	1283.52
Peas	380	321	256	204	132.5	1293.5
Tomato	477.8	92.88	106.8	42.8	56.68	776.96
Cabbage	228	266.25	200.4	166	125.48	986.13
Cauliflower	198.7	179.56	258.4	182.2	127.3	946.16
French bean	74.2	79.2	58.5	36	41.6	289.5
Capsicum	49	59.2	34.1	12.2	20.8	175.3
Bhindi	53.2	17.5	28.9	13.8	20.8	134.2
Brinjal	115.5	102	86	34	33.02	370.52
Cucurbits	39.2	22	28	12	4.94	106.14
Onion	44.8	55	42	18	26	185.8
Radish	140	54	44	76.8	52	366.8
Others	103.5	82.1	45.2	69.5	54.6	354.9
Fodder crop	12.5	8.5	12.3	5.6	8.9	47.8
Fruits	5082	3786.48	10233.7	1696.28	2948.62	23747.08
Apple	3969	2610.36	8901.2	1361.28	2700.62	19542.46
Citrus	-	-	-	-	10.4	10.4
Mango	-	-	-	-	31.2	31.2
Plum	225	168.84	66.5	110	25	595.34
Apricot	300	250	225	100	-	875
Pear	168	431.28	761	-	104	1464.28
Kiwi	50	20	16	-	-	86
Pomegranate	70	56	39	25	15	205
Peach	300	250	225	100	62.4	937.4
Spices	263.1	691.8	233.2	437.56	270.8	1896.46
Garlic	209.2	617.4	204.4	404.16	245.6	1680.76
Coriander	28.6	29.8	10.3	11.1	8.3	88.1
Chillies	25.3	44.6	18.5	22.3	16.9	127.6
Total cropped area	26352.2	-	18679.8	-	-	80238.33

Source: District Agriculture plan Shimla & Kullu H.P.

Table-4.7: Status of apple procurement under Market Intervention Scheme during the year 2010

Name of District	Name of Block	Sr. No.	Name of Centre	Quantity procured	
				In bags (60 kg)	In MT
Shimla	Mashobra	1	Dhalli	692	41.520
			Sub Total	692	41.520
	Theog	1	Cheog	606	36.360
		2	Deha	15279	916.740
		3	Sandhu	7240	434.400
		4	Matiana	1372	82.320
		5	Theog	402	24.120
		6	Palvi	1973	118.380
		7	Dhar	4652	279.120
		8	Mehiana	296	17.760
		9	Ghoond	1616	96.960
		10	Mohari	1747	104.820
			Sub Total	35183	2110.980
	Narkanda	1	Tutu Pani	7980	478.800
		2	Jarol Tikker	11440	686.400
		3	Oddi	6226	373.560
		4	Kareothi	10732	643.920
		5	Narkanda	2865	171.900
		6	Kangal	1218	73.080
		7	Kotighat	1274	76.440
		8	Janjheli	261	15.660
		9	Madhwani	1083	64.980
		10	Kanahar	6323	379.380
		11	Khaneti	1048	62.880
		12	Thanedhar	3665	219.900
		13	Shahtla		0.000
		14	Mailan	314	18.840
		15	Bhareridhar	602	36.120
		16	Kacheenghati	2478	148.680
		17	Pattijubbar	1793	107.580
		18	Shiwan	109	6.540
		19	Kotgarh	895	53.700
		20	Shawat	19	1.140
		21	Saroga	514	30.840
			Sub total	60839	3650.340
	Chopal	1	Chopal	6297	377.820
		2	Nerwa	2310	138.600
		3	Pulbahal	1451	87.060
		4	Rewalpul	4527	271.620
		5	Jhiknipul	1051	63.060
		6	Khagnapul	1695	101.700
		7	Dhabas	1620	97.200
		8	Bharanu	120	7.200
		9	Mashrahan	1136	68.160
		10	Pujarli	7692	461.520

		11	Nanhar	1867	112.020
		12	Maraug	27800	1668.000
		13	Kutangan	1541	92.460
		14	Kiarnoo	886	53.160
		15	Bhabar	5505	330.300
		16	Kupvi		0.000
		17	Kaidi	147	8.820
		18	Matal	3705	222.300
			Sub Total	69350	4161.000
	Jubbal	1	Jubbal	41428	2485.680
		2	Nalia	6255	375.300
		3	Dochi	13334	800.040
		4	Badhal	10999	659.940
		5	Anti	3524	211.440
		6	Batargalu	33187	1991.220
		7	Pauta	20451	1227.060
		8	Baral	25072	1504.320
		9	Chaijpur	28142	1688.520
		10	Nandpur	45439	2726.340
		11	Kuddu	803	48.180
		12	Kharapathar	22575	1354.500
		13	Cheelghat	29932	1795.920
		14	Jachli		0.000
		15	Solang	82	4.920
		16	Zharag	7430	445.800
		17	Patsari	5159	309.540
		18	Nakrari	7936	476.160
		19	Bachannalla	1927	115.620
		20	Bindal-Kainchi	3213	192.780
		21	Pokta	6836	410.160
		22	Santoshinagar	7798	467.880
		23	Ramnagari	12770	766.200
		24	Mandal	11696	701.760
		25	Jhagtan	4003	240.180
		26	Mandhol	11902	714.120
		27	Giltari	13694	821.640
		28	Madot	5782	346.920
			Sub Total	381369	22882.140
	Kotkhai	1	Gumma	8350	501.000
		2	Bakhol	8199	491.940
		3	Shilgiri	4752	285.120
		4	Khaltunalla	6330	379.800
		5	Ramnagar	9317	559.020
		6	Pujarli nalla	6160	369.600
		7	Prem nagar	27127	1627.620
		8	Mahashu	14409	864.540
		9	Tharolla	7039	422.340
		10	Kathandli nalla	4963	297.780
		11	Kiari	10918	655.080
		12	Kotibanni	4900	294.000

		13	Panog	2427	145.620
		14	Kupri nalla	3957	237.420
		15	Tahtoli	3869	232.140
		16	Nihari	5969	358.140
		17	Garoug	9547	572.820
		18	Domehar	5313	318.780
		19	Cheornalla	6927	415.620
		20	Gazta	11034	662.040
		21	Jauni	2927	175.620
		22	Allawang	7182	430.920
		23	Khaneti	8145	488.700
		24	Baghi	31849	1910.940
		25	Ratnari	32591	1955.460
		26	Dhalli	2927	175.620
		27	Dhakal	5535	332.100
		28	Jakrari	13627	817.620
		29	Gartola	3060	183.600
		30	Chaithla	15305	918.300
		31	Pandli	6028	361.680
		32	Chadiana	4499	269.940
		33	Purag	1141	68.460
		34	Chamain	6781	406.860
		35	Kalbog	11396	683.760
		36	Baghal	9964	597.840
		37	Kiarwin	2944	176.640
		38	Reoghati	9294	557.640
		39	Neraghati	8598	515.880
		40	Koferbagh	5982	358.920
		41	Bareon	2450	147.000
		42	Bareonghati	4699	281.940
		43	Darkoti	2381	142.860
		44	Kanwarbagh	8312	498.720
		45	Tahu	7068	424.080
		46	Ballidhar	4441	266.460
			Sub Total	380633	22837.980
	Rohru	1	Rohru	23375	1402.500
		2	Saraindhar	8396	503.760
		3	Dhari Kupper	12115	726.900
		4	Deoli	8670	520.200
		5	Astani	8682	520.920
		6	Kadiwan	5988	359.280
		7	Sharountha	10139	608.340
		8	Bhaloon Kainchi	22335	1340.100
		9	Gujandli Bridge	12987	779.220
		10	Pujarli-4	21949	1316.940
		11	Diarmolispan	5607	336.420
		12	Machoti	14527	871.620
		13	Sarogdhar	4299	257.940
		14	Chapoti	4822	289.320
		15	Saras	6670	400.200

		16	Dalgaon	38507	2310.420
		17	Kutara	11302	678.120
		18	Bashla	13852	831.120
		19	Arhal	17808	1068.480
		20	Summerkot	7446	446.760
		21	Kashaini	6800	408.000
		22	Dhamana	14617	877.020
		23	Melthi	9104	546.240
		24	Tikkar	17718	1063.080
		25	Dhara	9220	553.200
		26	Mandharli	21451	1287.060
		27	Parsa Kainchi	15891	953.460
		28	Deorighat	24119	1447.140
		29	Sidroti	11188	671.280
			Sub Total	389584	23375.040
	Chirgaon	1	Bhatwari	11655	699.300
		2	Ingwala	42194	2531.640
		3	Bartoo	6526	391.560
		4	Badiara	23937	1436.220
		5	Andhra	12723	763.380
		6	Pujarli	25564	1533.840
		7	Dalinalla	10573	634.380
		8	Sandhasu	11996	719.760
		9	Tikkri	10230	613.800
		10	Jangla	5672	340.320
		11	Devidhar	13512	810.720
		12	Dhamwari	10873	652.380
		13	Dodra	1154	69.240
		14	Kawar	7165	429.900
		15	Jakha	325	19.500
			Sub Total	194099	11645.940
	Rampur	1	Gopalpur	13251	795.060
		2	Gharat	8473	508.380
		3	Taklech	1784	107.040
		4	Dansa	369	22.140
		5	Bahli	7679	460.740
		6	Narain	9387	563.220
		7	Dofda	6431	385.860
		8	Ganvi	65	3.900
		9	Palzara	2395	143.700
		10	Kamlahu	68	4.080
		11	Jaguni	600	36.000
		12	Jarasi	5896	353.760
		13	Deothi	2454	147.240
		14	Jaguni	1418	85.080
		15	Nagadhar	5006	300.360
			Sub Total	65276	3916.560
	Nankhari	1	Khadahan	909	54.540
		2	Khooni	1031	61.860
		3	Jahoo (Deem)	2872	172.320

		4	Kholighat	4761	285.660
		5	Gahan	8570	514.200
		6	Jawalda	8597	515.820
		7	Panail	4752	285.120
		8	Khanog	1942	116.520
		9	Majholi Tipper	4959	297.540
		10	Nankhari	12424	745.440
		11	Kungal Balti	9388	563.280
		12	Khamadi	5422	325.320
			Sub Total	65627	3937.620
			Total	1642652	98559.120
Kullu	Naggar	1	Patlikuhl	12290	737.400
		2	Prini	4375	262.500
		3	Manali	6718	403.080
		4	Larankello	1063	63.780
		5	Haripur	3421	205.260
			Sub Total	27867	1672.020
	Banjar	1	Banjar	127	7.620
		2	Bahu	18	1.080
		3	Sainj	79	4.740
			Sub Total	224	13.440
	Kullu	1	Shamsi (Bhuntar)	957	57.420
		2	Garsa	224	13.440
		3	Jari		0.000
		4	Luggaribhatti	778	46.680
		5	Bhutti & Shalani	3192	191.520
			Sub Total	5151	309.060
	Anni	1	Dalash	1273	76.380
		2	Barwin	13520	811.200
		3	Tandi	1349	80.940
		4	Ghorla	180	10.800
		5	Chowai	11260	675.600
		6	Jaon	2183	130.980
		7	Anni	389	23.340
		8	Chimni Kainchi	6632	397.920
		9	Kungush	5825	349.500
		10	Thanog	2700	162.000
		11	Kotaseri	3799	227.940
		12	Ranabagh	747	44.820
		13	Chouni	2223	133.380
			Sub Total	52080	3124.800
	Nirmand	1	Kandagai	9219	553.140
		2	Durah	3288	197.280
		3	Nither	962	57.720
		4	Sagot	1872	112.320
		5	Arsu	17070	1024.200
		6	Remu	116	6.960
		7	Baghipul	3502	210.120
		8	Urtoo	1773	106.380
			Sub Total	37802	2268.120

			Total	123124	7387.440
Mandi	Karsog	1	Chindi	10302	618.120
		2	Seri	12211	732.660
		3	Mahasudhar	7686	461.160
		4	Chhatri	3776	226.560
		5	Charkhari	2703	162.180
		6	Thunag	3517	211.020
		7	Nihri	2525	151.500
			Sub Total	42720	2563.200
	Janjhehli	1	Thachi		0.000
		2	Janjhehli	9640	578.400
		3	Chieuni	4922	295.320
			Sub Total	14562	873.720
	Mandi Sadar	1	Panarsa		0.000
			Sub Total		
	Sundernagar	1	Jarol		
			Sub Total		
	Gohar	1	Chail Chowk	1166	69.960
		2	Bagsaid	15461	927.660
			Sub Total	16627	997.620
			Total	73909	4434.540
Chamba	Chamba	1	Chamba		
	Salooni	1	Salooni		
	Bharmaur	1	Bharmaur		
	Mehla	1	Dharwala		
		2	Gehra		
			Total		0.000
Kinnaur	Kalpa	1	Reckong Peo	4947	296.820
		2	Karcham	1456	87.360
		3	Sangla	1206	72.360
			Sub Total	7609	456.540
	Nichar	1	Nigulsari		0.000
		2	Katgaon	54	3.240
		3	Nichar	2385	143.100
			Sub Total	2439	146.340
			Total	10048	602.880
Lahaul & Spiti	Keylong	1	Udaipur	83	4.980
		2	Shansa	17	1.020
			Total	100	6.000
Sirmour	Rajgarh	1	Rajgarh	61	3.660
		2	Neripul	563	33.780
		3	Taproli	878	52.680
			Total	1502	90.120
Solan	Dharampur	1	Parwanoo		0.000
Kangra	Baijnath	1	Multhan	117	7.020
Grand Total			**259**	**1851452**	**111087.120**

Chapter 5

PROFILE OF SELECTED VILLAGES

Village wise Details of Study Area:

In Shimla district two blocks named Theog and Narkanda have been selected for the study. Further in Theog block three villages named Sandhu, Gowai and Vishri and three villages of Narkanda named Phirnu, Kunthru and Kandyali have been selected for the detail study (Table 5.1). In relation to geographical area of these selected villages table reveals that Sandhu is the largest village and had 173 hectares of land followed by Guwai (139 ha.) and Vishri (80 ha.). On the other hand, in Narkanda block, village Kandyali has largest area of 270 hectare followed by Kunthru (205 ha.) and Phirnu (121 ha.). All the villages of Theog and Narkanda block are situated close to National highway.

These villages are situated at a distance of 40 kms from each other. It has been found that higher area of the villages has direct correlation with level of population level of education. In these villages population and education of male population has been found to be higher. The presence of educational institutions in the selected villages is highly satisfactory with four senior secondary schools and also a degree college. At the same time Shimla, the state capital, is closely situated to selected villages having positive impact on education, employment pattern etc. Raising apple orchards is the main activity of the rural people of selected villages.

Demographic features of study villages in districts Kullu reflects that both the study areas have been situated in the valley areas of the district. One of the clusters of two villages named Katrain and Dhobi of Nagar block and another Jarri and Bradha in Kullu block have been selected for the study. One of the main features of the selected villages is that the elevation of the villages from mean sea level is higher in Kullu cluster as compared to Nagar. Both these village clusters are separated by the river Beas with Nagar cluster of villages being situated at right bank of the river and Kullu block at left bank. The geographical area of the villages under Kullu cluster was 213 Ha in village Katri almost same to the village Dobhi having 222 hectare whereas, it varied from 356 Ha in case of Jarri to 651 Ha under Bradha. Village Bradha is situated at highest elevation among selected villages. This village has hilly terrain and has lower cultivated area and population. Comparatively the population of plain cluster (Nagar) is higher as compared to Kullu cluster. The level of literacy between male and female has low

variance of 4-5 per cent except in case of village Dobhi where this difference was nine per cent. Again raising apple orchards remained the major activity of villagers as in case of Shimla.

Socio-Economic Status of Village Households:

The distribution of holding size of study villages has been presented in Table 5.2 wherein it may be observed that the concentration of marginal farmers (0-1 ha.) has the highest number among different category of farms. The percentage of marginal farms was found to be 74.51; 61.70; 74.43; 44.44; 33.90 and 40 percent in Sandhu, Gowai, Vishri, Phirnu, Kounthru and kandiyali respectively. In villages Firnu, Kounthru and Kandyali though the number of marginal households is comparatively low, at the same time the percentage small farmers is comparatively high. Among all the villages, in village Vishri, there is only one household belonging to the category of large farmers. The number of semi-medium households was also high in villages Kunthru and Kandyali.

The percentage of marginal household was also comparatively high in district Kullu (Table 5.2) and these were 59.96; 60.98; 77.21 and 60.48 percent in Nagar, Dobhi, Jarri and Bradha respectively. In case of small farmers the status of land holding size varied between 24.90; 18.96; 19.96 and 24.16 Ha in Nagar, Dobhi, Jarri and Bradha villages respectively. This percentage varies into 9.96; 12.08; 2.07 and 9.97 among respected villages (1-4) as mentioned in table. The figures indicate that in district Kullu, there is large variation in holding size and there is presence of all the categories, even large farmers which have been missing in the villages of district Shimla.

Land Use Classification:

Land use classification in the selected villages has been presented in Table-5.3 indicating the area under various land uses like lands put to non-agriculture uses, net area sown, area sown more than once and gross cropped area. The geographical area in the villages of district Shimla varied between 80 to 270 hectare whereas, this ranged between 213 to 651 hectares in the villages of district Kullu. Land put to non-agriculture uses varied between 40 to 207 hectares in district Shimla whereas this was between 8 to 62 hectares only in district Kullu. It is also pertinent to add here that presence of forests, barren and pasture land has higher presence in selected villages of Shimla as compared to the villages of district Kullu. It is because of this reason that in the villages of district Kullu, the net area sown remained higher as compared to district Shimla. The discussion concludes that the higher geographical area in

district Kullu coupled with low amount of land used for non-agriculture uses has resulted in higher net area sown. The picture is just reverse in district Shimla where due to high elevations the scope for cultivations is low.

Net Irrigated Area by Different Sources:

Net area irrigated area presented in Table 5.4 reveals that except Katrain village of district Kullu all the villages have tank irrigation. In Katrain, the irrigation is done through flow irrigation system as the topography of the village is plain with sufficient availability of water for irrigation. In Shimla, the only source of irrigation was found to be tanks. The number of these tanks varied from 12 to 25 in the villages of Shimla district. The number of these tanks was generally higher in the villages of Kullu district. This may be due to the reason of higher net area sown in Kullu district as compared to that of the villages of Shimla district, requiring more irrigation and hence higher number of irrigation tanks.

Details of Market, Infrastructure and Institutions

The detail of infrastructure presented in Table 5.5 indicates that there are certain institutions which are present in all the clusters of villages. Among these institutions-primary schools, public schools, primary health centres, post offices and fair price shops have been operating in all the cluster of villages of district Shimla and Kullu. The institutions which are not operating within the villages are Khadi village industries corporation office, factories, farm produce storage facilities agriculture produce market (APMC), polytechnic college and active NGOs and SHGs. There are certain facilities which are only available in the clusters of district Kullu. These include institutions like MIS procurement centre and village markets. Two of the clusters, one in each of the districts, are very close to the agriculture produce market and remaining two clusters needed to carry the produce to a distance of 35 to 40 kms in order to avail the benefit of MIS procurement centres.

Emergence and Importance of Targeted Crop

The area under apple has been presented in Table 5.6 which shows that the area under apple has increased from 19993 Ha to 27931Ha and 35141Ha over the average period of 1980-82; 1990-92 and 2000-02 respectively in Shimla district. This further increased to 32195 Ha during the year 2008-09 and to 35579 Ha during the year 2009-10. Similarly, in district Kullu said the area under apples increased from 11096 Ha to 19675 Ha during the average period of 1980-

82 to 2000-02 with a further increase to 23663 Ha during the year 2008-09 and to 23870 Ha during the year 2009-10. The rate of increase in area under apple has been observed to be high in Shimla district in comparison of Kullu. At the same time the area under apple in district Shimla is almost double as compared to Kullu. This may be due to the reason that geographical area of district Shimla is significantly higher as compared to district Kullu. Further, it may be observed that the rate of increase in area under apple has become slow in both the districts. This has been due to the fact that area under apple orchards is reaching almost saturation stage and there is hardly any area available now for fresh plantations except on marginal areas.

The requisite data regarding the emergence of target crop at block level is not available and hence no analysis could be carried out.

Table 5.1: Demographic Features of Study villages

Particulars	District Shimla					
	Theog			Narkanda		
	Sandhu	Gowai	Vishri	Phirnu	Kounthlu	Kandyali
Geographical area	173	139	80	121	205	270
No. of inhabited villages (no)						
Total Population (00's)	421	284	208	250	253	346
Rural Population (00's)	421	284	208	250	252	346
Urban population (00's)	-	-	-			
Male Population (00's)	150	93	66	84	76	109
Female Population (00's)	103	78	59	66	75	99
Children	168	113	83	100	102	138
Male literacy (%)	84	80	78	82	80	85
Female literacy (%)	76	72	70	78	77	80
District Kullu						
	Nagar block			Kullu block		
	Katrain	Dobhi		Jarri	Bradha	
Geographical area	222	213		356	651	
No. of inhabited villages (no)	-	-		-	-	
Total Population (00's)	3660	1981		3237	2302	
Rural Population (00's)	3660	1981		3237	2302	
Urban population (00's)	-	-		-	-	
Male Population (00's)	1265	701		1025	726	
Female Population (00's)	121	646		912	656	
Children	1174	634		1290	920	
Male literacy (%)	73	68		66	65	
Female literacy (%)	69	59		61	60	

Source: Own Survey

Table 5.2: Socio-economic Status of village households

Village	Marginal (0-1 ha)	Small (1.1-2 ha)	Semi-med. (2.1-4 ha)	Medium (4.1-10 ha)	Large (> 10 ha)	%age of agri. labour household	% age of non agri. working household
District Shimla							
Sandhu	38	6	-	7	-		29.41
Gowai	29	10	4	4	-		27.65
Vishri	35	10	2	1	1		24.48
Pharnu	20	15	8	2	-		31.11
Kunthru	20	25	10	4	-		20.33
Kandalyi	30	25	15	5	-		13.33
District Kullu							
Katri	301	125	50	16	10	-	
Dhobi	222	69	44	18	11	-	
Jarri	410	106	11	3	1	-	0.56
Bradha	251	104	42	13	8	-	0.47

Source: Own survey.

Table 5.3: Land use classification of villages

(ha)

Particulars	SHIMLA DISTRICT					
	Theog			Narkanda		
	Sandhu	Gowai	Vishri	Phirnu	Kunthru	Kandyali
Geographical area	173	139	80	121	205	270
Land put to non agriculture uses	106	103	40	84	157	207
Net area sown	67	36	40	37	48	63
Area sown more than once	2	-	3	-	-	-
Gross Cropped Area	69	36	43	37	48	63
	KULLU DISTRICT					
	Nagar block			Kullu block		
	Katrai	Dobhi		Jarri	Bradha	
Geographical area	222	213		356	651	
Land put to non agriculture uses	62	43		8	56	
Net area sown	160	170		348	595	
Area sown more than once	-	-		-	-	
Gross Cropped Area	160	170		348	595	

Source: Own survey.

Table 5.4: Net area irrigated by different sources in village

(ha)

Village	Canal	Tanks	Well	Electric tube wells	Diesel operated tube wells	Others (specify)
District Shimla						
Sandhu	-	25	-	-	-	-
Gowai	-	36	-	-	-	-
Vishri	-	20	-	-	-	-
Phirnu	-	15	-	-	-	-
Kunthru	-	16	-	-	-	-
Kandyali	-	12	-	-	-	-
District Kullu						
Katrain	42	-	-	-	-	-
Dhobi	-	30	-	-	-	-
Jarri	-	40	-	-	-	-
Bradha	-	34	-	-	-	-

Source: Own survey.

Table 5.5: Details of market and marketed related other infrastructure and institution in/near village cluster

Facility	SHIMLA DISTRICT				KULLU DISTRICT			
	Village cluster-1		Village cluster-2		Village cluster-3		Village cluster-4	
	Available in village or not	If not, then distance (Km)	Available in village or not	If not, then distance (Km)	Available in village or not	If not, then distance (Km)	Available in village or not	If not, then distance (Km)
1.Primary school	Yes	0	Yes	0	Yes	0	Yes	-
2.Public school	Yes	0	Yes	0	Yes	0	Yes	-
3.Primary health center	Yes	0	Yes	0	Yes	0	Yes	-
4.Private medical practitioner	Yes	0	No	3	Yes	0	Yes	-
5.Veterinary dispensary	Yes	0	No	3	Yes	0	Yes	-
6.Govt.Training Centers ITI, polytechnic etc.	Yes No	0 40	No No	12 45	No	20 km	No	45 km.
7.Private Training Center (with trade of training)	Yes	0	No	12	No	20 km	No	45 km.
8.Presence of Khadi and village industries corporation office	No	40	No	28	No	20 kn.	No	45 km.
9.Active NGO or SHGs (No.)	No	40	No	45	No.	20 km.	No	45 km.
10.Nearest motorable road	No	2	No	3	Yes	0	Yes	-
11.Post Office	Yes	0	Yes	0	Yes	0	Yes	-
12.Commercial banks	No	10	Yes	3	Yes	0	Yes	-
13.Co-operative society	Yes	0	No	3	Yes	0	Yes	-
14.Existence of factories	No	50	No	55	No	20 km	No	45 km
15.Farm produce storage facility	No	60	No	35	No	350 km	No	400 km
16.Fair price shop/ration deptt.(No.)	Yes	0	Yes	0	Yes	0	Yes	-
17.Ag. produce market (APMC)	No	35	No	3	No	2 km.	No	40 km.
18.MIS procurement centre	No	2.5	No	3	Yes	0	Yes	0
19.Existence of village market/hat	No	10	No	3	Yes	0	Yes	0

Source: Own survey.

Table 5.6: Emergence and importance of apples in selected districts over the years

(Ha)

District	1980-82 (Avg.)	1990-92 (Avg.)	2000-02 (Avg)	2008-09	2009-10	2010-11
Shimla	19933	27931	35141	32195	35579	-
Kullu	11096	15789	19675	23663	23870	-

Source: Directorate of Horticulture.

Table 5.7: Emergence and importance of apple in selected blocks of district over the years

Blocks	Targeted crops	1980-82 (Avg.)	1990-92 (Avg.)	2000-02 (Avg)	2008-09	2009-10	2010-11
SHIMLA DISTRICT							
Theog	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Narkanda	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
KULLU DISTRICT							
Nagar	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Kullu	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Chapter 6

PERFORMANCE OF MIS IN DISTRICT SHIMLA AND KULLU

On the request of state governments, the Government of India has been implementing the Market Intervention Scheme (MIS) for various horticultural commodities. The main idea behind the scheme is to prevent the distress sales by farmers in case the prices of agricultural commodities fall below the uneconomic levels. In such an eventuality, a pre-determined quantity of the produce is procured at a predetermined price. In Himachal Pradesh, the procurement is effected through the Himachal Pradesh Cooperative Federation (HIMFED) and Himachal Pradesh Horticultural Produce Processing and Marketing Corporation (HPMC).

In order to understand the coverage of MIS across different districts, following analysis has been carried out.

MIS in Different Districts:

Generally procurement of apples, commodity selected under MIS, begins during the month of June but process of selection and arrangements concerning deputation of employees etc begin during the period of April-May. Joint efforts of Directorate of Horticulture and federations (HPMC & HIMFED) are made for deployment of workers in the collection centres.

Commodity procured in different years of study districts has been presented in Table 6.1 which reveals that the highest quantity of apple procured under MIS in district Shimla was during 2010-11 (1643724 bags) followed by 2008-09 (713103 bags) and 2007-08 (380619 bags). In district Kullu highest procurement was during 2007-08 followed by 2010-11 and 2008-09. During study it has been observed that in 2007-08 highest collections of bags have been made in Jarri of Kullu district of the state which is selected area of this study.

Month wise Arrival:

Apple producing areas are situated between the height of 1500 to 2000 meters above MSL and this elevation is further divided into low, mid and high elevations. As the average atmospheric temperatures decline with the height of the place, the maturity of fruit gets delayed due to this reason. Therefore, in low elevation areas harvesting of apple starts in the month of June whereas in mid and high elevation areas, the harvesting periods normally start during July-August. It is the month of August which normally is the peak period of arrivals in

the markets; this is evident from table 6.2. when month wise arrival has been recorded highest in the state. The marketing season is normally over by the end of October. During the peak marketing period of August, the arrival of apples in local markets accounts for about 25 percent whereas the major chunk of about 75 percent is sold in markets situated out of Himachal Pradesh.

Proportion of Procurement:

The proportion of procurement to total market arrival has been presented in Table 6.3. However, the data on market arrival is available only for the year 2010-11 indicating that 10.74 and 20.29 per cent of the culled apple were procured in district Shimla and Kullu respectively during this year. In fact the procurement in 2010-11 was highest during a decade therefore; percentage of culled apple is high in both the study districts. Due to unfavourable climate the proportion of culled remained higher in Kullu district as compared to that of Shimla. Time series data collected from Directorate of Horticulture indicates that after 1986-87 when the scheme was started in the state, the apple procured remained highest in the state as a whole.

Detail of Agriculture Produce Market:

The details from agriculture produce marketing committee have been gathered and presented in table 6.4 indicating that in Himachal Pradesh only two agencies viz HPMC and HIMFED are responsible for procurement and disposal of MIS produce. The marketing system of MIS apple varied between the study districts. In district Shimla, the whole collection of culled apple is sold to APMC at Parwanoo, situated at the boundary line of Himachal and Haryana. The traders of adjoining states like Haryana, Punjab and U.P etc frequent this market for the purchase of culled apple. These traders buy apples procured under MIS, disposed through the auction system conducted by the Federation. In district Kullu, the system is little different. The Federations feed the local markets with the produce, where such traders had already arrived for the purchase of MIS produce.

Information about Targeted Crop:

The requisite data on target crop was available at district level, therefore, discussion omits the block level analysis. The information regarding targeted crop in selected districts has been presented in Table 6.5 indicating that the area under apple has increased from 31329 hectare to 33579 hectare between 2007-08 to 2009-10. The rate of increase in area under apple was

quite low in district Kullu as compared to district Shimla. In Kullu district the area has increased from 23179 hectare to 23870 hectare during this period. The higher increase in area under apple in district Shimla may be attributed to the fact of higher area under apple in this district. It is a matter of serious concern that production of this crop is continuously declining during the period 2007-08 to 2009-10 in both the districts. The productivity of the crop has decreased from 11.15 MT. to 5.12 MT/Ha during 2007-08 to 2009-10 in district Shimla. In case of district Kullu, the productivity has decreased from 6.91 to 2.28 MT/Ha during the same period. This indicates that the productivity of apple in district Kullu is just half of the district Shimla. The decline in apple productivity can be due to the reason of unfavourable weather conditions and also that the new plantations have extended to marginal areas unsuitable for apple production and hence low productivity. Another reason is aging of the plantations. Most of the orchards have long past crossed their peak phase of production period and are now in declining phase. The aggregate impact of these factors has been the fluctuating and declining production levels.

Information Regarding Marketing:

Information regarding marketing of target crop of selected village clusters has been presented in table 6.6. It may be mentioned here that Shimla and Kullu districts have been further divided into Theog and Narkanda clusters/blocks and Nagar and Kullu clusters/block respectively. The area under target crop in Shimla district indicates that Theog cluster has 400 ha area which is just double as compared to other cluster, Narkanda. However, this gap appears to be comparatively narrow in Nagar and Kullu clusters having 377 and 306 hectares respectively.

This table shows that extent of loss through pest and disease was only 5 percent among all the clusters. This was a result of early dropping of fruit or reduction in size of apple and various other infections rendering the fruit to be market unworthy. The other type of loss occurred during the time of transportation of fruit from fields to markets and such loss has been estimated only one percent. This loss generally occurs due to jolts during transportation from field markets and high temperature inside the trucks. During 2011-12, MIS produce has been sold only in Theog and Narkanda clusters of district Shimla, that too in low quantity. But due to low production in the clusters of Kullu combined with the fact that growers prefer to sell the MIS produce in local market as they get immediate payments, no sale has been recorded. Though the government had announced prices at the rate of Rs. 5.25 per quintal for apples procured under MIS, farmers still preferred to sell even at lower prices in local markets as they

could get spot payments for the produce. The percentage of MIS produce recorded 3.29 and 2.60 percent of total production in Theog and Narkanda clusters of district Shimla.

Costs Incurred in Marketing

The details of cost of marketing of MIS produce i.e. apple, has been presented in Table 6.7. As may be seen from the table, there is no marketing cost which has been incurred by producers. This is because of the fact that the State Government provides an assistance of Rs. 130 as handling charges for one quintal of produce and along with Rs. 525 as purchase price for MIS produce to the federations (HPMC and HIMFED). The producer is not obliged to pay any charges to the federations. The federations has to pay the value of produce; labour charges for filling and stitching of gunny bags, storing of produce at collection point, transportation cost to market and loading & unloading of produce in the field as well as in the markets. It is very clear that federations have to spend handing charges within the granted amount of rupees 130 per qtl. Generally, the average cost has been found to be Rs. 25 for labour charges (filling and stitching and carriage up to collection point), Rs. 80 for transportation cost and Rs. 25 for loading & unloading in the field and market points.

Cost of Cultivation of Apple

The input output detail of cost of cultivation has mentioned in table 6.8 which reveals that expected time of plantation of apple plant is Jan. to Feb. and the nursery area required for one hectare of land is about 0.01 hectare. Land preparation cost for digging and filling of pits has been estimated to be Rs. 19477 for one hectare of land. The cost of plants of apple is about Rs. 10000 per hectare and the quantity of FYM required is about 1.1 metric tonnes for one hectare of land. Further table shows that about 25 kg of fertilizer and nutrients are required for one hectare orchard. Out of total quantity of fertilizers, about 10 kg. of urea; 10 kg of DAP and 5 kg of other fertilizers are needed for the optimum growth of plant. Though numbers of sprays of pesticides are required at maturity of the plant but at initial stage Dythine DM-45 in the ratio of 100 gms and copper oxchloride of 300 gms are sufficient. There is a need of irrigation from Jan. to March which requires about 22000 litres of water during this period. As per revenue records, about Rs. 23750 is the land rent for one hectare of land. The harvesting period of the crop is usually from June to October, whereas, the expected quantity of produce in the maturity of crop vary between 100-150 quintal of apple from one hectare of land.

Coverage of Farmers under MIS

The details of coverage of farmers under MIS (Table 6.9) indicate that 100 percent of the targeted apple growers have been benefited from the scheme in both the districts. In district Shimla, there were 332 targeted apple growers located in six village clusters whereas the number of targeted apple growers in district Kullu was 1815 located in four village clusters. During field survey it was observed that MIS operation launched in large scale, in all those areas where majority of the farmers had offered their produce to be procured under MIS. It will also be pertinent to add here that MIS has proved to be a successful scheme in Himachal Pradesh.

Assets of Sample Farmers

This analysis has been presented separately for District Shimla and Kullu.

District Shimla: The analysis of assets owned by the sample farmers of district Shimla, presented in Table 6.10 (A) reveals that none of the farmers has leased in or leased out land. The average size of land is about one hectare in Narkanda block which is just double in Theog block. The higher size of land holding in Theog is partially due to the reason of presence of medium and large farmers in this block pulling up the average land holding size. These category of farmers are absent in Narkanda block. All the area of land holdings of all the categories was found to be under apple orchards. The area presented under crop cultivation is the area of orchard intercropped with the field crops. As such there is no area purely under field crops. This is a strategy to optimize the land use and enhance their farm incomes. The percentage of land under irrigation varies between about 5 to 10 per cent of the total land holding and invariably tanks are the only source of irrigation. Among assets of sample farms have milch animal whose number varies between 2 and 13 per household. The average number of milch cattle per household was about 7 in Theog and about 10 in Narkanda. Further, table shows that each of the farmers has its own house and there was complete absence of tractors and pump sets with the sample households.

District Kullu: The assets of sample farmers of district Kullu have been presented in Table 6.10 (B) shows that average size of holding size was 2.01 and 1.63 Ha in Nagar and Kullu blocks respectively. Like in district Shimla, the system of leasing-in and leasing-out system of land is completely absent in both the blocks. There is also a complete absence of field crops among the sampled farmers and depended completely on orchards for their sustenance. The

system of inter-cropping the apple orchard with field crops is also absent in this district. In comparison to district Shimla the extent of irrigation is significantly higher in this district mainly because of the fact that majority of cultivated lands are in valley areas with plenty of water for irrigation. This scenario has led to an ideal situations in some cases where the irrigated area as exceeded the unirrigated. The possession of milch animals varies between 2 to 3 animals in both the blocks which is comparatively higher as compared with district Shimla. Each family owns a house but as in case of district Shimla and there is hardly any scope for use of tractors and the sampled farmers also do not own the pump sets.

Borrowings of different Category of Farms

Borrowings made by different categories of sample farmers have been presented in Table 6.11wherein it may be observed that each category had outstanding loans drawn from commercial banks. At overall level per farm average loan borrowed has been Rs. 4.4 and 3.2 lacks per farm in Theog and Narkanda blocks of district Shimla respectively. In comparison borrowings of Nagar and Kullu block of district Kullu had been Rs. 1.62 and 2.51 lacks at per farm. These shows the 'per farm' borrowings were almost double in district Shimla as compared to district Kullu. This may be due to the reason that in district Shimla the crop loans are for both, fruit and vegetable crops, whereas it is only for fruit cultivation in district Kullu. The rate of interest is lowest as compared to other loans. Due to lower rate of interest the marginal and small farmers had also become interested in loans.

Cropping Pattern of Study Districts

Cropping Pattern of study districts has been presented in table 6.12 showing that there is a system of intercropping the apple orchards with field crops in Theog and Narkanda block of district Shimla. In Theog block, orchardists grow cauliflower, capsicum, peas and cabbage whereas; in Narkanda only pea crop is cultivated in apple orchards. Though, these vegetable crops are labour and capital intensive but have proved to be good diversification strategy for risk aversion and income augmentation. This is especially true when apple crop is not up to desired level or the market for apple crashes or does not offer good prices. Comparatively area under vegetable crops was slightly less during 2011-12 as compared to 2010-11. It may be due to effect of crop rotation or to some extent availability of required family and hired labour. In Narkanda block cropping pattern indicates that same crops, pea, was repeated on the same

area. In case of district Kullu orchardists are solely dependent on apple crop in both the study blocks.

Production Costs of Targeted Crop

Production cost presented in table 6.13 reveals that per hectare land preparation cost in apple orchards was less in Kullu block as compared to Shimla due to comparatively flatter terrain. The cost of land preparation varied between Rs. 15 to 17 thousand per hectare in district Kullu whereas, this cost was Rs. 17 to 18 thousand in district Shimla. The topography of Nagar block is plain in nature when compared to other three blocks hence; land preparation cost was lowest (Rs.15798) in this block. In fact the block situated in hilly terrain need more labour for levelling of fields which are generally damaged during due to monsoon rains.

Further, the table indicates that per hectare costs of material (seed, fertilizers and chemicals) were higher in district Kullu when compared to district Shimla. In districts Kullu material costs were Rs. 28058 and 33153 in Nagar and Kullu blocks respectively which was only Rs.12639 and Rs. 11470 in Theog and Narkanda blocks of district Shimla, respectively.

The lower rate of costs in district Shimla are due to the fact that fertilizers and pesticides applied to intercropped vegetables i.e. cauliflower, capsicum and cabbage are also consumed by apple plants and hence reduces the amount of these inputs to be applied solely for apples, thereby reducing the material costs in this district. At the same time, Theog and Narkanda blocks of Shimla district are hail prone areas, often damaging the apple crop compelling the farmers to concentrate more on vegetable cultivation as compared to apple. But the farmers of Nagar and Kullu blocks of district Kullu depend only on apple cultivation and sowing only peas crop in the fields of apple which required lower expenses as compared to other vegetable crops. It is because of this reason the farmers use to put more efforts for maintaining apple orchard where dose of fertilizer and chemicals remained higher as compared to district Shimla.

Regarding cost of irrigation the farmers of district Shimla were spending Rs. 27178 and Rs. 26593 per hectare in Theog and Narkanda blocks of district Shimla respectively whereas, this cost was absent in district Kullu. It is because of the reason of availability of water in plenty in district Kullu being valley area having high ground water level, but in district Shimla farmers have to spend large amount for diverting water from natural resources through pipes. At the same time cultivation of vegetables like cauliflower, cabbage and capsicum grown in Shimla district require proper irrigation facilities which proved helpful for apple orchards also. The

hired labour cost was almost equal in both the study districts varying between Rs. 15 to 17 thousands in study blocks.

Crop Produce and Disposal

The production and disposal of apples by sampled farmers in study districts has been presented in table 6.14 (A) depicting that in district Shimla, the total production during the years 2010-11 was 3506 and 2383 qtls at Theog and Narkanda block respectively. Out of total production about 5 to 6 percent was retained at home for consumption and remaining part disposed of in markets. The price received by the growers varied between Rs. 3833 and Rs. 3395 per quintal in Theog and Narkanda block respectively. The higher apple prices in Theog block are be due to the fact that harvesting season in Theog is early fetching better prices.

Total apple production in the orchards of selected farmers of district Kullu was 4853 and 5814 qtls at Nagar and Kullu blocks respectively which is significantly higher as compared to district Shimla may be due to climatic benefits enjoyed by district Kullu or may be due to the fact that entire efforts of Kullu farmers are concentrated on apple production whereas the farmers of Shimla have diversified into vegetable production also. The reason behind higher prices in Kullu block is only the benefit of early harvesting period in this area. During the course of investigation it was found that the role of traders is very dubious. They announce very high anticipated prices of apples for a particular period and keeping this in mind the growers immediately start harvesting. But when this production arrives in market the prices fall very sharply. Though, growers are aware of this practice but are helpless against monopoly of trader community.

Regarding category wise levels of production, table 6.14 (B), reveals that out of a sample of 15 growers 10 belonged to the category of marginal and small farmers in Theog and 15 in Narkanda block of district Shimla. Similarly 10 and 13 growers may be seen in the category of marginal and small farmers in Nagar and Narkanda blocks of district Kullu respectively. Production pattern among different category of farms indicates that out of total production (3973 qtls) in Theog and Narkanda block of district Shimla the share of marginal and small farmer accounted 3973 qtls which is of 67.46 per cent. This shows out of 30 farmers 10 farmers (marginal and small) sharing 67.46 per cent of the total production. In this comparison in district Kullu the total production of marginal and small farmers have been accounted 10667 qtls in Nagar and Kullu blocks which is of 57.80 per cent in all. On the other hand analysis

reflects that per farm total production has been accounted 393 qtls which vary into 95.4; 201.30, 194.00 and 509.3 qtls among marginal, small, medium and large category of farms respectively in Theog and Narkanda block of district Shimla.

In comparison of above analysis of district Shimla the picture of district Kullu reflects that at overall level the per farm production of apple has been accounted 711 qtls which varies 131.2, 356.00, 643.00 qtls respectively among marginal, small and medium farms of Nagar and Kullu blocks of district Kullu. Discussion concludes that at per farm level the production of apple in district Kullu is about 81 percent higher as compared to district Shimla.

Different Market Channel

Different marketing channels of sampled farmers of targeted crop have been presented in Table 6.15. This table shows that in both the study districts only two marketing channels are adopted by orchardists i.e. producer-wholesaler-traders and producer to MIS. In district Shimla about 97 per cent of the marketed surplus was sold to wholesaler/traders and remaining three per cent to HPMC under MIS scheme. The prices of apple have been recorded to be Rs. 3833 and 3395 per qtl in Theog and Narkanda block respectively. Whereas, the price of MIS produce was fixed at Rs. 525 per qtl by the state government. In district Kullu, 100 per cent of the producers have sold their produce to wholesaler-traders. During the survey, it was found that late payments by procurement agencies have forced the farmers to sell their culled apple in the local markets at lower rates than prescribed by the State Government. However, in district Kullu as a whole, highest quantity of apple was procured under MIS during the year 2007-08 when there was a heavy production. It has also been observed that large farmers generally prefer this scheme as they can afford to wait for payments for longer period and don not mind to accept payments in kind like fertilizer, pesticides and containers.

Channel wise Marketing Cost

Channel wise marketing costs of apple at farmers' level have been presented in table 6.16. It was found that cost of picking, filling in boxes/bags/container was Rs. 225 per qtls under Channel-1 and channel-2 in Theog and Narkanda block of district Shimla. In Shimla district two channels have been adopted for marketing of produce. Under channel-1 the produce is sold to wholesale/trader whereas, in channel-2 it is sold under MIS. However, in district Kullu only one channel from producer to wholesaler/trader has been adopted. In this district apple has also been sold to traders. The filling system of produce vary between Shimla and Kullu district as in

Shimla the produce is packed in boxes and forwarded to wholesaler/trader whereas, the produce sold to MIS packed in bags. In case of district Kullu, generally, the apples are packed in crates and sold at nearby local markets. It is because of this reason that the costs of picking/filling are low as compared to that of district Shimla. Regarding depreciation of container the costs are Rs 25 under channel-2 which is about half as compared to channel-1. It is because of the reason that under channel-2, apple is packed in bags which is generally used only once.

The transport costs were higher, Rs.150 per qtl due to longer distance of market in Theog block. In other cases, it varied between 60 to 70 rupees from orchard to road head and road head to market. In case of channel-2 the costs were Rs 30 and 25 for orchard to road and road head to market, respectively. The cost of loading and unloading was constant at Rs.25 for channel-1. The net prices received by the growers under channel-1 were Rs 3293 and 2945 in Theog and Narkanda block of district Shimla, respectively. Whereas these prices were Rs 2760 and 3095 in Nagar and Kullu blocks of district Kullu. In case of channel-2, all the costs were incurred by the concerned agencies and therefore, growers do not have to pay any expenses on this account.

Farmer Perception about MIS

Farmer's perceptions about MIS presented in table 6.17 indicating that the apple offered by the growers under MIS has never been rejected, neither by the governmental agencies nor by the private traders. It is because of the reason that produce has specific value in the market and there is a demand even for culled fruit. As per the guidelines of the state government every farmer is eligible to sell his produce under MIS but even after knowing the scheme 50 per cent of farmers of district Shimla and 80 per cent of district Kullu have not shown any interest to sell their produce to MIS agencies because of late payments. Though, 100 per cent of the farmers understand that this scheme had helped in increasing area under target crop and felt that this scheme is very helpful in increasing in farm income especially at the time of glut production.

Problem analysis of Stakeholders

There are various stakeholders involved in the scheme extending right from the designated agencies, their employees, traders and farmers etc. Each one of these had their own experiences of problems they faced during their involvement. The range of these problems

extends from financial problems to logistic problems. These problems have been analysed for each of the stakeholder separately, in the following text.

Procurement agencies HPMC and HIMFED, the two agencies designated for procuring apple in the state, have been allowed to restrict their operations in the ratio of 60:40. It has been decided by the Directorate of Horticulture that out of total apple procured under MIS, the HPMC will procure only 60 percent and remaining 40 percent will be handled by the HIMFED. The problems faced by these agencies are almost identical and hence analysed together. The problems relate to:

1. **Financial problems:** Both the agencies experienced delay in reimbursement of expenses which often is about one year and sometimes even more than that. This put them in lot of hardship and hampered the efficient operations. This was stated to be the main cause of delay in farmers' payment and had to face the displeasure of farmers for no fault of the agencies. The marketing cell of HIMFED revealed that they had made payments of more than Rs. One Crore for year 2010 operations but the department of Horticulture still have to reimburse the amount.

2. **Problems due to inter-agency competition:** The procurement operations are started by both the agencies simultaneously, which normally are 3 to 4 months prior to harvesting of the crop. The allotment of collection centres to each of the agency is made by the department of horticulture and this allotment is made afresh each year. Bothe the agencies try get allotment of procurement centres with high volume of production, which means high quantity of culled fruit available for procurement. This gives rise to interdepartmental rivalry. Another consideration is to get the collection centres which are conveniently located as this makes the life of deputed employees easy.

3. **Competition with traders:** The farmers are free to sell apple to any agency or traders at their will. Thus, the agencies have to compete with traders also who offer slightly better than the price and most importantly make cash payment on the spot. Sometimes, the traders also offer advances to farmers for their culled fruit in order to secure the business. Both the agencies do not have any such provisions and due to this sometimes fall short of their procurement targets. It is reported that mostly the traders from Uttar Pradesh are involved in this business.

4. **Road connectivity:** The agencies also pointed out that some of the centres are not linked with roads which force them to pay higher labour charges for collection and disposal of the produce.

5. **Unavailability of transportation:** During peak season, though the transport by trucks is regulated by district administration, there is acute shortage of trucks resulting in long delays in disposal. This further spoils the fruit significantly reducing their marketability.

6. **Lack of buyers:** The process of selling of produce is very tough due to lack of buyers. This is because of the reason that quality of MIS produce is very poor and the percentage of wastage is very high.

7. **Alternative uses of culled apple:** The procurement agencies have tried to manufacture vermicompost from highly decomposed culled apple with a view to curtail their losses. But the problem is that there is hardly any market for vermicompost.

8. **Farmers attitude:** Farmers try to sell almost decomposed or lowest quality culled fruit to procurement agencies as there are other buyers for normal culled fruits. By the time lowest quality culled fruit is disposed of by the agencies it is almost rotten and unmarketable and hence some portion of it has to be destroyed, resulting in losses.

9. **Packing material:** The culled apple offered to agencies under the scheme is packed in gunny bags. This results in higher percentage of wastage during transportation and due to weather.

Employees of designated agencies There is combination of employees of the designated agency and department of horticulture which forms the team of officials responsible for procurement operations. This combination of employees of two departments gives rise to many problems as listed below.

1. **Transfer policy:** About 40 percent of the employees are not satisfied with the transfer policy deputing them to collection centres and complaint that influential employees get easy postings whereas others have to toil in difficult and harsh places.

2. **Boarding and lodging:** About 50 percent of the employees complained that there are no proper arrangements for boarding and lodging for the employees. Neither there is any provision of advance payments for meeting out their expenses during the long stay.

3. **Cooperation from farmers:** It is hard job for the employees to convince the farmers to sell their produce to agency. This problem has arisen due to bad track record of both the agencies regarding late and part payments. About 40 percent of the employees were facing this problem in convincing.

4. **Storage of apple:** The procurement season coinciding with rainy season, it is very difficult for the employees to safeguard the culled apple packed in gunny bags stored in open. This problem is being faced by about 60 per cent of the deputed employees.

5. **Other problems:** Other problems include the problems related with salaries and allowance which disheartened about 80 per cent of employees for efficiently carrying out their duties.

6. **Ego problems:** Employees of two departments working together many times faced conflict of clashing egos. Release of advances to the employees of department of horticulture for meeting out the expenses during the stay and denial of this facility to other employees sometimes leads to inferiority complex among the letter hampering their work efficiency.

Traders: Majority of traders belong to Uttar Pradesh who purchase the apple sold by HIMFED at Parwanoo and to some extent by HPMC. They have to come from long distance for making this transaction. Due to this fact they face several difficulties and the problems narrated by them are following.

1. **Auction schedule:** There is no fixed schedule of auction at Parwanoo. The traders have to wait for days for the apple to arrive at Parwanoo and auction to take place. Majority of the traders (90 percent) have to stay at market yard for a long period which lack basic amenities, making their stay very uncomfortable.

2. **Quality of apple:** About 50 percent of the traders revealed that there is no information about the quality of apple being offered for sale. Most often the quality is so poor that majority of produce is unsalable resulting in losses to them.

3. **Personal relations:** About 20 percent of the traders alleged that some influential traders have developed personal relations with some of officials of the procurement agencies who provide them the information about the time of auction and quality of

produce. They felt cheated on this account as influential traders receive maximum benefit by purchasing good quality and bulk of the produce.

4. **Unregistered traders:** About 60 percent of the traders pointed out that unregistered traders also attend auctions and purchase apple in auction which should not be allowed.

Problems Perceived by the Farmers It is the farmer who is at the focus point of the scheme which has been designed for his benefit. It is he who incurs all the costs and expects to reap reasonable gains out of this. During the whole process he faces many difficulties and problems and this is true for MIS procurement as well. Table 6.18 presents the problems perceived by sample farmers in marketing of apple, highlighted below.

1. **Price of apple:** All the farmers of both the districts found the existing market prices of apple insufficient.

2. **Price offered under MIS:** About 40-60 percent of the farmers of both the districts felt that price announced for procurement of apple under MIS is not adequate and packaging material is also costly.

3. **Price volatility:** Though the procurement price under MIS is fixed and announced in advanced, majority of the farmers, 65 to 75 per cent, were not satisfied with the pricing pattern and pointed out that there was a price volatility of apple in wholesale market.

4. **Malpractices:** About 10 to 20 percent of the farmers complained that they were cheated by middlemen especially at the time of price fixation. More than 70 percent of the farmers were of the opinion that there was non-availability of cold storage/warehouse facilities and of processing units.

5. **Transport:** During the peak harvesting season, there is acute shortage of trucks for transportation of apples. This problem was highlighted by 12-20 per cent of sampled farmers.

6. **Unavailability of cold storages:** This problem was reported by farmers ranging from 76 to 90 per cent, depending upon their location. They argued that this can significantly reduce the proportion of the culled and thus lead to good returns and will be saved from selling the culled apples under MIS.

7. **Lack of processing units:** The respondents felt that establishment of small scale processing units would facilitate the quick and efficient disposal of culled apple and would be important in enhancing their income. About 65-75 percent of famers were of this view.

8. **Delay in payments:** All farmers complained that there was a delay in payments.

9. **Discrimination:** About 50 to 60 percent of the farmers argued that there was discrimination on the basis of standard of produce/quality.

Despite above problems, no farmer complained on account of the fact that the gunny bags are not returned to farmers. Weighing and other problems in selling were also not the issue for farmers. Long distance of procurement centre from the farm is not a deterrent for the farmers and neither was the delay in payments for selling culled apple under MIS.

All farmers are beneficiaries of MIS in the sense that they are free to offer their culled apple production for procurement under this scheme. Even then they feel discriminated and suffer from delay in payments. Exclusion from the scheme is a matter of choice as some of the farmers prefer to sell the culled apple in the open market to private traders for the reasons of immediate cash payments.

Table 6.1: MIS in different districts of state in different

S.No.	Year	Districts	Commodity Procured In Bags of 60 kg.
1	2007-08	SHIMLA	380619
2	2008-09	-DO-	713103
3	2009-10	-DO-	10270
4	2010-11	-D0-	1643724
1	2007-08	KULLU	48132
2	2008-09	-DO-	10124
3	2009-10	-DO-	664
4.	2010-11	-DO-	33241

Source: Own survey.

Table 6.2: Month wise arrival of apple in important wholesale markets of State

Mandi	Targeted commodities	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Local market of H.P.	-	-	-	-	-	-	597942	998236	1197883	598942	599942	-	-
Out of H.P.	-	-	-	-	-	-	1704108	3006847	3608216	1804108	1904108	-	-

Source: Directorate of Marketing Board of H.P.

Table 6.3: Proportion of procurement to total market arrival (in metric tons) of targeted crop in selected districts

Districts	2008-09		2009-10		2010-11	
	Qty. procured	Total market arrivals	Qty. procured	Total market arrivals	Qty. procured	Total market arrivals
Shimla	713103		10270		1643724	4341786
Kullu	10134		664		33241	130530

Source: Marketing Board of Agri. and Directorate of Horticulture.

Table 6.4: Details from agriculture produce marketing committee regulated markets about MIS operation 2011-12

Crops procured under MIS	Procurement starting month for crop under MIS	Procuring agency	Total quantity of crops procured in metric tons under MIS	Price of crop under MIS in Rs. Per kg.	Charges, if any paid to APMC, if yes, by whom
Apple	June to Oct.	HPMC & HIMFED	5664	5.25	-

Source: Directorate of Horticulture H.P.

Table 6.5: Information about apple in selected district during recent years, preferably 2007-08, 2008-09, 2009-10, 2010-11

Particulars	Shimla District					Kullu District				
	2006-07	2007-08	2008-09	2009-10	2010-11	2006-07	2007-08	2008-09	2009-10	2010-11
Area under targeted crop (ha)		31329	32195	33579	-	-	23179	23663	23870	-
%age of apple in total cropped area in the district	-	-	-	-	-	-	-	-	-	-
Total production (qtls) (M.T.)		349262	336753	171945			160124	77409	54385	
Productivity (Qtl/ ha)		139.375	130.75	64	0	0	86.375	40.875	28.5	
Avg. price (Rs,/qtl)		-	-	-	-	-	-	-	-	-

Source: Statistical outline.

Table 6.6: Information regarding marketing of apple in village clusters (2011-12)

Crop	Area under targeted crop (in ha)	Extent of loss through pest and disease	Transportation loss (to mandi/MIS procurement center)	Marketed through MIS (qtls)	Price received (Rs.)	Marketed through other channel (Qtls)	Price received in each channel (Rs.)/Qtls
Shimla							
Theog	400	5%	0.01	111	525	3374	3833
Narkanda	193	5%	0.01	60	525	2308	3395
Kullu							
Nagar	377	5%	0.01	-		4815	3155
Kullu	306	5%	0.01	-		5794	3500

Source: Own survey.

Table 6.7: Costs incurred in marketing of targeted crop under MIS in APMC (as perceived by the Nodal Agency).

S.No.	Functionary	Cost (Rs./qtl)
I	**Marketing Cost Incurred by Producer**	
i.	Transportation cost	Nil
ii.	Labour charges for loading/unloading	Nil
iii.	Octroi	Nil
iv.	Cost of packing material	Nil
v.	Market fee	-
vi.	Commission	-
vii.	Other, if any	-
2.	**Market cost incurred by purchaser***	
i.	Cost of purchase	525.00
ii.	Sale tax on value	-
iii.	Labour charges for filling and stitching bags	25
iv.	Market fee	-
v.	Weighing charges	-
vi.	Transportation cost	80
vii.	Loading and unloading charges	25
viii.	Commission	-
3.	**Total cost (1+2)**	-

Source: Own survey.

Table 6.8: Cost of cultivation of apple for the year 2010-11

Input-output details with units	Details
Expected sowing time (week & month)	Jan. to Feb.
Nursery area for one hect. Of transplanted crop	0.01 ha.
Land preparation cost (Rs.)	19477 Rs.
Seed Qty. (plants)	10,000 Rs.
FYM Qty. (in ton)	1.1
Seedling transfer time/period	Jan. to Feb.
Fertilizer & nutrients (in kg of nutrients)	25 kg*
Urea	10 kg.*
DAP	10 kg.*
Other 'P' fertilizer	5 kg.*
Zinc	-
Other nutrients	-
Prevalent pests and pesticides	
Name	Dythine DM-45
Qty	100 Gram
Name	Copper oxychloride
Qty	300 grm
Irrigation timings and qty	Jan. to March
	22000 Ltr. For six time
Land rent	23750
Any other recommended operation	
Harvesting period/weeks/months	June to Oct.
Expected quantity of main product (qtls.)	100-150
By product (qtls.)	

* - Initial cost.
Source: own survey.

Table 6.9: Coverage of farmers under MIS in the selected district of states.

District	Village clusters	Total number of targeted crop growers	MIS benefit availed
Shimla	6	332	332
Kullu	4	1815	1815

Source: own survey.

Table 6.10 A. Assets of sample farmers in District Shimla.

S.No.	Assets	Marginal		Small		Medium		Large		Avg.	
		Theog	Narkanda	Theog	Narkanda	Theog	Narkanda	Theog	Narkanda	Theog	Narkanda
1.	**Size of land**	0.60	0.71	1.60	1.24	2.40	-	5.07	-	2.13	1.03
	-Leased in	-	-	-	-	-	-	-	1	-	-
	-Leased out	-	-	-	-	-	-	-	-	-	-
	-Total	0.60	0.71	1.60	1.24	2.40	-	5.07	-	2.13	1.03
2.	**Total operational holding**						-		-		
	-Area under crop cultivation*	-	0.13	0.11	0.10	0.40	-	0.32	-	1.64	0.11
	-Area under orchard	0.60	0.71	1.60	1.24	2.40	-	5.07	-	2.13	1.03
3.	**Cropped Area**						-		-		
	-Irrigated	0.12	-	0.13	-	0.4	-	0.27	-	0.192	0
	-Unirrigated	0.48	0.71	1.47	1.24	2	-	4.8	-	1.94	1.03
4.	Source of irrigation	Tank	-	Tank	-	Tank	-	Tank	-	Tank	-
5.	Number of milch animals	4	6	11	13	2	-	5	-	22	19
6.	Number of pump sets	-	-	-	-	-	-	-	-	-	-
7.	Tractor	-	-	-	-	-	-	-	-	-	-
8.	Home	4	6	6	9	2	-	3	-	15	15

Source: own survey.

Table 6.10 B. Assets of sample farmers in District Kullu

S.No.	Assets	Marginal		Small		Medium		Large		Avg.	
		Nagar	Kullu	Nagar	Kullu	Nagar	Kullu	Nagar	Kullu	Nagar	Kullu
1.	**Size of land**	0.79	0.64	1.36	0.64	4.00	8.08	-	-	2.01	1.63
	-Leased in	-	-	-	-	-	-	-	-	-	-
	-Leased out	-	-	-	-	-	-	-	-	-	-
	-Total	0.79	0.64	1.36	0.64	4.00	8.08	-	-	2.01	1.63
2.	**Total operational holding**										
	-Area under crop cultivation	-	-	-	-	-	-	-	-	-	-
	-Area under orchard	0.79	0.64	1.36	0.64	4.00	8.08	-	-	2.01	1.63
3.	**Cropped Area**										
	-Irrigated	0.43	0.19	0.34	0.46	0.37	0.40	-	-	0.38	0.39
	-Unirrigated	0.36	0.45	1.02	0.18	3.63	7.68	-	-	1.63	1.24
4.	Source of irrigation	Kuhl	tank	Kuhl tank	tank	Tank	tank	-	-	Tank kuhl	Tank
5.	Number of milch animals	13	5	14	16	13	6	-	-	40	27
6.	Number of pumpsets	-	-	-	-	-	-	-	-	-	-
7.	Tractor	-	-	-	-	-	-	-	-	-	-
8.	Home	6	3	4	10	5	2	-	-	15	15

Source: own survey.

Table 6.11: Borrowing by different categories of sample farmers in study district.

Details of debt	Marginal		Small		Medium		Large		Avg.	
SHIMLA	**Theog**	**Narkanda**	**Theog**	**Narkanda**	**Theog**	**Narkanda**	**Theog**	**Narkanda**	**Theog**	**Narkanda**
Amount of loan taken (Rs.)	13 lac.	18 lac.	20 lac.	29 lac.	6 lac.	-	13 lac.	-	52 lac.	47 lac
Source	Commercial bank	Commercial bank	Commercial bank	Commercial bank	Comm. bank	-	Comm. bank	-	Comm. bank	Comm. bank
Purpose of loan	Crop loan	Crop loan	Crop loan	Crop loan	Crop loan	-	Crop loan	-	Crop loan	Crop loan
Rate of interest (per annum)	4	4	4	4	4	4	4	4	4	4
KULLU	Nagar	Kullu	Nagar	Kullu	Nagar	Kullu	Nagar	Kullu	Nagar	Kullu
Amount of loan taken (Rs.)	6.6 lac.	1.5 lac	8.6 lac.	22.6 lac	9.12 lac.	3.55 lac.	-	-	24.32 lac.	37.66 lac.
Source	Commercial bank	Commercial bank	Commercial bank	Commercial bank	Comm. bank	Comm. bank	-	-	Comm. bank	Comm. bank
Purpose of loan	Crop loan	Crop loan	Crop loan	Crop loan	Crop loan	Crop loan	-	-	Crop loan	Crop loan
Rate of interest (per annum) %	4	4	4	4	4	4	4	4	4	4

Source: own survey.

Table 6.12: Cropping pattern of farmers for agriculture year

(Area in Ha)

Crop	Category							
	Marginal	Small	Medium	Large	Marginal	Small	Medium	Large
	2010-11				2011-12			
Shimla								
THEOG								
Apple	0.192	0.768	0.384	1.216	0.192	0.768	0.384	1.216
Cauliflower	-	0.0512	0.0128	-	-	0.0512	0.0128	0.064
Capsicum	-	0.0256	0.0064	0.032	-	-	-	-
Peas	-	0.0192	0.0064	0.032	-	-	-	-
Cabbage	-	-	-	-	-	-	0.0128	0.128
NARKANDA								
Apple	0.416	0.8192	-	-	0.416	0.8192	-	-
Peas	0.064	0.1024	-	-	0.064	0.1024	-	-
Kullu								
Nagar								
Apple	0.3776	0.4352	1.6	-	0.3776	0.4352	1.6	-
Kullu								
Apple	0.1536	0.512	1.2928	-	0.1536	0.512	1.2928	-

Note: Marginal:<1 ha., Small:1-2 ha., Medium:2-5 ha., Large:>5 ha for irrigated land and for unirrigated, land size become doubles for the same.
Source: own survey.

Table 6.13: Production cost of apple at farmers level in the year 2011-12.

(Rs./Ha)

S.No.	Detail of cost items	Cost			
		SHIMLA		KULLU	
		Theog	Narkanda	Nagar	Kullu
i.	Land preparation cost/age of orchards	18044	17478	**15798**	**16788**
ii.	Cost of material (seed, fertilizers, chemicals)	12639	11470	28058	33153
iii.	Cost of irrigation	27178	26593	-	-
iv.	Cost of family labour	3333	4533	2997	3001
v.	Cost of hired labour	17520	15041	15067	16200
vi.	Other cost (if any)	-		-	

Source: own survey.

Table 6.14 A: Quantity of apples produced by farmers and its disposal pattern

Crops	Total production (qts)		Kept for home consumption (qtls)		Marketed (qts)		Price (Rs./qtl)	
	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11
Shimla								
1.Theog	-	3506	-	21		3485		3833
2.Narkanda		2383	-	15		2368		3395
Kullu								
1.Majur	-	4853		38		4815		3155
2.Kullu		5814		20		5794		3500

Note: Make same separate table for marginal, small, medium, large and average farmer.
Source: own survey.

Table: 6.14 B. Apple Produced by Farmers & Its Disposal.

(In Qtls.)

Crops	Category														
	Marginal			Small			Medium			Large			Overall		
	Prod.	Home Consum-ption	Marke-ted	Prod.	Home Consum-ption	Marke-ted	Prod.	Home Consum-ption	Marke-ted	Prod.	Home Consum-ption	Marke-ted	Prod.	Home Consum-ption	Marke-ted
SHIMLA															
Theog	400	3	397	1190	7	1183	388	3	385	1528	8	1520	3506	21	3485
Narkanda	554	5	549	1829	10	1819	-	-	-	-	-	-	2383	15	2368
KULLU															
Nagar	773	6	767	1024	9	1015	3056	23	3023	-	-	-	4853	38	4815
Kullu	408	2	406	3961	13	3948	1445	5	1440	-	-	-	5814	20	5794

Table 6.15: Different marketing channels for apple on sample farms

Irrigated crops	Marketing channel	% sold	Price (Rs./qtl)
Shimla			
Theog			
Wholesaler/Trader	3485	96.81	3833
MIS	111	3.19	525
Narkanda			
Wholesaler/Trader	2308	97.47	3395
MIS	60	2.53	525
Kullu			
Nagar			
Producer-Wholesaler-trader	4815	100%	3155
MIS			
Kullu			
Producer-wholesaler-trader	5794	100%	3500

Source: own survey.

Table 6.16: Channel wise marketing cost of apple at farmers' levels

(Rs./qtl.)

S.No.	Cost incurred	SHIMLA				KULLU	
		Channel-1		Channel-2 MIS		Channel-1	Channel-2
		Theog	Narkanda	Theog	Narkanda	Nagar	Kullu
i.	Picking, filling in boxes/bags	225	225	225	225	200	200
ii.	Depreciation of container	55	55	25	25	55	55
iii.	**Transportation costs (multiple points)**					90	100
	Orchards to road	60	60	30	30	30	30
	Road head to market	150	60	25	25	60	70
iv.	Labour charges for loading/unloading of produce (multiple points)					50	50
	- Orchard loading	25	25	15	15	25	25
	- Un loading market	25	25	15	25	25	25
v.	Octroi/marketing tax	-	-	-	-		
vi.	Commission in market	-	-	-	-		
vii.	Other expenses if any	-	-	-	-		
	Sub-Total	540	450	335	345	395	405
	Price received	3833	3395	525	525	3155	3500
	Net Price received	3293	2945	525	525	2760	3095

Source: own survey.

Table 6.17: Farmers perceptions about MIS operations

	SHIMLA	
i.	**Rejection of produce by buyers**	% of sample farmer reporting particular problem
	Output rejected (in qtls)	0
	By Government agency	0
	By Private traders	0
ii.	**Rejection Stage of produce**	0
	At the level of field	0
	In the market	0
iii.	**Possible reasons for exclusion of farmers from MIS**	
	Farmers not aware of MIS	0
	Farmers not interested in selling through MIS	50
iv.	**Perception about the results of MIS**	
	MIS helped in increasing area under apple	50
	MIS covered cost of production of apple	100
	Increase in farm income after implementation of MIS	100
	KULLU	
i.	**Rejection of produce by buyers**	% of sample farmer reporting particular problem
	Output rejected (in qtls)	0
	By Government agency	0
	By Private traders	0
ii.	**Rejection Stage of produce**	0
	At the level of field	0
	In the market	
iii.	**Possible reasons for exclusion of farmers from MIS**	
	Farmers not aware of MIS	0
	Farmers not interested in selling through MIS others	80
	Perception about the results/outputs of MIS	
	MIS helped in increasing area under targeted crop	100
	MIS covered cost of production of targeted crop	100
	Increase in farm income after implementation of MIS	100

Source: own survey.

Table 6.18: Problems perceived by sample farmers in marketing of apples

S. No.	Constraints	SHIMLA		KULLU	
		% of farmers reporting the problems			
		Theog	Narkanda	Nagar	Kullu
1.	Existing market price of produce is not sufficient	100	100	100	100
2.	Market intervention price announced is not adequate	45	40	50	60
3.	Packaging material is costly	60	55	30	40
4.	Packages/container not returned to the growers (as per agreement)	0	0	0	0
5.	Price volatility of apple in whole sale market	70	75	65	68
6.	Cheating by middlemen:				
	a. In price	10	15	12	14
	b. Weighing	0	0	0	0
	c. Other problems in selling produce	0	0	0	0
7.	Non-availability of transport	18	15	12	20
8.	High commission charges from middlemen	0	0	0	0
9.	Non receipt of payment in time	100	100	100	100
10.	MIS operation are irregular	0	0	0	0
11.	Regulated market is too far	0	0	0	0
12.	Non-availability of cold storage/warehousing facility	90	80	76	85
13.	Lack of processing units	70	75	70	65
14.	Delay in payments	15	25	0	0
15.	Extent of organized market of targeted produce:				
	a. Distance of regulated market				
	b. Existence of village market/daily hat in nearby village				
16.	Reason for not sell to MIS				
	a. Long Distance: Low Moderate High (<5 km), (5-10 km), (>10 km)	0	0	0	0
	b. Delay in price received	0	0	0	0
	C .Discrimination on the basis of standard of produce/quality	50	52	55	60

Source: own survey.

Chapter 7

EFFICIENCY OF MARKET INTERVENTION SCHEME

The MIS in the state of Himachal Pradesh is being implemented through State agencies of HPMC & HIMFED. The fruits like apple, kinnow, malta and santra were taken up under the scheme during the year 1990-91. Later on Galgal was included during the year 1995-96 and for mango MIS was implemented during 1998.

Coverage of districts: The MIS is being implemented in different districts depending upon the production of fruit in various districts. For apple the State govt. has covered 9 districts, for kinnow, malta, sangtra and galgal 8 and for Mango also 8 districts are being covered. The details have been provided in Table-7.1.

Table-7.1: Coverage of districts under MIS for different fruits

Apple	Kinnow, Malta and Santra	Mango
Shimla	Una	Una
Kullu	Solan	Solan
Mandi	Mandi	Mandi
Sirmour	Sirmour	Sirmour
Kangra	Kangra	Kangra
Kinnaur	Bilaspur	Bilaspur
Chamba	Hamirpur	Hamirpur
L/Spiti	Chamba	Chamba
Solan		

Period of implementation: The scheme is not open throughout the year and is open only during the harvesting and marketing period of fruits covered under the scheme. The duration of operation of scheme has been presented in Table-7.2.

Table-7.2: Implementation period of MIS for different fruits

Name of fruit	Duration of MIS (Each year)
Apple	July 20 to October 31
Sangtra and Malta	November 21 to February 15
Kinnow , Galgal and Mango	July 1 to August 15

Payments: The payments due to the farmers on account of procurement of apples are never made instantly. The usual lag between the procurement and payments is about ten months and even more than that in many cases. Despite this lag all the payments are not made in cash. Both the procurement agencies, Table-7.3 and 7.4 indicate that part of payments are made in kind which is usually in the form of packing materials, fertilizers and insecticides and pesticides etc. The perusal of the Table 7.3 reveals that HIMFED is yet to clear the last two years payments.

Table-7.3: Pattern of payments made to farmers by HIMFED under MIS

(Rs. in lacs)

Years	Total amount	Cash	In kinds	Balance
2008-09	1226.86	630.15	596.70	Nil
2009-10	10.59	10.49	0.09	Nil
2010-11	2385.78	1525.10	728.20	132.47
2011-12	100.68	50.68	29.85	20.15

Table-7.4: Pattern of payments made to farmers by HPMC under MIS

(Rs. in lacs)

Year	Total payment	in kind	cash	Balance
2009-10	37.28	00.00	37.28	Nil
2010-11	3449.78	1914.44	1535.34	Nil
2011-12	196.67	32.38	164.29	Nil

Procurement price and cost of procurement: The procurement of fruit under the scheme is strictly at the price announced and notified by the state government beforehand. The procurement cost is being born by the administrative department i.e. Horticulture department. The overhead costs involved in the procurement operations have been presented in Table-7.5 for different fruits for the year 2012.

The price paid to farmers for the apple procured by the designated agencies has increased from Rs. 3.75/Kg during the year 2000-01 to Rs. 5.25/Kg during the year 2008-09 (Table-7.6), after which it has remained constant till date. However, there is great variation in the quantity procured, which depend on many factors. These include market demand, price scenario, total quantity produced etc. The quantity procured of apple was as low as 912 MT during 2009-10 and as high as 111154 MT during 2010-11 indicating absence of any trend in this respect. The table also presents the quantity procured in terms of gunny bags and the number of bags

disposed of to the market or the processing plants. This quantity is same except for the years 2003-04 and 2008-09 which was due wastage on the part of procurement agencies.

Table-7.5: Cost of fruit procurement under MIS during the year 2012

Name of fruit	Cost of procurement (Rs. /Kg.)
Apple	1.95
Kinnow, Malta and Sangtra	2.65
Galgal	1.00
Mango	1.30

Table-7.6: Details of procurement rate, quantity procured and dispatch of apple under MIS

Year	Procurement Rate (Rs. Per kg.)	Quantity procured in M.T.	Procurement in bags	No. of bags dispatched to market/processing
2000-01	3.75 10.00 'A' grade	52890 3438	881500	881500
2001-02	3.75	8266	137766	137766
2002-03	4.00	28921	482016	482016
2003-04	4.00	37338	622300	615068
2004-05	4.25	44837	747281	747281
2005-06	4.25	22616	376933	376933
2006-07	4.25	9569	159484	159484
2007-08	4.75	29427	490448	490448
2008-09	5.25	45741	762350	659650
2009-10	5.25	912	15200	15200
2010-11	5.25	111154	1852567	931260
2011-12	5.25	5664	94400	93367

Quality control: For quality check up detailed guidelines are issued for the guidance and strict adherence by the procurement agencies as well as staff involved. Accordingly, the staff engaged from departments of HIMFED and HPMC makes it a point to procure only that fruit which fulfils the laid down quality norms and the staff is bound to procure the fruits covered under MIS only on the notified prices.

Utilization and disposal: The procured fruits are used for two purposes viz processing purposes and sale in the open market. Any quantity over and above the installed processing capacity or the quantity demanded by the processing plants in the state, is sold in the local markets of the state. This sale is mainly in the form of open auction at Parwanoo. The

purchasing agencies are mainly the private traders from neighbouring states. It is worth mentioning that the agencies don't prefer to sell the fruit to small private processors due to problems of payments encountered during the past. The disposal price is determined by the market forces.

Total procurement and its disposal in case of HIMFED has been presented in Table-7.7 wherein it may be seen that there is no definite trend in procurement but the quantity processed has increased significantly during the last two years. Majority of apple quantity is disposed of in the market. In case of this agency, significant quantity of apple procured has been used for other purposes like being used for making of vermicompost or was simply wasted. This component is missing in case of HPMC, Table-7.8 indicating rational use of procured apples. Also, the quantity used for processing forms significant proportion of the procured quantity. This is mainly due to the fact that HPMC has its own processing plants at Jarol in district Mandi and Parwanoo in district Solan. The quantity over and above the processing requirement is disposed of in the open market.

Table- 7.7: Disposal of procured apple under MIS in markets and processing plants by HIMFED

(MT)

Years	Processing	Open markets	Other uses*	Total
2007-08	14.88	13367.28	0.00	13382.16
2008-09	14.40	23354.52	3628.92	23368.92
2009-10	198.72	3.00	0.00	201.72
2010-11	164.82	2315.94	42962.70	45443.46
2011-12	1041.60	814.98	61.20	1917.78

* - Includes destroyed quantity, used for vermicompost etc.

Table-7.8 : Disposal of procured apple under MIS in markets and processing plants by HPMC

(MT)

Years	Processing	Open markets	Other uses*	Total
2007-08	8545.00	7142.70	0.00	15917.50
2008-09	8721.00	10104.00	0.00	21367
2009-10	813.00	22.00	0.00	875.00
2010-11	10003.39	27936	0.00	65710.14
2011-12	3745.86	0.00	0.00	3745.86

Losses incurred under MIS: The market intervention scheme has been implemented for the welfare of farming community. This is apparent from the fact that despite the significant quantities procured and their utilization by way of processing and open market sales, the venture is loss making preposition for the government. Initially, when the price support scheme was in operation, during the period 1986-87 to 1990-91, the losses were of the tune of Rs. 210.89 lacs during the first year which increased to Rs. 2742.94 lacs during the year 1989-90, Table-7.9. During the next year the losses declined substantially mainly due smaller procurement level. No scheme was in operation for the next two years ie 1991-92 & 1992-93 and thereafter, MIS was introduced in the state which is still continuing. Despite this step, the losses continued in each year

Table-7.9: Procurement price, quantity procured, value of procured fruits and losses accrued under apple market intervention scheme

Year	Grade	Procurement Rate (Rs. Per kg.)	Handling charge Rs./kg.	Quantity procured (in M.T.)	Value of procured fruits (in lakh Rs.)	Losses (in lakh Rs.)	Name of Scheme
1986-87	All grades	1.30	-	25,226		210.89	Support price scheme
1987-88	-do-	2.00 Small orchardists 1.50 Big orchardists	-	21,452		317.81	-do-
1988-89	-do-	2.25	-	18,083		337.82	-do-
1989-90	-do-	2.75	-	1,10,896		2,742.94	-do-
1990-91	Processing grade	1.30	-	4,621		58.34	MIS
1991-92 & 1992-93	Neither support price nor Market Intervention Scheme was implemented						
1994-95	Processing grade	2.00	-	1,310	26.19	11.13	MIS
1995-96	-do-	3.00	0.75	15,247	457.41	300.64	-do-
1996-97	-do-	3.00	0.75	14,059	421.75	246.48	-do-
1997-98	-do-	3.50	1.25	17,127	599.45	486.12	-do-
1998-99	-do-	3.75	1.30	78,715	2952.00	2,904.00	-do-
1999-00	-do-	3.75	1.30	1,442	54.08	35.46	-do-
2000-01	-do 'A' grade	3.75 10.00	1.30	52,890 3,438	1,983.38 343.80	2,369.32 434.91	-do-
2001-02	Processing grade	3.75	1.30	8,266	309.98	410.09	-do-
2002-03	-do-	4.00	1.30	28,921	1,156.83	1,375.25	-do-
2003-04	-do-	4.00	1.30	37,338	1,493.52	1,139.50	-do-
2004-05	-do-	4.25	1.50	44,837	1,905.57	1,513.21	-do-
2005-06	-do-	4.25	1.50	22,616	961.18	625.29	-do-
2006-07	-do-	4.25	1.50	9,569	406.67	249.54	-do-
2007-08	-do-	4.75	1.50	29,427	1,397.77	1,065.44	-do-
2008-09	-do-	5.25	1.50	45,741	2,401.42	2,538.77	-do-
2009-10	-do-	5.25	1.50	912	47.90	33.14	-do-
2010-11	-do-	5.25	1.95	1,11,154	5,835.56	6,771.44	-do-
2011-12	-do	5.25	1.95	5,664	297.34	378.95	-do-

Reimbursement of procurement cost and losses: Under the scheme reimbursement of losses is made through state department of horticulture after the submission of audited accounts by concerned agencies. The state government reimburses the procurement cost and overhead expenses after deducting the sale proceeds received by way of open market sale and utilization in processing units and any other income, if any, to the procurement agencies. The loss is reimbursed fully to the procurement agencies by the state government after examining the auditor report pertaining to the scheme submitted by the agencies the department reimbursed losses. The losses are reimbursed by the state government after the approval of MIS from GOI. After the completion of the implementation period of the scheme, the state government submits the accounts for release of central share to the Ministry of Agriculture within three months. The Central share to the tune of 12.5% of the procurement cost is reimbursed by the GOI, Ministry of Agriculture to state government. It is worth mentioning here that the procurement agencies viz. HPMC & HIMFED were unable to provide receipt and expenditure statements for crops for the last 15 years.

Conclusions: The MIS is in operation in the state for many years now. However, there are hardly any signs of improvement in the scheme. The utilization pattern of procured apples is not efficient as indicated by the low quantum being used for processing purposes and wastage. The time lag between the time when fruit is procured and the payment is released to farmers shows no sign of declining. Also the farmers are obliged to accept the payment in kind, which many times is against their will and there is mismatch between the requirement and product being offered in lieu of cash payment. Thus, the scheme may be considered to be inefficient on following counts.

- There is time lag of about one year between the procurement and payments.
- Payments are not always in cash, farmers are obliged to accept inputs like fertilizers, packing materials and insecticides etc as kind payment.
- During the years of high production, significant amount of procured apples is wasted and destroyed. This is a burden on state exchequer.
- The quantum of apple used for processing is low and only apple procured by HPMC is being used for processing.
- Most importantly, this is a loss making preposition for the state and as such has large scope for improvement in management of the scheme.

Chapter 8

Summary and Suggestions

Objectives and methodology

The present study has been conducted with the objectives of understanding the coverage of MIS in the state of Himachal Pradesh and to ascertain the factors influencing the coverage of crops under the scheme. The study also focused on the level of farmers' participation in MIS and to highlight the problems of various stakeholders. To assess the efficiency of MIS is also one of the main objectives of the study. In order to achieve these objectives, the study was based on a sample of 60 apple producers in districts Shimla and Kullu of Himachal Pradesh, the districts with highest production of apples in the state and hence the highest quantum of culled apples, the crop covered under MIS in the state.

Background of study districts

The climate of major parts of the selected districted varies from temperate to subtropical and soils mainly developed under varying degree of podzolization and along with other conditions make these suitable for cultivation of apples. Large majority of land holdings in both the districts belong to categories of marginal and small.

Demographic features

The total geographical area of both the districts has registered a change, increase in district Shimla and decrease in district Kullu, mainly due to resettlement operations. The number of inhabited villages remained constant in Kullu but increased in Shimla. The sex ratio was 896.35 and 926.97 in district Shimla and Kullu respectively. The net area sown in district Shimla decreased from 75136 hectare to 64792 hectares during the period 1990-91 to 2008-09. However, the situation was just reverse in district Kullu where net area sown increased from 36881 hectare to 37185 hectare between 1990-91 to 2000-01 and remained almost constant at 37236 hectares during the year 2008-09. It is further indicated that during the year 2010-11, 62.28 and 81.78 percent of the holdings in Shimla and Kullu districts respectively belonged to marginal category. The percentage share of irrigated area in Shimla and Kullu was merely 4.3 and 5.7 respectively in 2000-01.

Demographic profile of study blocks

In district Shimla out of 10 blocks Theog and Narkanda have been selected for detailed study with 9.17 percent of the geographical area of the district under Theog block which just half in Narkanda block. The number of inhabited villages has been recorded to be 400 in Theog as

compared to 166 in Narkanda block which is 15.87 and 6.59 percent of the total villages of the district. The literacy level was 87.5 and 88.8 percent among male in Theog and Narkanda respectively. In comparison the percentage of female literacy was 76.6 and 70.3. In district Kullu, Kullu and Nagar blocks were selected. These blocks accounted for 29.98 and 20.53 percent of total area of the district. The female literacy percentage was 59 percent in Kullu district which was 59.41 and 62.08 respectively in Kullu and Nagar block. The male literacy percentage was more than 80 per cent in all situations. There was no irrigation in selected blocks of district Shimla whereas this area was 794 Ha in Nagar block and 1186 Ha in Kullu blocks of district Kullu.

Out of total cropped area, in Theog block, area under total food crops was 53.06 followed by vegetables 46.33 percent. In comparison the Narkanda block had slightly different position with 85.67 and 12.23 percent area belonging to total food and vegetable crops respectively. Out of total cropped area of the district Kullu cereals, account for 51.14 percent which figures were 65.34 and 30.07 percent in Kullu and Nagar blocks respectively.

There were 10 apple procurement centers established in Theog block of district Shimla where as 21 such centers were established in Narkanda block during the year 2010. In district Kullu five centers each were established in Kullu and Naggar blocks. In total there were 204 such centers in district Shimla and only 34 procurement centers were there in district Kullu. There are only nine cold stores in the state used for storing not only apple but other perishable agricultural/horticultural commodities. These include five cold stores in producing areas with 1000 MT capacity each. In addition to this there is a cold store at Parwanoo with a capacity of 3000 MT and three cold stores located in markets with a total capacity of 8250 MT. The department of Horticulture of Himachal Pradesh has eight fruit processing centers with an installed capacity of 1800 MT per year. The Horticulture Produce Processing and Marketing Corporation has two processing centers with combined capacity of 29000 MT. There are a number of fruit processing units in cooperative sector and private sector etc with a combined processing capacity of 52860 MT. Thus, the state has a total processing capacity of 83160 MT of fruit per year.

Profile of selected villages

In Theog block three villages, Sandhu, Gowai and Vishri and three in Narkanda, Phirnu, Kunthru and Kandyali were selected. Sandhu is the largest village and had 173 hectare of land and in Narkanda block, village Kandyali has largest area of 270 hectare. All the villages of Theog and Narkanda block are situated close to National highway. These villages are situated at a distance of 40 kms from each other. One cluster of two villages named Katrain and Dhobi

of Nagar block and another Jarri and Bradha in Kullu block were selected in district Kullu. Both these village clusters are separated by the river Beas. Raising apple orchards is the main activity of the rural people of selected villages. The percentage of marginal farmers is highest among all the selected villages. In selected villages of Shimla; the quantum of forests, barren and pasture land was higher as compared to the villages of district Kullu. It is because of this reason that in the villages of district Kullu, the net area sown was higher. Tanks were the main source of irrigation among all the villages except village Katrain. The institutions like primary schools, public schools, primary health centers, post offices and fair price shops were present in all the clusters. But these lacked important institutions lime Khadi & village industries corporation, factories, farm produce storage facilities, agriculture produce market (APMC), active NGOs and SHGs. The facilities of MIS procurement centre and village markets were present only in district Kullu. Usually the farmers needed to carry the produce to a distance of 35 to 40 kms in order to avail the benefit of MIS. Despite this the area under apple is continuously increasing in both the districts, selected blocks and villages, though the rate of increase was higher in district Shimla and area under apple in this district was almost double than Kullu.

Performance of MIS

The procurement of apples starts during the month of June but the process begins during the period of April-May with Joint efforts of Directorate of Horticulture and HIMFED and HPMC. August is the peak marketing season for apple and during this month about 25 per cent of marketed quantity is sold in local markets but major chunk of 75 per cent is sold in the markets located outside the state which cater to main consuming centers of Himachal apple. The highest procurement of apples was during the year 2010-11 and in Kullu it was during the year 2007-08. During the year 2010-11, 10.74 and 20.29 per cent of the culled apple were procured in district Shimla and Kullu respectively. The apple procured under MIS is disposed of to private traders through auction but some quantity is used for processing, mainly by HPMC. During 2011-12, MIS produce has been sold only in Theog and Narkanda clusters of district Shimla, that too in low quantity. But due to low production in the clusters of Kullu no sale was recorded. The farmers preferred to sell culled fruit at lower prices in local markets as they could get spot payments for the produce.

The area under apple is increasing continuously in the state and the selected districts as well, however, it is a matter of serious concern that production of this crop is continuously declining during the period 2007-08 to 2009-10 in both the districts. The productivity of the crop has decreased from 11.15 MT. to 5.12 MT/Ha during 2007-08 to 2009-10 in district Shimla and

from 6.91 to 2.28 MT/Ha in Kullu, during the same period. The extent of loss through pest and disease was only 5 percent among all the clusters.

There is no marketing cost incurred by producers, because the State Government provides an assistance of Rs. 130/qtl as handling charges. The producer is not obliged to pay any charges to the federations. The federations have to spend handing charges within the granted amount of rupees 130 per qtl. All the apple orcharsists of the state are the beneficiaries of the MIS scheme as they can take advantage of the scheme if they so desire.

The analysis of cost of cultivation of apple indicates that the land preparation is the major cost component along with the cost of nursery. The land rent is highest indirect cost component. The harvesting period of the crop is from June to October and the quantity of produce varies between 100 to150 quintal per hectare. The practice of leasing land was found to be completely absent among the sampled apple growers.

In Shimla, the average size of land holding is about one hectare in Narkanda block which is just double in Theog block and all the area is under apple orchards with intercropping in some cases. The percentage of land under irrigation varies between about 5 to 10 per cent of the total land holding and invariably tanks are the only source of irrigation. Among assets of sample farms have milch animal whose number varies between 2 and 13 per household. In district Kullu, the average size of holding size was 2.01 and 1.63 Ha in Nagar and Kullu blocks respectively. There is also a complete absence of field crops in this district. In comparison to district Shimla the extent of irrigation is significantly higher in this district. The possession of milch animals varies between 2 to 3 animals in both the blocks which are comparatively higher as compared with district Shimla.

All the categories of farmers had outstanding loans drawn from commercial banks with average loan borrowed standing at Rs. 4.4 and 3.2 lacks per farm in Theog and Narkanda blocks of district and in Nagar and Kullu block of district Kullu it was Rs. 1.62 and 2.51 lacks at per farm.

Production cost of apple indicated that land preparation cost for apple orchards was lower in Kullu as compared to Shimla varying between Rs. 15 to 17 thousand per hectare in district Kullu and Rs. 17 to 18 thousand in district Shimla. Further, costs of material (seed, fertilizers and chemicals) were higher in district Kullu when compared to district Shimla. Regarding cost of irrigation the farmers of district Shimla were spending Rs. 27178 and Rs. 26593 per hectare in Theog and Narkanda blocks of district Shimla respectively whereas, this cost was absent in district Kullu. The hired labour cost was almost equal in both the study districts varying

between Rs. 15 to 17 thousands in study blocks. In district Shimla, the total production of aple during the years 2010-11 was 3506 and 2383 qtls at Theog and Narkanda block respectively. Out of total production about 5 to 6 percent was retained at home for consumption and remaining part disposed of in markets. The price received by the growers varied between Rs. 3833 and Rs. 3395 per quintal in Theog and Narkanda block respectively. Total apple production in the orchards of selected farmers of district Kullu was 4853 and 5814 qtls at Nagar and Kullu blocks respectively. The reason behind higher prices in Kullu block is only the benefit of early harvesting period in this area. only two marketing channels are adopted by orchardists i.e. producer-wholesaler-traders and producer to MIS. In district Shimla about 97 per cent of the marketed surplus was sold to wholesaler/traders and remaining three per cent to HPMC under MIS scheme. The prices of apple have been recorded to be Rs. 3833 and 3395 per qtl in Theog and Narkanda block respectively. In district Kullu, 100 per cent of the producers have sold their produce to wholesaler-traders.

Channel wise marketing costs of apple at farmers' level indicate that cost of picking, filling in boxes/bags/container was Rs. 225 per qtls under Channel-1 and channel-2 in Theog and Narkanda block of district Shimla. In case of district Kullu, generally, the apples are packed in crates and sold at nearby local markets. It is because of this reason that the costs of picking/filling are low as compared to that of district Shimla. The transport costs were higher, Rs.150 per qtl due to longer distance of market in Theog block. In other cases, it varied between 60 to 70 rupees from orchard to road head and road head to market. The apple offered by the growers under MIS has never been rejected, neither by the governmental agencies nor by the private traders. Although, all the farmers are eligible to take advantage of the MIS, 50 per cent of farmers of district Shimla and 80 per cent of district Kullu have not shown any interest to sell their produce to MIS agencies because of late payments. Though, 100 per cent of the farmers understand that this scheme had helped in increasing area under target crop and felt that this scheme is very helpful in increasing in farm income especially at the time of glut production.

The problem analysis of procurement agencies indicate that both of these suffer from financial problems and problems arising due to inter-agency competition. These also have to compete with the traders who can alter the prices as per market situation whereas the agencies don't have such flexibility. Poor road connectivity, unavailability of transportation and many times lack of buyers are some of the problems encountered by the procurement agencies. On the other hand the employees of the agencies entrusted with procurement task complained about aspects like transfer policy, their boarding and lodging arrangements and lack of cooperation

from farmers etc. The traders associated with the buying of culled apples complained about the fact that there is no fixed auction schedule and there is no information about quantity of culled apple available for sale during the auctions. Lack of information about the quality of apple being offered for sale was another area of their concern. They also complained about the nexus between some of the officials and traders and the fact that some unregistered traders were also operating.

The farmers, focus point of the scheme, felt concerned about the unremunerative prices of good quality apples and also the apple offered under MIS. The low prices combined with high volatility in prices during the season and across the years, made them feel insecure. They also complained about the malpractices prevalent in the markets and they were usually cheated on this account. During the peak harvesting season, they faced acute shortage of trucks for transportation of apples. Unavailability of cold storages compelled them to sell the produce despite glut in the market. The lack of processing facilities was also a problem reported by them. Delay in payments by traders as well as by the MIS procurement agencies greatly angered there farmers.

Efficiency of market intervention scheme

The MIS in the state covers fruits like apple, kinnow, malta and santra since 1990-91. Galgal was included during 1995-96 and mango during 1998. The MIS is being implemented in 9 districts for apple, for kinnow, malta, sangtra and galgal 8 and for Mango also 8 districts are being covered. The payments due to the apple farmers are never made instantly; lag is about ten months and even more. Despite this lag all the payments are not made in cash. The procurement of fruit under the scheme is strictly at the price announced and notified by the state government beforehand. The procurement cost is being born by the administrative department i.e. Horticulture department. The price paid to farmers for the apple procured by the designated agencies has increased from Rs. 3.75/Kg during the year 2000-01 to Rs. 5.25/Kg during the year 2008-09 after which it has remained constant. The quantity of apple procured was as low as 912 MT during 2009-10 and as high as 111154 MT during 2010-11. For quality check up detailed guidelines are issued for the guidance and strict adherence by the procurement agencies as well as staff involved. The procured fruits are used for two purposes viz processing purposes and sale in the open market. The market intervention scheme has been implemented for the welfare of farming community. This is apparent from the fact that despite the significant quantities procured and their utilization by way of processing and open market sales, the venture is loss making preposition for the government. Under the scheme reimbursement of losses is made through state department of horticulture after the

submission of audited accounts by concerned agencies. The state government reimburses the procurement cost and overhead expenses and losses after deducting the sale proceeds received by way of open market sale and utilization in processing units and any other income, if any, to the procurement agencies.

Suggestions:

The suggestions emerging from the analysis and in some cases made by the farmers have been summarized in the following text:

- The State Govt. should tackle the issue of late payments with the concerned agencies so that farmers do not suffer.
- The quality of MIS produce needed to be improved so that problem of shortage of buyers is eliminated to some extent.
- Arrangements of vehicles at the time of peak season need to be improved so that produce can be handled safely, with low cost and well in time.
- There is a need of finalizing the auction place for selling of the produce and date and time of auction well in advance. This information can be passed on to interested traders through advertisement.
- Handling charges need to area specific so that the collection of produce especially in those areas where collection centers are away from road head is facilitated.
- Opening of new processing units is the immediate need in the state. With opening of these units MIS produce can be disposed off efficiently. If such arrangement are not made urgently the time may come when the scheme may become unviable.
- There should be equal distribution of collection centers to both the agencies so that competition between these does not arise.

ANNEXURE-I

COMMENTS RECEIVED

Review of Report on 'Evaluation of Price and Market Intervention Scheme in Himachal Pradesh'

I. AUTHOR: C. S. Vaidya

II. INSTITUTIONAL AFFILIATION: AERC, Himachal Pradesh University, Shimla

III. DATE OF RECEIPT OF REPORT: May 17, 2013

IV. DATE OF DESPATCH OF COMMENTS: June 14, 2013

V. GENERAL COMMENTS:

In Himachal MIS is being reported regularly for apple, there are not many instances of PSS in the state. The present study is therefore evaluation of MIS in Himachal Pradesh (HP). A soft copy of draft report was received on the above date. The enclosed file with report did not contain any other file of information. Though we are often told that an AERC will send all possible data related to study (secondary or primary data) to principal investigator (PI) of the study. The report to some extent adheres to the content, chapter details, proposed table, etc., sent by PI at different points of time. Certain portions of the chapter/sections (sent in scheme of report, Oct 26, 2012) did not find a place in the existing report. As a result some objectives of the present study remain unaddressed. At times certain key information is not available in table. Dearth of such information put a question mark on the entire process of sampling of the present study. Such points/ comments specific to Methodology, Results and Discussions are presented below.

VI. COMMENTS ON METHODOLOGY:

1. The basis for selection of districts in Himachal Pradesh (Shimla, Kullu) is not available in the report.

2. In a sample of 30 farmers what is distribution of marginal, small, medium and large farmers in a district is not clear from report. (Table 1.1 is not understandable)

VII. COMMENTS ON RESULTS & DISCUSSIONS:

1. Researchers in the respective AERCs have been advised to adept the scheme of report, tables, title of tables as per their needs. Accordingly, 'targeted crops', 'studied blocks' and 'villages' must be replaced with the exact name of the respective crop, block and village in the report.

2. Background of study area should have provided some information on storage and processing facilities in the region since such facilities are extremely important for apple.

3. The number of procurement centers in Table 4.4 is for Shimla and Kullu. What about procurement centers in other districts of Himachal Pradesh. Believe the agencies dealing with MIS (HIMFED, HPMC) have information on MIS procurement centre-wise. Such information is extremely important to discuss coverage of MIS procurement in apple in the state of Himachal.

4. The current report is silent about the objective of study on 'efficiency of MIS procuring agency'. As per email / letter dated Oct 5, 2012, the respective AERC was requested to gather information on questions those relate to efficiency of procurement agency (a list of 20 questions).

5. One of the important objectives of the present study is to understand problems of different stakeholders in operation of MIS, the current report has however studied problems faced by farmers only. Problems of other stakeholders have been ignored.

6. Some findings in Tables 6.18 need to be strengthened with consistent logic/analysis of existing information. For example, information in different tables of report suggests that all apple growers are beneficiary of MIS. Yet apple growers in Table 6.18 are complaining about discrimination, exclusions, delay in payment as reason for not participating in MIS.

7. On similar line delay in payment is an important issue; what is the extent of delay in terms of number of days? What is the mode of payment (check or cash) for MIS procurement to farmers? These are some important questions those need some deliberations.

8. In the existing report suggestions to improve MIS operation is missing;

9. The report does not include chapter on conclusions, references.

In the light of the above queries and concerns I request Principal author of the present report to concentrate on the study and meaningfully complete different objectives of the study.

ANNEXURE-II

ACTION TAKEN REPORT

The comments received from the coordinator of the study have been addressed and detailed below for quick reference.

I. General Comments:

A separate chapter has been included in the study report to include the information required by the coordinator as per his communication of Oct 26, 2012.

II. Comments on methodology:

1. Basis of selection of districts included in the study.
2. Size classification of sample presented in the form of table and text.

III. Comments on results and discussion:

1. The terms ‘targeted crop’, ‘studied blocks’ and ‘studied villages’ have been replaced with appropriate names.
2. The information on storage and processing facilities in the region has been included in the study.
3. A table providing details of centre wise details of procurement under MIS has been included.
4. A separate chapter included on ‘Efficiency of MIS’.
5. Problem analysis of different stakeholders presented in chapter-6.
6. The logic provided in chapter-6.
7. Extent of delay in payments mentioned at appropriate place in the study.
8. Suggestions for improvement provided.
9. Chapter on conclusions included.