BUILDING UP OF AN EFFICIENT MARKETING SYSTEM TO OBVIATE NEED FOR A LARGE SCALE STATE INTERVENTION IN HIMACHAL PRADESH

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CONTENTS

EXECUTIVE SUMMARY

Abstract: The study analyses market intervention schemes and the possibilities of obviating the large-scale interventions in the prevailing marketing systems of agricultural products in Himachal Pradesh. It suggests ways and means how the efficiency of marketing system could be improved and the government interference reduced. Since the fruits and vegetable products are the only commodities entering marketing systems, the study has examined the marketing systems of apple a major commercial fruit of the state. The required data have been obtained from published and unpublished sources for the present study. The production system, marketed surplus, marketing system, State intervention in the procurement of apple has been examined in the present study. Delhi is the main market where about 80%-marketed surplus of apple was sold, followed by Chandigarh (10% of marketed surplus was sold). The producer's share in consumer's rupees was 52.40 per cent in Delhi market and 53.83 per cent in Chandigarh market. With increase in production and marketed surplus of apple in the State as well as peculiar nature like perishability, fragility, seasonality and bulkiness have resulted in number of post harvest/marketing problems. The main problems reported by the farmers include a lack of price information, lack of transportation, malpractices by traders, lack of storage, lack of market yards etc. The apple growers are being charged commission, which is against the law. About 5-7 percent of the producer's share is reduced by this malpractice. Himachal apple growers were paid about Rs. 49 crores as commission to commission agent on the total quantity of apples traded at Delhi market during 2001-02 season. The price support scheme was announced for potato in 1972 and was later extended to the procurement of apples in 1981 to purchased scabbed apples. In 1987, support prices for general and small orchardist were declared separately. The policy was changed in 1990-91, when only processing grade quality apples was procured. Since Feb. 1988, the State Government has set-up a price stabilization-cum-price Intervention Fund under the control of H.P. State Price Board. The growth and pace of improvement in various institutions established in Himachal Pradesh for assisting in marketing of agricultural products reflects to a considerable extent the degree of responsibility accepted by the government. To harness the income and employment potential of fruits and vegetables in Himachal Pradesh, urgent attention is needed to provide efficient network of roads, market intelligence, strict implementation of market regulation act, and construction of market yards in the producing areas.

Objective of the Study:

1. To examine the prevailing system of marketing of important commodities in Himachal Pradesh,

2. To examine the role of government and non-government agencies, such as FCI, Food and Civil Supplies Department, Cooperatives, NAFED, and private marketing agencies in procurement/purchase, storage and marketing of different commodities,

3. To examine deficiencies in factors impacting market efficiency, such as physical infrastructure, market intelligence and trade practices and suggest measures to improve them, and

4. To suggest measures to improve market efficiency.

Data sources

Primary as well as secondary data have been used in this study. The required information were collected from the state departments of Agriculture, Horticulture, Animal Husbandry, Land Records, H. P. Agricultural Marketing Board, Himachal Pradesh Horticultural Marketing and Processing Corporation Ltd (hpmc), H. P. Milk Federation, H. P. Wool Federation. H. P. Cooperative Federation, H.P.Fish Federation, FCI, Mother Dairy, etc. Information on marketing pattern of farm products were gathered from the past studies conducted by the Agro-Economic Research Centre, Himachal Pradesh University, Shimla.

Main Findings

Agricultural growth in the state

Farmers with highly commercialised and specialized production count on the availability of a good marketing system, which includes roads, wholesalers, commission agents and retailers. Proper marketing system means a lot to commercial farmers of fruits and vegetables. Development of marketing facilities in the state has made possible the specialization of production and the use of improved techniques of crop cultivation and of livestock rearing, which resulted in their higher yields and increased marketable surpluses. To acquire the means of higher returns—more productive seeds, fertilizers, pesticides etc.—farmers need cash, which they can only obtain by sales of farm products. Without cash and hence, without the means of marketing, this type of commercial production would not have been possible

in the state, nor the contribution it has made in freeing the substantial part of agricultural population from poverty, distress and drudgery.

Marketed Surplus, Marketing System and Price Spread of Farm Products

The analysis of marketed surplus of farm products shows that quantity sold by each household is quite small. A small producer does not have much in bargaining power at the market place. Hence, their returns as well as their market share in the final consumer's rupee is quite low and the marketing cost high. On an average, production of apple per farm was 267.71 boxes annually. Out of this production, 97 per cent was the marketed surplus. The culled apples were estimated to be about 9 per cent of total production. After picking and grading, good quality apples are packed in boxes. All farmers reported to be using c.f.b. boxes for packing. Pack animal, ropeways and human labourer were utilized for local transportation. Ropeways were reported to be economic and safe mode of local transportation. Trucks were used for transporting fruits from road head to markets. Delhi is the main market where about 80% marketed surplus of apple was sold, followed by Chandigarh (10% of marketed surplus was sold). The apples were sent to markets through forwarding agents who charged commission for the service. The producers' share in consumers rupees was 52.40 per cent in Delhi market and 53.83 per cent in Chandigarh market.

The study reveals that during 1975-79, the net price received by the apple growers decreased whereas during 1979-84 it has shown an increasing trend. Further, decreasing trend was also observed in 1989-95. However, net price received by growers were relatively higher in 2001-02 than the other periods under study. Analysis of data over a period of time revealed that the share of growers is generally higher in years of high prices, and lower in years of low prices. Further, the rise or fall in the producer's share is more than proportional to the rate of rise or fall in price level. This is so only because several costs remain constant, i.e., do not change with prices. The empirical evidence showed that the benefits of rise in prices are not fully availed of by the growers and their gains have been intercepted by the middlemen,

reflecting the inefficiency of the marketing mechanism. Delhi market is a regulated market but in real sense there is no regulation act enforced in true sense. The apple growers are being changed commission, which is against the law. About 5-7 percent of the producer's share is reduced by this malpractice. Himachal apple growers were paid about Rs. 49 crores as commission to commission agent on the total quantity of apples traded at Delhi market during 2001-02 season

The price support scheme was announced for potato in 1972 and was later extended to the procurement of apples in 1981 to purchased scabbed apples. In 1987, support prices for general and small orchardists were declared separately. The policy was changed in 1990-91, when only processing grade quality apples was procured. Since February 1988, the State Government has set-up a price stabilization-cum-price Intervention Fund under the control of H.P. State Price Board.

Government intervention in prices, incomes and markets is always controversial. There is debate about whether their benefits justify the costs of these programmes. Ideally government cost of direct farm payments depends upon the level of the support price relative to the free market clearing price and upon the elasticity of the supply and demand curves.

Role of Government and Non-Government Agencies in Marketing of Farm **Products**

In the underdeveloped regions like Himachal Pradesh, government's initiative in mobilizing the capital, administrative personnel and technical knowledge needed for progress in agricultural sector, is almost essential. It is also left to the government to take initiative in establishing extension, training research and inspection services for marketing. Circumstances may also make it necessary for them to take a lead in stabilizing prices and supplies of farm products, developing special schemes and programmes for needy groups and developing a potentially important marketing channel for special product. The growth and pace of improvement in various

institutions established in Himachal Pradesh for assisting in marketing of agricultural products reflects to a considerable extent the degree of responsibility accepted by the government. Many of the areas calling for direct government action—improvement of transport, storage and information services, channelling of investment funds toward marketing have already been undertaken by various institutions discussed in this study. .

Market Infrastructure and Deficiencies in Factors Impacting Market Efficiency

Construction of road network in Himachal Pradesh has taken a big leap forward. The road length in 1971 was 10,378 kilometres, which by the year 2002 has increased to more than two and half times (i.e. 27,503 kms). There were 821 registered vehicles in 1971 while their number increased to 8,884 by 2001. The total capacity of all five cold storages in various producing areas is 5,000 tones. The capacity utilization of these cold storages was 48,000 boxes during 2003-04. The quantity of fruits procured by the processing plants of HPMC was 6063 matric tones during 2003-04. Besides, 9 small fruit processing units have been established by the state Department of Horticulture at various places in Himachal Pradesh which have a total capacity of 6.5 tones. The capacity utilization rate of these units was 19.40 percent in 2003-04. The Himachal Pradesh Government has installed 5 mechanised grading and packing houses in fruit producing areas of the state in the early 1980's. During the last 31 years 45 market yards have been constructed and 7 are under construction in Himachal Pradesh.

The amount of produce, the nature of the products, the physical facilities available and the characteristics of their users determine marketing methods. With the change in these determinants the marketing methods change. The present system of marketing of farm products does not meet fully the requirement of these functions and services. The state has a socio-economic and agro-climatic advantage in producing fruits and vegetables crops. But this potential has not been fully tapped because of various post harvest constraints faced by the farmers. The main problems reported by

the farmers include a lack of price information, lack of transportation, malpractices by traders, lack of storage, lack of market yards etc. To harness the income and employment potential of fruits and vegetables in Himachal Pradesh, urgent attention is needed to provide efficient network of roads, market intelligence, strict implementation of market regulation act, and construction of market yards in the producing areas.

Suggestions for improving marketing of farm Products:

- Transport from farm to market should be improved and road network should be extended to un-marketed areas so that the commercialisation of agriculture could be stimulated in these areas.
- Priority should be given to develop marketing facilities and new market yards at some appropriate new locations in the villages itself in those areas where such facilities are not existing.
- Storage facilities should be provided at the market place.
- Improve quality of market intelligence and the information daily broadcasted.
- Emphasis should be given on transparency and shift transaction in the market and display of market information of other markets.
- Extension education and training should be an important activity of the Marketing Board and emphasis should be given on production of high value farm products and new marketing techniques.
- Credit and crop insurance for fruits and vegetables cultivation should be provided from the formal institutional sources so as to free the farmers form the clutches of the traders.
- Role of co-operatives in the marketing of various farm products should be strengthened and further enhanced.
- Search for new profitable market destination for fruits and vegetables of Himachal Pradesh should be made keeping in view the emerging competition from other states, especially from the Uttaranchal and Panjab. Detailed analysis of high-end markets and of shifts in consumer and producers preferences should be done.
- Strengthening of the fruit distribution network and the marketing services.

- Strict quality control for maintaining and further improving the market image of Himachal apples.
- Seasonal surveys of production of fruits and well designed market studies for designing efficient marketing strategies.
- Strengthening marketing extension system to transfer post harvest technology to the apple growers.

Technological changes are slowly taking place in performing various functions of apple marketing. In the hilly terrain the main thrust of technological changes should be on introducing road network so that drudgery of transportation through head load or through pack animals could be reduced. Where roads are difficult to be built a net work of rope ways connecting one hillock with another or across nullahs should be developed for cheaper and quick transport of produce, mechanical grading system has to go a long way in this hilly region. At present grading and packing facilities are not adequate. The supply of cfb boxes should be ensuring on reasonable rates. Proper weighing instruments should be strictly implemented in the markets.

In the present marketing system, most of the benefits are reaped by the affluent apple producers. It is suggested that an attempt should be made to strengthen the marketing system by organizing apple growers' cooperative society particularly small growers. Suitable policy measures, e.g.; establishing more sophisticated apple grading and packing houses equipped with modern facilities like chemical washing of fruits and waxing etc. Promotional efforts should be made for expanding markets, availability of timely and better transportation facilities, strict enforcement of market regulation will go a long way in improving marketing efficiency for Himachal apples.

Chapter-1

INTRODUCTION

Importance of the Study

The main objective of development planning of under developed regions is to achieve higher standard of living for the masses through increasing productivity per unit of land, of manpower and other resources. 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.

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 of Himachal Pradesh, if adequate marketing infrastructural facilities are made available to the people.

Marketing includes those economic activities, which are performed after the produce leaves the original point of production till it reaches the ultimate consumer. The efficiency with which the total marketing tasks are performed varies with how effectively the various activities, when put together, merge into a total marketing system. The interest of society in marketing involves around two related considerations: (a) the marketing efficiency with which activities along the continuum from producer to consumer are performed; and (b) the efficiency of marketing system in affecting change and adjustment when such is needed to ensure or restore alignment between what is produced and what the consumer demands.

Marketing in underdeveloped regions 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 some one 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.

Whether a marketing system is operated by private merchants, by governmental agencies, by cooperative societies, or by a combination of these, there are certain activities that the government has to perform, such as establishing standard weights and measures and regularly inspect the scales and other measuring devices used by merchants, and it should provide for the legal enforcement of contracts. Government programmes can assist in guiding commodities in the right quantities to the right places at the right times. In addition, government can provide a marketing information service. The other functions of marketing -- transportation, buying and selling, storage, grading, processing, and operating a banking system that provides both facilities for payment and access to short term credit to finance marketing operation -- may be performed in any of a variety of ways : private, governmental or co-operative.

This study on agricultural marketing has analysed the state intervention in the marketing of farm products in Himachal Pradesh. Pricing efficiency concentrated on how well consumer price signals are transmitted to the producer and the net price realized by the farmers in marketing of produce through different marketing agents. A study of complex interlinked marketing processes requires that the whole marketing system and its sub-systems should be analysed in totality. Examining the shortcomings of the past help learn lessons for future programmes and to improve market business environment. A study of marketing problems and understanding of the marketing system of surplus produce in Himachal Pradesh would help to improve the marketing process of these products.

Objectives of the study

The main aim of the study is to analyse and understand the existing marketing system so as to build up an efficient marketing system to obviate the need for large-scale state intervention. The study attempts to understand the prevailing marketing system and how is it functioning? Whether there is a large-scale state intervention in the market and if so, of what type and how could it be obviated? Whether an efficient

marketing system exists today, if not how could it be built? The specific objectives of the present study are:

1. To examine the prevailing system of marketing of important commodities in Himachal Pradesh,

2. To examine the role of government and non-government agencies, such as FCI, Food and Civil Supplies Department, Cooperatives, NAFED, and private marketing agencies in procurement/purchase, storage and marketing of different commodities,

3. To examine deficiencies in factors impacting market efficiency, such as physical infrastructure, market intelligence and trade practices and suggest measures to improve them, and

4. To suggest measures to improve market efficiency.

Data sources

Primary as well as secondary data have been used in the present study. The required information were collected from the state departments of Agriculture, Horticulture, Animal husbandry, the land records, H. P. Agricultural Marketing Board, Himachal Pradesh Horticultural Marketing and Processing Corporation Ltd (hpmc), H. P. Milk Federation, H.P. Wool Federation, H.P. Cooperative Federation, H.P. Fish Federation, FCI, Mother Dairy.

Information on marketing of farm products was gathered from the studies conducted by the Agro-Economic Research Centre, Himachal Pradesh University, Shimla.

Chapter-2

CHANGES IN AGRICULTURAL SECTOR OF HIMACHAL PRADESH

Introduction

Himachal Pradesh, spread over 65,673 square kilometres and with a population of 60.7 lakh for 2001, is situated in the Western Himalayan region in northwest India. The state is bordered by Jammu-Kashmir in the North, Punjab in the west and southwest, Haryana in the south, Uttaranchal in the southeast and Tibet (China) in the east. It is situated between 30^0 22' 40" and 32^0 12' 40" north latitude and 75^0 47' 55" to 79^0 04' 22" east longitude.

Its altitudes range from 450 meters to 6,500 meters above mean sea level. There is a general increase in elevation from west to east and from south to north. There is a great variation in the climatic conditions of Himachal Pradesh due to variations in elevation and aspect. The climatic conditions of the state vary from sub-humid tropical in the southern low tracts to cold alpine and glacial in the northern and eastern high mountain ranges. The state has three climatic seasons – summer (March to June), rainy (July to September) and winter (October to February). Due to a wide range of climatic conditions the state has diversity of flora and fauna.

Administratively the state has been divided into 12 districts. Ninety per cent of the population lives in rural habitations varying in size from isolated hamlets to conglomerated settlements. Villages are situated in valleys, on terraces, or on spur tops, at sites free from high winds or landslips and near to a water source and fertile land. Overall density of population in the state is 109 persons per square kilometre. Population of the state is growing at the rate of 1.7 per cent per annum. The literacy rate in the state is 77 per cent. In 2001 the per capita income in the state was Rs.21,368 per annum.

Broad Overview of the Economy

Agricultural development and industrialization are the two major sectors for productive employment generation and raising income of people. Large-scale industrialization is neither physically feasible alternative nor ecologically desirable in the hill areas. Therefore, agriculture is the key sector for employment and income generation in hill regions.

The economy of Himachal Pradesh as a whole has been growing at an average rate of 8.45 per cent per annum since 1970-71 (for details see Table 2.1). The primary sector (including agriculture, animal husbandry, mining etc.) grew at an average rate of 2.83 per cent per annum, whereas the secondary sector (industrial etc.) and tertiary sector (services etc.) grew at the rate of more than 16 per cent per annum. The result has been that the importance of primary sector in the economy has declined relatively. In 1970-71 the primary sector accounted for more than one-half share in the total net state domestic product (NSDP), which declined to one-fourth share by 2001. But still the primary sector is an important sector of the economy and its paramount role can be gauged from the fact that it provides employment and source of living to more than 70 per cent of the total population of the state. Although its relative share in the economy has declined but nonetheless the primary sector has been growing steadily over the years. The agricultural sector (including agriculture, horticulture, animal husbandry together) grew at an average rate of 2.8 per cent per annum (see Table 2.2).

In Himachal Pradesh various types of cereals, pulses, vegetables and fruits are grown due to its varied agro-climatic conditions. The low valley areas of the state where land is almost plain and fertile are suitable for intensive cultivation of cereal crops. Rice, Wheat, Maize and Barley are the major cereal crops of the state. The low hills are suitable for mix cropping. Mid hill zone is most suited for cereals and horticultural (fruit and vegetable) crops. High hill zone is most suitable for apples and dry & nut fruits.

Development of agriculture in the state is important not only for providing food to the increasing population but also for improving the standard of living of the people engaged in this sector. Agriculture in the state is characterized by certain peculiarities. The climate, soil, mountainous terrain, tiny and terraced fields, small size of land holdings, etc. limit the scope of extensive cultivation in the state. These characteristics also render the task of agricultural development more difficult in this hilly state as compared to the other sates in the plains. Agricultural development is a complex phenomenon, which depends on efficient administration, environmental and technological factors and the infrastructure facilities available in the region.

Table- 2.1: Share of Different Sectors of Economy in the State Domestic Product of Himachal Pradesh, at Constant (1980-81) Prices.

(Rs. in lakh)

Sectors	**1970-71**	**1980-81**	**1990-91**	**2000-2001**	**Annual growth 71-01%**
1. Primary sector	31,110 (54.6)	36,393 (50.3)	47,003 (42.9)	50559 (25.11)	2.83
2. Secondary sector	11,367 (20.0)	13,513 (18.7)	26,310 (19.1)	67884 (33.72)	16.57
3. Tertiary sector	14,446 (25.5)	22,376 (31.0)	41,767 (38.0)	82893 (41.17)	15.79
Total NSDP	56,923 (100.0)	72,282 (100.00)	1,15,080 (100.0)	201336 (100.00)	8.45

Source: Directorate of Economics and Statistics, H.P., Shimla

Table- 2.2: Share of Sub-sectors in Net State Domestic Product Originated from the Primary Sectors in Himachal Pradesh, at Constant (1980-81) Prices.

(Rs. In lakh)

Sectors	1970-71	1980-81	1990-91	2000-2001	Annual growth 71-01(%)
1.Agriculture and animal husbandry	21,613 (69.5)	26,934 (74.0)	38,112 (81.1)	39875 (78.87)	2.81
2. Forestry and logging	9,390 (30.2)	9,027 (24.8)	7,685 (16.4)	9235 (18.27)	-0.05
3. Fishing	34 (0.1)	116 (0.3)	240 (0.5)	235 (0.46)	19.70
4.Mining and quarrying	73 (0.2)	316 (0.9)	966 (2.0)	1214 (2.40)	52.10
Total	31,110 (100.0)	36,393) (100.0)	47,003 (100.0)	50559 (100.0)	2.08

Source: Directorate of Economics and Statistics, H.P., Shimla

Livestock Sector Production

There is a greater pressure on agriculture in hills than in plains as there is very little geographical area, which is cultivable due to inaccessible, difficult, undulated topography and steep slope. Net cultivated area as a proportion of the total geographical area is only about 10 per cent in Himachal Pradesh. The varied agro-climatic conditions in hills however permit the cultivation of a very wide range and varieties of different crops including fruits. Animal husbandry is an integral part of agriculture playing a very vital role in predominantly rural economy of hills.

In a predominantly rural economy like Himachal Pradesh, the importance of livestock in supplying milk, meat, wool and other materials needs no emphasis. As per 1997 livestock censes the number of livestock in the state 45.76 lakh. The cattle population accounts for 43.74 per cent of total livestock population. Goat population accounts for 20.68 per cent, sheep for 19.77 per cent, and buffaloes for 14.25 per cent of the total livestock population in the state. The composition of livestock differs in different climatic zones. In the low hills buffaloes out number other categories of livestock, in mid hill zone cattle are important, whereas in high hills the sheep and goats are predominant (See Table 2.3 & 2.4).

Having cognisance of low yield of milk, meat and wool, improvement of livestock received the attention of Himachal Pradesh Government. The development programmes envisaged improvement of livestock through scientific breeding, balanced feeding and expansion of curative and preventive measures for livestock disease control. More stress was laid on the cross-breeding programme to cover the entire indigenous livestock population so that, in the long run, it would result in increase in milk, meat and wool production and thus help raise the economic conditions of the rural population. But only 26 per cent population of cattle and 15 per cent of sheep population were of cross bread stock as per the 1997 livestock census of the state.

The cattle population in state increased only marginally. In the low hills the main emphasis is on buffaloes, which are higher milk yielder as compared to local cows. Buffaloes population in the state increased at the rate of 0.80 per cent per annum during 1972 to 1997 period. Population of goats was increasing at the rate of 0.17 per cent per annum. However, largest growth rate was in case of pig's population (2.43% per annum) during the reference period (see Table 2.5).

Table- 2.3: District-wise Total Livestock Population in Himachal Pradesh During 1997.

Type of Livestock	Bilaspur	Chamba	Hamirpur	Kangra	Kinnaur	Kullu	Lohal-Spiti
Cows:							
CB	11124	12636	7457	29637	8000	37455	3763
IB	6016	118324	3543	118341	7049	53062	3021
Bullocks:							
CB	7758	5635	19013	24990	1588	6891	592
IB	29762	104857	19721	151359	4687	47564	1077
Total:							
Cattle	54660	241452	49734	374336	21324	144972	8453
CB	18882	18271	26470	104627	9588	44346	4355
IB	35778	223181	23264	269700	11736	100626	4098
Buffaloes He	77943	30629	86610	127544	2	710	-
Buffaloes	3437	1719	1842	6520	-	74	-
Total	81380	32348	88452	134064	2	784	-
Yaks	-	293	-	-	596	-	2386
Sheep	12353	255543	31620	118224	57199	102617	37449
CB	6538	7002	3942	25863	29046	7471	4736
IB	5815	248541	27678	92361	28153	95146	32713
Goats	48323	164415	29609	194650	27992	47213	11519
Horses & Ponies	1005	1221	1149	3997	974	1602	2109
Mules & Donkeys	1418	3598	579	3965	2897	616	2121
Camels	9	-	-	46	-	-	-
Pigs	525	86	27	464	37	53	-
Total Livestock	199673	698956	201170	829737	111021	297857	64037
Poultry	20707	33379	18995	135257	10393	19881	3371

Table- 2.3: Contd…

Type of Livestock	Mandi	Shimla	Sirmour	Solan	Una	H.P.
Cows:						
CB	74142	78977	30354	30920	7323	381788
IB	144257	105429	90760	26269	14714	690785
Bullocks:						
CB	22939	32757	12890	15363	6198	156614
IB	166420	84202	81941	48474	32575	772639
Total Cattle	407758	301365	215945	121026	60810	2001826
CB	97081	111734	43244	46283	13521	538402
IB	310677	189631	172701	74743	47289	1463424
Buffalo	82612	15775	38404	65613	82711	608553
He buffalo	2342	862	1683	21249	4092	43820
Total	84954	16637	40087	86862	86803	652373
Yaks	-	-	-	-	-	-
Sheep	161531	102684	12299	11825	1547	904891
CB	19213	25285	1223	9180	690	140189
IB	142318	77399	11076	2645	857	764702
Goats	162055	70508	86426	66642	37177	946529
Horses & Ponies	2170	5226	663	11566	344	320261
Mules & Donkey	5247	5717	2330	2315	240	31043
Camels	-	-	40	10	63	168
Pigs	285	953	1032	1134	74	4670
Total Livestock	824000	503090	358822	301380	187058	4576801
Poultry	64346	42524	9600	12156	11041	381650

Source: Livestock Census, H.P.

Table- 2.4: Livestock Composition in Different Districts of Himachal Pradesh, 1997.

(% of total)

Districts	Percent Composition of Livestock					
	Cattle	Buffaloes	Sheep	Goats	Others	Total Number
Bilaspur	27.37	40.76	6.18	24.20	1.49	199673
Chamba	34.54	4.63	36.56	23.52	0.75	698956
Hamirpur	24.72	46.97	15.71	14.71	0.86	201170
Kangra	45.11	16.16	14.25	23.46	1.02	829737
Kinnaur	19.21	Neg.	51.52	25.21	4.06	111021
Kullu	48.67	0.26	34.46	15.85	0.76	297857
L & Spiti	13.20	-	58.48	17.99	10.33	64037
Mandi	49.49	10.31	19.60	19.67	0.93	824000
Shimla	59.90	3.31	20.41	14.02	2.36	503090
Sirmour	60.18	11.17	3.43	24.09	1.13	358822
Solan	40.16	28.82	3.92	22.11	4.99	301380
Una	32.51	46.40	0.82	19.88	0.39	187058
Total	43.74	14.25	19.77	20.68	1.56	4576801

Source: Livestock Census, H.P.

Table- 2.5: Annual growth in population of various types of Livestock in H.P. during 1972-1997.

Type of livestock	Bilaspur	Chamba	Hamirpur	Kangra	Kinnaur	Kullu
Cows	0.89	0.30	-0.32	-0.38	0.77	0.36
Bullocks	-0.92	-0.13	-1.18	-0.86	-1.09	-1.20
Cattle	-0.51	0.09	-1.03	(-)0.14	0.01	-0.39
Buffaloes	1.06	+0.06	1.41	0.41	-3.11	-1.64
Yaks	-	-3.22	-	-	1.20	-
Sheep	-2.32	0.14	-1.26	1.80	-0.46	-0.01
Goats	0.55	0.52	0.33	2.80	-0.65	-0.63
Horses, Ponies, Mules	25.66	23.07	4.99	-0.26	+1.45	2.09
Pigs	42.66	53.33	4.30	4.17	45.33	-
Total	0.01	0.22	-0.10	0.64	-0.39	-0.31
Poultry	7.48	1.15	10.22	5.59	11.13	6.05

Table- 2.5: Contd….

Type of livestock	Lahaul Spiti	Mandi	Shimla	Sirmour	Solan	Una	H.P.
Cows	1.06	0.68	0.12	0.15	-0.54	0.08	0.37
Bullocks	0.70	-0.02	-0.85	-0.58	-0.60	-1.43	-0.67
Cattle	0.98	0.33	-0.32	-0.20	-0.58	-1.03	-0.18
Buffaloes	-	-3.89	-0.49	1.07	2.50	1.21	0.80
Yaks	0.33	-	-	-	-	-	-1.14
Sheep	0.47	-0.25	-1.76	-2.85	-2.19	-3.35	-0.52
Goats	0.93	-0.25	-0.95	-0.12	-0.09	-1.32	0.17
Horses, Ponies, Mules	1.04	6.88	13.19	0.76	27.15	-2.14	4.71
Pigs	-	5.42	-1.23	0.78	15.98	20.67	2.43
Total	0.64	0.05	-0.79	-0.36	0.14	-0.52	-0.04
Poultry	2.17	6.97	2.48	-1.66	3.11	1.61	4.09

District-wise annual production of various types of livestock products in Himachal Pradesh are shown in Table 2.6. Milk production in the state has been increasing at the rate of 3 per cent per annum in recent years. In 1995-96 total fluid milk production in the state was 67,62,800 tones. Low hill and mid hill zones are the milk-shed areas of the state. Wool production in 1995-96 was 15,481 quintals. Average annual growth rate of wool production was one per cent. Some of the wool produced is used domestically and the rest is sold to outside traders. State also produces 721 lakh eggs per annum. Kangra and Mandi districts are the major producers of eggs. The eggs production registered a better growth rate of about six per cent, per annum during the period 1990 to 1996. Milk, meat and eggs produced in the state suffice only a part of the total demand in the state for these products rest of the amount is brought in from Punjab and Haryana.

Govind Sagar reservoir and Pong reservoir are the main fish production centres in Himachal Pradesh. About 13 thousand fishermen earn their living from fish catch. Total fish production in 1994-95 was 5,285 metric tones. Data presented in Table 2.7 show that the fish production has been fluctuating from year to year. The fish produce

of Himachal Pradesh is marketed mainly in Chandigarh and Calcutta markets. Fishermen have formed cooperative marketing societies for fish marketing purposes.

Table 2.6 : District-wise Annual Growth in Production of various Livestock Products in Himachal Pradesh.

Districts	Milk Production '000 tones			Meat production '000 tonnes		
	1990-91	1995-96	Annual Growth %	1990-91	1995-96	Annual Growth %
Bilaspur	26.12	37.44	7.22	97.04	80.31	-2.87
Chamba	34.90	46.52	5.55	241.33	438.87	13.64
Hamirpur	51.57	77.37	8.34	176.60	98.10	-7.41
Kangra	131.12	144.32	1.68	501.26	547.98	1.55
Kinnaur	3.04	4.61	8.61	205.62	75.10	-10.57
Kullu	32.02	28.25	-1.96	248.98	396.41	9.87
L & Spiti	2.17	4.12	14.98	319.85	144.84	-9.12
Mandi	82.26	96.64	2.91	433.85	305.80	-4.92
Shimla	60.60	75.16	4.00	1005.31	1215.92	3.49
Sirmour	44.71	46.72	0.75	529.24	132.98	-12.48
Solan	62.94	60.06	-0.76	252.76	111.51	-9.31
Una	41.16	55.07	5.63	36.95	45.54	3.87
H.P.	572.61	676.28	3.02	4049.00	3593.28	-1.88

Source: Directorate of Animal Husbandry, H.P., Shimla-5.

Table 2.6: Contd….

Districts	Wool production '000 Kg.			Eggs production in Lakh		
	1990-91	1995-96	Annual Growth %	1990-91	1995-96	Annual Growth %
Bilaspur	25.23	15.29	-6.56	36.24	69.92	15.49
Chamba	393.45	442.85	2.09	63.95	64.75	0.21
Hamirpur	61.52	53.54	-2.16	22.73	31.24	6.24
Kangra	156.78	274.76	12.54	172.04	272.10	9.69
Kinnaur	61.57	72.49	2.96	6.34	8.96	6.89
Kullu	220.91	202.60	-1.38	50.22	23.64	-8.82
L & Spiti	54.43	51.06	-1.06	7.50	7.62	0.27
Mandi	209.02	225.52	1.29	53.24	109.44	17.60
Shimla	177.60	127.93	-4.66	40.93	60.32	7.90
Sirmour	43.23	54.64	4.40	30.62	27.74	-1.57
Solan	33.38	20.95	-6.21	30.85	18.92	-6.44
Una	9.87	6.78	-5.22	17.04	26.18	8.94
H.P.	1452.08	1538.13	1.10	531.70	720.81	5.93

Table- 2.7: Annual Value and Production of Fish and Number of Fisherman in Himachal Pradesh.

Year	Fish Production (M.T.)			Total Production (M.T.)	Value of fish (Rs. Lakh)	No. of licensed fisherman
	Govind Sagar reservoir	Pong reservoir	Total			
1975-76	476	-	-	950	2.37	6560
1976-77	509	98.1	607.1	1000	4.00	7628
1977-78	707	265.4	972.4	1860	7.44	6786
1978-79	754	537.0	1291.0	2200	8.80	7840
1979-80	716	596.0	1312.0	2250	11.25	7660
1980-81	707	569.0	1276.0	2300	13.8	8956
1981-82	653	443.0	1096.0	2523	12.92	8901
1982-83	562	498.8	1060.8	2870	25.83	11040
1983-84	425	469.9	894.9	2630	25.25	9720
1984-85	505	478.9	983.9	2700	131.80	8788
1985-86	547	552.6	1099.6	12950	29.51	18774
1986-87	377	519.2	896.2	2460	46.56	8220
1987-88	538	797.4	1335.4	4095	57.71	9220
1988-89	784	475.8	1259.8	4375	71.00	10868
1989-90	815	489.2	1304.2	4620	111.11	11021
1990-91	816	442.0	1258.8	5132	152.10	12109
1991-92	855	485.0	1340.0	5995	160.78	12495
1992-93	964	448.4	1412.0	6390	186.37	12467
1993-94	1050	372.7	1422.7	6630	160.00	13321
1994-95	1128	370.8	1498.8	5285		8455

Land Holdings

Himachal Pradesh is a region of tiny land holdings. Marginal farms (farms below one hectare size) account for 64.39 per cent of total holdings. Small farms (1-2 ha.) account for 20.10 per cent, semi-medium (2-3 ha.) for 11 per cent, medium (3-4 ha.) for 3.9 per cent and large farms (above 4 ha.) account for 0.55 per cent of total land holdings in the state. This means marginal and small farms together account for about 84.49 per cent of total land holdings in the state. This situation is true for almost all the districts in the state (see Table-2.8). The average size of land holding in the state is 1.16 hectares.

Due to pressure of population growth, and sub-division and fragmentation of holdings, the number of farms is increasing and the average farm size is declining overtime. Because of small sized and fragmented land holdings, the scope of large scale agricultural mechanization ad commercialisation involving cereal crops are not possible. Therefore, to enhance rural income and employment in the state what is needed is the developments of those crops, which are of high value, low weight and labour intensive, have climatically comparative advantages over the neighbouring plains of the country. The agro-climatic conditions of various zones of Himachal Pradesh are suited for the production of various types of sub-tropical and temperate fruits and vegetables. The seasons of growing of these crops are such that there is no local competition for them when these are sold in the markets of the plains. To achieve that goal government agencies serve agriculture through service agencies, communications and research. Regulatory agencies act to protect farmers in their sales of output and purchases of inputs. The development of appropriate marketing infrastructure also plays an important role in this process.

Changes in Cropping Pattern

Cropping pattern indicates the efficiency of land use allotted to different crops depending on their profitability and farmers choice. Whether or not the farmers in Himachal Pradesh are becoming more specialized keeping in view their agro-climatic

conditions has been analysed in this section. Specialization involves restricting economic activity to few commodities. The degree of farm enterprise specialization differs by commodities. Fruit, vegetables and dairy farms tend to be highly specialized. However, many farmers produce more than one commodity. Farmers also differ in process of specialization. Many confine their activities for farming, but others may also become involved in off-farm marketing activities. The tendency towards specialization is reflected by the land use and cropping pattern of the state.

The cropping pattern in different districts of Himachal Pradesh is shown in Tables 2.9, 2.10 and 2.11. The cropping pattern of a region is affected by various factors such as soil type, climatic conditions, irrigation facilities, market facilities, relative prices of crops, etc. Analysis of cropping pattern is important in planning for rational and balanced programme of crop production.

Table 2.8: Percent number and area of total operational holdings under different sizes of farms in Himachal Pradesh (1995-96 census).

Districts	Marginal		Small		Semi-medium		Medium		Large		Total holdings	
	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area	Actual No.	Area (Ha.)
Bilaspur	59.19	25.07	25.26	32.20	12.92	29.50	2.54	12.16	0.09	1.07	48656	52620
Chamba	69.36	36.18	21.51	34.07	8.07	23.10	1.02	5.77	0.04	0.88	64524	56697
Hamirpur	64.96	25.89	20.49	25.97	10.92	26.89	3.40	17.08	0.23	4.17	69193	76579
Kangra	73.73	27.93	14.87	21.95	7.88	22.54	3.07	18.82	0.45	8.76	224327	210095
Kinnaur	54.38	16.16	24.23	23.00	15.90	29.52	4.89	18.61	0.60	12.71	9693	14311
Kullu	75.88	38.48	16.24	29.38	6.69	23.49	1.16	8.20	0.03	0.45	57061	44233
L & Spiti	43.86	13.86	26.26	24.35	24.10	41.55	5.40	17.02	0.38	3.22	3960	6423
Mandi	66.54	29.91	22.07	32.65	9.66	26.87	1.68	9.87	0.05	0.70	136619	129676
Shimla	54.64	18.28	24.06	24.62	15.20	29.64	5.61	22.38	0.49	5.08	90005	125917
Sirmour	44.19	9.22	21.67	13.62	18.45	22.73	12.53	32.99	3.16	21.44	45048	102510
Solan	40.09	10.92	28.83	19.28	20.46	31.13	9.60	30.15	1.02	8.52	49584	91580
Una	64.85	1853	17.47	17.62	10.41	21.87	5.74	24.75	1.53	17.23	64137	89035
H.P.	64.39	23.03	20.10	24.08	11.02	25.65	3.94	19.41	0.55	7.83	862897	999676

Source: Directorate of Land Records, Himachal Pradesh, Shimla.

Table 2.9: District wise changes in area under major crops in Himachal Pradesh.

(Area in Hectares)

Districts	Rice					Maize				
	1971-72	1981-82	1991-92	1999-2000	Annual Growth Rate %	1971-72	1981-82	1991-92	1999-2000	Annual Growth Rate %
Bilaspur	3748	3733	2772	1516	-2.05	20495	238471	26983	26518	+1.01
Chamba	3218	3105	2953	2828	-0.42	24570	26946	27216	25307	+0.10
Hamirpur	5565	5180	3286	24.87	-1.90	26223	30127	32540	32036	+0.76
Kangra	40233	34084	36131	36686	-0.30	53059	48610	57746	58951	+0.73
Kinnaur	32	22	29	30	-0.21	217	476	493	404	+2.97
Kullu	3655	3133	2571	1719	-1.82	11563	15081	17671	14809	+0.97
L & Spiti	-	-	-	-	-	-	33	30	34	+0.31
Mandi	23336	25000	22113	20447	-0.47	32701	39399	49386	47118	-1.64
Shimla	6029	5649	3430	2923	-1.77	19597	22118	20705	16685	-0.51
Sirmour	5013	4948	4757	5427	+0.28	22451	26162	25821	24337	+0.28
Solan	3928	4363	3534	3481	-0.39	22197	24039	25130	24189	+0.30
Una	2750	2061	1613	2677	-0.09	23885	28450	30127	29518	+0.81
H.P.	97507	91278	83189	79221	-0.64	256958	285312	313856	299906	+0.07

Contd..

Table- 2.9: Contd..

(Area in Hectares)

Districts	Wheat					Cereals				
	1971-72	1981-82	1991-92	1999-2000	Annual Growth Rate %	1971-74	1981-84	1991-94	1999-2000	Annual Growth Rate %
Bilaspur	17983	25146	26401	26970	+1.72	42998	54434	56408	55292	+0.82
Chamba	15670	16765	19910	20901	+1.15	53856	56605	53754	54631	+0.04
Hamirpur	29602	35463	35764	34993	+0.63	63719	71090	71281	69650	+0.32
Kangra	86112	78128	90575	94095	+0.32	179748	174231	188905	193095	+0.25
Kinnaur	1501	1452	656	371	-2.01	10395	8571	5726	4683	-1.89
Kullu	16806	19196	22855	21172	+0.89	34811	46162	48092	42430	+2.44
L & Spiti	457	348	273	175	-2.12	1851	1722	1169	923	-1.72
Mandi	53436	68217	68140	68477	+0.97	127446	143595	146175	142427	+0.40
Shimla	31600	35493	29684	19758	-1.29	80271	82287	65194	50512	-1.27
Sirmour	26601	29399	30720	27722	+0.14	60499	65446	64770	60784	+0.01
Solan	18826	23666	24641	23857	+0.92	48285	53758	56058	53238	+0.35
Una	23249	32382	32270	32096	+1.31	48191	64305	62854	64292	+1.15
H.P.	321843	365655	381889	370587	+0.52	762071	821364	820386	791957	+0.13

Contd..

Table- 2.9: Contd..

(Area in Hectare)

Districts	Pulses					Food grains				
	1971-72	1981-82	1991-92	1999-2000	Annual Growth Rate %	1971-72	1981-82	1991-92	1999-2000	Annual Growth Rate %
Bilaspur	8156	3375	2152	439	-3.26	51153	57809	58560	55731	+0.30
Chamba	3336	3661	3556	3421	+0.09	57193	60232	57310	58052	+0.05
Hamirpur	6174	3362	845	239	-3.31	69893	74453	72126	69889	Neg.
Kangra	12726	7640	5227	5205	-2.04	192475	181870	194132	198300	+0.10
Kinnaur	273	466	1125	985	+8.99	10668	9036	6851	5668	-1.62
Kullu	2987	3117	3743	2816	-0.19	47798	49281	51835	45246	-0.18
L & Spiti	193	255	1033	1453	+22.51	2044	1901	2202	2376	+0.56
Mandi	5920	6254	5528	3374	-1.48	133500	149933	151703	145801	+0.31
Shimla	4832	4818	7205	5544	+0.50	85103	87105	72399	56056	-1.17
Sirmour	5259	4182	4374	4703	-0.36	65758	69631	69144	65487	-0.01
Solan	11274	6816	4753	3513	-2.37	59559	60574	60931	56751	-0.16
Una	11783	3015	1508	864	-3.19	59974	67625	64366	65156	+0.29
H.P.	72914	47017	41049	32556	-1.50	834985	868381	861559	824513	-0.04

Contd..

Table-2.9: Contd…

(Area in Hectare)

Districts	Fruits					Vegetables				
	1971-72	1981-82	1991-92	1999-2000	Annual Growth Rate %	1971-72	1981-82	1991-92	1999-2000	Annual Growth Rate %
Bilaspur	86	134	270	505	16.80	227	229	338	500	+4.14
Chamba	321	964	1573	1924	17.21	641	673	789	810	+0.90
Hamirpur	12	14	26	61	14.08	205	185	178	202	-0.05
Kangra	917	2545	5206	5536	17.36	1843	1528	2331	2529	+1.28
Kinnaur	519	938	1926	2421	12.63	390	520	319	844	+4.01
Kullu	1300	4229	6991	8829	19.97	1250	1460	1840	2472	+3.37
L & Spiti	2	5	24	58	96.55	364	1212	907	951	+5.56
Mandi	3580	4773	5789	6181	2.50	2045	3014	3874	5336	+5.54
Shimla	6707	12370	23133	28758	11.33	10188	9337	9884	13135	+0.99
Sirmour	1602	1147	1513	1841	0.51	857	1400	2302	3475	+10.53
Solan	678	701	733	945	1.35	881	1506	1984	3444	+10.03
Una	147	122	426	663	12.10	286	575	754	977	+8.33
H.P.	15797	27886	47610	57722	9.15	19393	21714	25500	34675	+2.71

Contd..

Table-2.9: Contd..

(Area in Hectare)

Districts	Total Food Crops					Oils seeds				
	1971-72	1981-82	1991-92	1999-2000	Annual Growth Rate %	1971-72	1981-82	1991-92	1999-2000	Annual Growth Rate %
Bilaspur	51807	58423	59489	57024	+0.34	632	1168	1034	511	-0.66
Chamba	58228	60975	59789	60914	+0.15	2521	2947	2310	3385	+1.18
Hamirpur	70448	75023	72465	70280	Neg.	304	856	305	256	-0.54
Kangra	195810	186361	201906	206917	+0.19	12754	9689	9647	6509	-1.69
Kinnaur	11603	10527	9098	8949	-0.79	5	57	31	4	-0.68
Kullu	50473	55159	60852	56817	+0.43	549	561	760	621	0.51
L & Spiti	2410	3115	3139	3385	+1.40	19	14	14	18	-0.18
Mandi	139278	157798	161634	157650	+0.45	981	1047	1295	1218	+0.83
Shimla	102137	109120	105937	98486	-0.12	193	495	1056	1131	+16.76
Sirmour	71141	75121	75317	74172	+0.15	963	1428	1590	1427	+1.66
Solan	61880	63342	64098	61899	Neg.	2325	2607	1959	1585	-1.09
Una	61549	69433	66392	67449	+0.33	758	1970	2290	2192	+6.52
H.P.	876762	924425	940116	923939	+0.18	22004	22774	22291	18857	-0.49

Contd…

Table- 2.9: Contd..

Districts	Noon- food crops					Total crops				
	1971-72	1981-82	1991-92	1999-2000	Annual Growth Rate %	1971-72	1981-82	1991-92	1999-2000	Annual Growth Rate %
Bilaspur	920	1380	1232	625	-1.10	52723	59803	60721	57649	+0.32
Chamba	2672	3080	2345	3411	+0.95	60900	64012	62133	64322	+0.19
Hamirpur	375	951	456	468	+0.85	70822	75975	72921	70748	Neg.
Kangra	18794	14918	16043	13200	-1.03	214604	174613	217949	220117	+0.09
Kinnaur	16	83	57	110	+20.26	11613	10610	9155	9059	-0.76
Kullu	719	721	909	694	-0.12	51192	55880	61761	57511	+0.42
L & Spiti	90	82	185	101	+0.42	2500	3297	3318	3486	+1.36
Mandi	2486	2457	2673	2769	+0.35	141763	160282	164305	160419	+0.45
Shimla	226	515	1070	1134	+13.85	102429	109635	107020	99620	-0.09
Sirmour	2063	2938	3500	3292	+2.05	73203	78059	78815	77464	+0.20
Solan	3991	3720	3660	2973	-0.88	65804	76062	67759	64872	-0.05
Una	3310	4173	3992	4051	+0.77	64859	73606	70384	71500	+0.35
H.P.	35660	34976	36122	32828	-0.27	912422	959401	976241	956767	+0.16

Source: Directorate of Land Records, Himachal Pradesh Shimla.

Table-2.10 : District wise growth in area under Potato and Ginger in Himachal Pradesh.

(Area in ha.)

Districts	Potato					Ginger				
	1971-72	1981-82	1991-92	1999-2000	Annual Growth Rate %	1971-72	1981-82	1991-92	1999-2000	Annual Growth Rate %
Bilaspur	10	13	26	15	+1.72	56	51	90	151	+5.85
Chamba	439	443	518	612	+1.36	-	-	3	-	-
Hamirpur	14	11	11	11	-0.73	-	1	3	12	+57.89
Kangra	911	746	1143	1637	+2.75	11	15	16	22	+3.54
Kinnaur	303	451	282	244	-0.67	-	-	-	15	-
Kullu	994	916	993	1034	+0.14	-	-	-	-	-
L & Spiti	338	1213	946	928	+6.02	-	-	-	-	-
Mandi	1619	2078	1810	2196	+1.22	6	7	10	62	+32.18
Shimla	8929	8137	6738	5502	-1.32	149	140	171	183	+0.71
Sirmour	683	862	1324	1455	-3.89	1624	1581	1135	1125	-1.06
Solan	215	195	116	126	-1.43	347	260	234	455	+1.07
Una	262	126	309	613	+4.62	-	-	-	13	-
H.P.	14717	15191	14216	14373	-0.08	2193	2055	1662	2038	-0.24

Source : Directorate of Land Records, Himachal Pradesh.

Table-2.11: District wise growth in area under different fruits in Himachal Pradesh.

(Area in ha.)

Districts	Apple					Other Temperate fruits				
	1971-74	1981-84	1991-94	1999-2002	Annual Growth Rate %	1971-74	1981-84	1991-94	1999-2002	Annual Growth Rate %
Bilaspur	-	-	1	4	-	226	497	899	862	+9.08
Chamba	786	2126	5068	9748	+36.65	218	867	1554	1980	+26.07
Hamirpur	-	-	-	0.00	-	-	63	424	603	-
Kangra	326	465	595	603	+2.74	1910	3557	4536	4703	+4.71
Kinnaur	804	2477	4603	6407	+22.48	142	294	337	342	+4.54
Kullu	7145	11096	15789	19675	+5.65	919	2723	3833	3770	+10.00
L & Spiti	-	55	159	540	-	-	35	61	74	-
Mandi	4294	7251	11124	13881	+7.20	1134	3414	5368	6174	+14.34
Shimla	14754	19933	27931	35141	+4.46	1778	2589	2979	3464	+3.06
Sirmour	2201	3097	3729	4060	+2.72	686	2208	3646	5403	+22.18
Solan	170	492	538	553	+7.27	2004	4247	5035	5826	+6.15
Una	-	-	-	0	-	68	335	895	939	+41.32
H.P.	30479	46994	69537	90612	+6.36	9085	20829	29567	34140	+8.89

Contd…

Table 2.11 Contd..

Districts	Nuts and dry fruits					Citrus fruits				
	1971-74	1981-84	1991-94	1999-2002	Annual Growth Rate %	1971-74	1981-84	1991-94	1999-2002	Annual Growth Rate %
Bilaspur	12	58	281	308	+79.57	281	1831	3125	2990	+31.10
Chamba	93	684	1627	2244	+74.61	171	710	1201	1361	+22.44
Hamirpur	44	313	528	696	+47.80	97	1152	2316	2457	+78.48
Kangra	354	1420	2109	2425	+18.07	2739	7248	16126	17368	+17.23
Kinnaur	320	857	1185	1257	+9.44	-	-	-	0	-
Kullu	243	644	977	1085	+11.17	98	238	346	363	+8.73
L & Spiti	-	10	17	26	-	-	-	-	0	-
Mandi	390	1351	2554	3127	+22.63	994	2781	4951	5230	+13.75
Shimla	385	865	1665	2017	+13.67	269	559	749	780	+6.12
Sirmour	228	1404	1966	2063	+25.96	978	1811	3116	3194	+7.31
Solan	204	691	989	1229	+16.20	502	2289	3476	3679	+20.41
Una	36	92	149	189	+13.70	53	870	2084	2227	+132.32
H.P.	2309	8389	14047	16666	+20.05	6181	19489	37490	39649	+17.47

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Table-2.11: Contd..

Districts	Other sub-tropical fruits					All fruits				
	1971-74	1981-84	1991-94	1999-2002	Annual Growth Rate %	1971-74	1981-84	1991-94	1999-2002	Annual Growth Rate %
Bilaspur	498	1059	2770	3525	+19.60	1017	3446	7075	7689	+21.16
Chamba	101	332	549	840	+7.63	1369	3311	9999	16173	+34.88
Hamirpur	150	684	1567	2632	+53.37	337	2353	4836	6388	+57.92
Kangra	1334	5684	13945	19306	+43.46	6662	18374	37311	44405	+18.75
Kinnaur	-	-	-	0	-	1266	3629	6125	8006	+17.17
Kullu	-	32	45	135	-	8405	14733	20990	25028	+6.38
L & Spiti	-	-	-	0	-	-	100	237	640	-
Mandi	683	1755	2669	3967	+15.51	7495	16562	26667	32379	+10.70
Shimla	62	81	138	243	+9.41	17248	24026	33461	41645	+4.56
Sirmour	338	698	1869	3160	+26.93	4430	9218	14326	17880	+9.79
Solan	199	895	1406	2106	+30.91	3079	8584	11443	13393	+10.80
Una	105	559	1243	2120	+61.90	213	1855	4371	5475	+79.69
H.P.	3470	11780	26201	38034	+32.13	51521	106181	176841	219101	+10.49

Source: Directorate of Horticulture, H.P., Shimla-2

Rice, a kharif crop, is grown under irrigated conditions. The relative importance of rice has decreased during the last one –quarter century in almost all the districts of the state. Maize is also an important kharif crop grown in all the districts of the state. It is generally grown without irrigation. The area under maize has increased throughout the state. Wheat generally grown under irrigated conditions is a most important cereal crop of the Rabi season in the state. On the whole wheat area increased in the state as a whole. But its area has declined in some districts (e.g. Shimla, Lahaul-Spiti and Kinnaur) mainly because of diversion wheat land to vegetable and fruits production.

Area under pulse crops has seen most dramatic decline in the state as a whole. In the high hill districts of Shimla, Chamba, Lahaul & Spiti and Kinnaur the area under pulses has increased during the last 30 years. Accounting cereals and pulses together, the area under these food grains has declined slightly. This decline was due mainly to shift in area towards fruit and vegetable crops. Area under fruit crops has been increasing at a rate of 10 per cent per annum during the last 30 years; Shimla, Kullu, Mandi and Kangra district have seen significant increase in area under fruit crops.

The varied climatic conditions of the state are suitable for producing different types of fruits. The low hill zone is suitable for citrus fruits, mid hills for plums, pears, peaches and apricots, and the high hills are suitable for apple and dry fruits.

The development of horticultural crops has greatly fulfilled the needs and objectives of socio-economic growth. Horticultural crops provide higher income and employment per unit of land. The marginal lands can be profitably utilized for cultivation of fruit crops, along with concomitant advantage of checking the soil erosion as well.

Horticultural development programmes emphasize the cultivation of (i) fresh fruits such as apple, mango, citrus, stone fruits, (ii) nuts and dry fruits, (iii) vegetables and potatoes, and (iv) new emerging crop enterprises like floriculture, hops, mushroom growing, and bee keeping.

During 1971 to 2002 average annual growth rate in area under fruits in Una district was 79.69 per cent, in Hamirpur 57.92 per cent, in Kullu was 6.38 per cent in Chamba was 34.88 per cent, in Kinnaur was 17.17 per cent, in Bilaspur was 21.16 per cent, in Lahaul & Spiti and Mandi was 10.70 per cent. In some districts high growth rate was registered because there was initially very small area under fruits. Being laggards, th2ey are catching up fast in the race of agricultural commercialisation. One good thing noticed was that the area under fruits is increasing in all the districts of the state. Though some districts (Shimla and Kullu) still dominate, but tendency is towards all round balanced development of fruit cultivation in the state. No doubt, the marketing infrastructure development in the state has definitely played a key role in the growth and spread of commercialisation of agricultural sector.

Himachal Pradesh has suitable agro-climatic conditions for growing off-season vegetables, such as tomato, cauliflower, cabbage, capsicum, peas, potato etc. The area under vegetable crops has also been increasing in the state. Shimla, Solan,

Sirmour, Kangra and Kullu districts now have a substantial area under vegetables. In the state as a whole the area under vegetable crops has been increasing at the rate of 2.71 per cent per annum. However, the annual growth rate of area under vegetables in Bilaspur, Sirmour, Solan, Una and Lahaul-Spiti districts was more than 5 per cent. Farmers in state are being technically guided to grow vegetable crops and are provided marketing infrastructure facilities so as to reap full advantage of the favourable climatic conditions of the state. These factors have helped farmers to increase their area under these cash crops and enhance their farm incomes substantially. Being capital-intensive crops, the availability of credit and assurance of remunerative prices has also played key roles in the spread of cultivation of these crops in the state.

The annual growth rate of area under apples and nuts & dry fruits was 6.36 per cent and 20.05 per cent, respectively. Area under citrus fruits increased at the rate of 17.47 per Cent and the other sub-tropical fruits at the rate of 32.13 per cent per annum (See table 2.11). This means that the speed of increase of area under sub-tropical fruits, grown in low and mid hill areas of the state was higher than the temperate fruits grown in high hill areas. The main reason for this high growth rate is that the initial area under sub-tropical fruits was relatively much less. Development of marketing infrastructure facilities has been instrumental in the increase in area of fruit crops.

District-wise changes in area of fruits and vegetables as per cent of gross cropped area (GCA) during the period 1971 to 2000 are analysed in Table 2.12. In the state as a whole, in 1971 the area under fruits accounted for 1.73 per cent of GCA, which rose to 6.03 per cent by 2000. The area under vegetables was 2.12 per cent, which rose to 3.62 per cent of GCA during the same period. The growth in fruits area was relatively higher as compared to the vegetable crops. One reason for this may be that the vegetable crops require the best land (good soil, levelled fields and assured irrigation facility) while fruits can be grown on less fertile steep, marginal lands. Another reason was that marketing of vegetables, which are highly perishable,

couldn't be done over long distances while fruits could be marketed to distant markets with some care. Though high hill districts of Shimla, Kullu, Kinnaur and Lahaul-Spiti have taken lead in producing commercial crops, there is a need to boost production of cash crops in the low hill districts, especially Bilaspur, Una and Hamirpur.

Growth of Crops Output

The production of cereal crops has also increased in the state due to technological changes. Although the area under rice crop has been decreasing but its production level is stable. The effect of reduction of its area on its production has been compensated by the increase in its productivity (yield per unit of area) district wise trends in production of major cereal crops in H.P. are shown in Table 2.13. The production of maize output has been increasing at the annual rate of 2.19 per cent per annum, and that of wheat at the rate of 1.71 per cent per annum. Output of all food grains has been increasing at the rate of 1.91 per cent per annum. But the output of non-food crops has been decreasing in the state at the rate of about 0.34 per cent per annum. The growth rates or various crops differed in different districts because of differences in agro-climatic conditions and other factors.

Table-2.12: Changes in area of fruits and vegetables as a proportionate area of Gross cropped area in different districts of Himachal Pradesh During 1971 to 1999.

(Percentages of GCA)

Districts	1971-72			1999-2000		
	Fruits	Vegetables	Total	Fruits	Vegetables	Total
Bilaspur	0.16	0.43	0.59	0.87	0.86	1.74
Chamba	0.53	1.05	1.58	2.99	1.25	4.25
Hamirpur	0.02	0.29	0.31	0.09	0.28	0.37
Kangra	0.43	0.86	1.29	2.51	1.15	3.66
Kinnaur	4.47	3.36	7.83	26.72	9.31	36.04
Kullu	2.54	2.44	4.98	15.35	4.29	19.65
L & Spiti	0.08	14.56	16.84	1.66	27.28	28.94
Mandi	2.52	1.44	3.96	3.85	3.33	7.18
Shimla	6.55	9.95	16.50	28.87	13.18	42.05
Sirmour	2.19	1.17	3.36	2.38	4.48	6.86
Solan	1.03	1.34	2.37	1.46	5.31	6.77
Una	0.23	0.44	0.67	0.92	1.37	2.29
Total	1.73	2.12	3.85	6.03	3.62	9.65

Source : Directorate of Land Records, Himachal Pradesh.

Table-2.13: District wise trend in production of major cereal crops in Himachal Pradesh.

(Production M.T.)

Districts	Rice					Maize				
	1971-74	1982-84	1992-94	1997-2000	Annual Growth Rate %	1971-74	1982-84	1992-94	1997-2000	Annual Growth Rate %
Bilaspur	3011	2986	3134	3098	0.10	29332	32395	47271	46978	2.07
Chamba	3009	3668	4839	4030	1.17	48804	45290	69423	69907	1.49
Hamirpur	5439	3988	3638	4043	-0.88	34513	42771	60217	53247	1.87
Kangra	43815	41923	44830	50948	0.56	74977	80774	100312	90536	0.71
Kinnaur	38	23	35	37	-0.09	401	812	953	801	3.44
Kullu	4859	3762	3431	2416	-1.73	27924	30555	32393	39828	1.46
L & Spiti	-	-	-	-	-	-	30	79	74	-
Mandi	26665	23673	24651	29840	0.41	52728	76677	107403	131852	5.17
Shimla	6052	4642	3597	3605	-1.39	27190	39224	42486	37450	1.30
Sirmour	5016	4242	7748	8239	2.21	39917	56964	61758	71794	2.75
Solan	4041	3577	5079	6737	2.30	33698	39919	52099	55642	2.24
Una	2426	1710	2906	6277	5.47	30756	35453	50267	56687	2.90
H.P.	103371	94194	103888	119269	0.53	400240	480864	624661	654797	2.19

Contd..

Table 2.13 : Contd…

Districts	Wheat					Food grains				
	1971-74	1982-84	1992-94	1997-2000	Annual Growth Rate %	1971-74	1981-84	1991-94	1997-2000	Annual Growth Rate %
Bilaspur	15687	29751	31470	47520	6.99	51790	66562	83229	65020	0.88
Chamba	13784	18970	26516	27211	3.35	94483	74256	106619	107739	0.48
Hamirpur	27462	28501	43360	48365	2.62	72042	75902	107791	105986	1.62
Kangra	94167	87380	127184	132241	1.39	224874	216065	280972	279656	0.84
Kinnaur	2010	1218	804	846	-1.99	8713	5990	5613	6637	-0.82
Kullu	16502	26192	40664	39355	4.77	63384	69579	83144	87856	1.33
L & Spiti	1318	447	323	268	-2.74	5196	1232	1748	8267	2.04
Mandi	59069	79108	89914	98328	2.29	153600	192707	232102	268887	2.58
Shimla	35313	32910	30480	26641	-0.84	92901	96217	88905	80997	-0.44
Sirmour	28428	39822	43540	44105	1.90	10678	106320	118007	131468	39.00
Solan	17911	21787	28414	39639	4.18	63497	68568	89023	107109	2.37
Una	25440	31898	41250	64770	5.33	66595	70138	95026	128314	3.19
H.P.	337091	397984	503919	568624	1.71	907753	1043536	1292179	1411271	1.91

Contd..

Table-2.13: Contd…

Districts	Total food crops					Oil seeds				
	1971-74	1981-84	1991-94	1997-2000	Annual Growth Rate %	1971-74	1981-84	1991-94	1997-2000	Annual Growth Rate %
Bilaspur	52227	66789	315455	99274	3.10	257	388	372	330	0.98
Chamba	85090	174852	110467	114336	1.18	687	335	431	807	0.60
Hamirpur	72617	76404	108063	106260	1.60	74	179	126	199	5.82
Kangra	237140	221214	291201	291641	0.79	4752	2916	3149	3822	-0.67
Kinnaur	10027	7683	8151	7975	-0.70	1	4	10	9	27.58
Kullu	68639	71898	91573	99500	1.55	218	95	155	495	4.38
L & Spiti	9666	7946	26407	10673	0.35	10	3	15	40	10.34
Mandi	158127	200051	250514	292265	2.92	475	182	280	732	1.86
Shimla	127929	117648	159856	136778	0.24	34	55	312	660	63.49
Sirmour	84729	110104	132767	153157	2.78	382	390	577	682	2.70
Solan	64848	69851	91106	109438	2.37	1999	698	785	1145	-1.47
Una	69755	71787	98744	143707	3.65	235	486	453	3440	47.02
H.P.	1040794	1196227	1684304	1583462	1.79	9124	5731	6665	10068	0.36

Contd..

Table- 2.13: Contd…

Districts	Total non-food					Total food + non food crops				
	1971-74	1981-84	1991-94	1997-2000	Annual Growth Rate %	1971-74	1981-84	1991-94	1997-2000	Annual Growth Rate %
Bilaspur	298	405	376	333	0.40	52525	67194	84164	99607	3.09
Chamba	728	351	436	823	0.45	75818	75210	110904	81826	0.27
Hamirpur	83	181	126	200	4.86	72700	76585	108189	106460	1.60
Kangra	6107	3378	3171	3837	-1.28	243247	224525	294372	295479	0.74
Kinnaur	1	6	10	9	27.58	10028	7689	8161	7986	-0.70
Kullu	324	184	228	502	1.89	68963	72081	91800	100002	1.55
L & Spiti	10	11	15	28	6.21	9676	7961	26422	29160	6.94
Mandi	1014	226	282	777	-0.80	159041	200277	250795	293042	2.90
Shimla	40	56	312	660	53.44	127969	117705	160168	137438	0.25
Sirmour	418	408	583	687	2.21	65147	110513	133350	153845	4.69
Solan	2008	713	787	1151	-1.47	66856	70565	91893	110587	2.25
Una	246	511	479	1149	12.65	70201	72632	99223	144856	3.67
H.P.	11277	6430	6805	10157	-0.34	1022171	1102937	1459441	1593620	1.93

Source: Directorate of Land Records, Himachal Pradesh.

The output of potato, a popular vegetable crop of the state, has shown a growth rate of 4.68 per cent per annum, whereas ginger crop, another specialty of the state, has also shown increasing trend in its output (See Table 2.14). The apple fruit production has been steadily increasing at the growth rate of 3.92 per cent per annum. Average production (total production/total area) of citrus and other sub-tropical fruits has shown a declining trend during the reference period because area under these fruits has been increasing rapidly in recent years without contribution to output but when these plants will reach the fruits-bearing stage, the total output of these fruits will also increase (Table 2.15).

Some new farm products, which have also emerged as rural income boosters and require special marketing efforts, are honey, mushrooms, hops and olives. Output of these products has been rising steadily since 1981 (see Table 2.16).

Table-2.14: District wise growth in production of Potato and Ginger in Himachal Pradesh.

(Production in M.T.)

Districts	Potato					Ginger				
	1971-74	1982-84	1992-94	1997-2000	Annual Growth Rate %	1971-74	1982-84	1992-94	1997-2000	Annual Growth Rate %
Bilaspur	9	49	252	146	52.49	56	47	137	289	14.36
Chamba	600	745	37849	6545	34.16	-	-	1	-	-
Hamirpur	67	10	74	142	3.86	-	1	2	9	-
Kangra	11516	4800	9258	10901	-0.18	14	6	8	20	1.47
Kinnaur	1314	1683	2538	1330	0.04	-	-	-	6	-
Kullu	5217	2292	8393	11372	4.07	-	-	-	-	-
L & Spiti	4470	6714	24659	20865	12.64	-	-	-	-	-
Mandi	4245	7268	18210	23196	15.39	14	4	37	58	10.83
Shimla	34815	21355	70713	55159	2.01	194	49	175	462	4.76
Sirmour	1615	1751	13088	16289	31.33	587	371	257	1506	5.40
Solan	955	891	1450	1498	1.96	183	140	176	413	4.33
Una	1455	1442	2576	5388	9.32	-	-	-	16	-
H.P.	64827	48714	155000	152833	4.68	1048	618	793	2779	5.70

Source: Directorate of Land Record, Himachal Pradesh.

Table-2.15: District wise growth in production of different fruits in Himachal Pradesh.

(Production in Matric Tonnes)

Districts	Apple					Other Temperate fruits				
	1971-74	1981-84	1991-94	1999-2002	Annual Growth Rate %	1971-74	1981-84	1991-94	1999-2002	Annual Growth Rate %
Bilaspur	-	-	-	-	-	416	117	208	72	-2.66
Chamba	1517	3810	3924	4964	7.32	447	338	215	875	3.08
Hamirpur	-	-	-	-	-	-	85	40	77	-0.45
Kangra	948	495	207	235	-2.42	4367	1230	1305	2348	-1.49
Kinnaur	2239	7303	17372	18678	23.68	284	98	39	96	-2.13
Kullu	23108	51978	70595	32252	1.28	2549	6385	9434	11459	11.27
L & Spiti	-	12	76	94	32.53	-	1	4	10	42.86
Mandi	13801	9276	7865	10414	-0.79	2678	2507	3098	2398	-6.34
Shimla	42067	160150	191020	135150	7.13	4665	1723	2196	1205	-2.39
Sirmour	6931	1229	617	280	-3.09	1297	1725	1494	1506	0.51
Solan	566	347	163	64	-2.86	3323	4066	2356	1752	-1.53
Una	-	-	-	-	-	-	131	767	731	21.81
H.P.	91179	234600	291839	202131	3.92	20026	18406	21156	22529	0.40

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Table-2.15: Contd…

Districts	Nuts and dry fruits					Citrus fruits				
	1971-74	1981-84	1991-94	1999-2002	Annual Growth Rate %	1971-74	1981-84	1991-94	1999-2002	Annual Growth Rate %
Bilaspur	-	7	51	19	8.16	661	957	151	420	-1.18
Chamba	81	146	94	360	11.11	422	270	136	390	-0.24
Hamirpur	-	3	108	48	71.43	-	543	65	464	-0.69
Kangra	258	69	281	350	1.15	7572	5207	5244	9008	0.61
Kinnaur	309	409	413	545	2.46	-	-	-	-	-
Kullu	273	167	156	213	-0.70	262	60	17	59	-2.50
L & Spiti	-	2	4	8	14.28	-	-	-	-	-
Mandi	373	307	407	278	-0.82	2974	296	105	511	-2.67
Shimla	548	161	282	280	-1.56	985	374	90	67	-3.00
Sirmour	139	147	310	220	1.88	2723	1217	874	773	-2.31
Solan	53	171	229	191	8.40	784	281	106	602	-0.75
Una	-	30	82	10	-3.17	-	1143	366	1302	0.66
H.P.	2034	1619	2417	2520	0.77	16383	10348	7155	13597	-0.54

Contd….

Table 2.15: Contd…

Districts	Sub- tropical fruits					All fruits				
	1971-74	1981-84	1991-94	1999-2002	Annual Growth Rate %	1971-74	1981-84	1991-94	1999-2002	Annual Growth Rate %
Bilaspur	1333	720	338	1101	-0.56	2410	1802	747	1622	-1.05
Chamba	228	204	54	397	2.39	2695	4768	4423	6986	5.14
Hamirpur	-	551	242	1181	5.44	-	1183	455	1770	2.36
Kangra	4440	4831	4558	11915	5.43	17585	11832	11595	23855	1.15
Kinnaur	-	19	-	-	-	2832	7829	17824	19319	18.78
Kullu	-	40	-	40	-	26192	58630	80202	44023	2.20
L & Spiti	-	-	-	-	-	-	15	84	112	30.79
Mandi	1870	911	274	750	-1.93	21696	13297	117448	14350	-1.09
Shimla	235	132	5	44	-2.62	48500	162539	193593	136746	5.86
Sirmour	867	1004	658	1672	2.99	11957	5322	3952	4452	-2.02
Solan	249	280	21	403	1.99	4975	5176	2876	3011	-1.27
Una	-	1024	2161	2023	4.64	-	2328	3380	4066	3.55
H.P.	9222	9716	8314	19526	3.60	138842	274691	330879	260303	2.82

Note: Triennium ending 1973-74, 1983-83, 1995-96.
Source: Directorate of Horticulture, Himachal Pradesh.

Table 2.16 Production of Honey, Mushrooms, Hops and Olive in Himachal Pradesh.

Years	Honey production (Kg.)			Mushrooms production (Tonnes)	Area under Hops	Hops production (M.T.)		Total production of olive (Kg.)
	Private Units	Govt. Units	Total			Green	Dry	
1981-82	1600	1105	2705	288	-	-	-	-
1982-83	6758	1917	8675	339	-	-	-	-
1983-84	11000	3964	14964	405	-	-	-	-
1984-85	33300	2855	36155	500	-	-	-	-
1985-86	41775	3221	44996	480	-	-	-	-
1986-87	46515	7982	54497	410	-	-	-	327
1987-88	27690	7259	34949	525	-	-	-	1195
1988-89	62827	13122	75949	565	-	-	-	1143
1989-90	124212	9954	134166	516	-	-	-	1414
1990-91	101936	11907	113843	510	15	41.30	10.33	1469
1991-92	136692	14889	151581	539	25	48.00	12.0	614
1992-93	132560	14401	146961	685	83	86.00	21.05	7346
1993-94	279020	18426	297446	1107	129	180.00	45.80	298
1994-95	354406	8479	362885	2155	176	524.00	131.00	2260
1995-96	350185	8964	359149	2168	215	376.00	94.00	1715
1996-97	566280	6720	573000	1276	-	-	59.00	3000
1997-98	542090	5350	547440	1368	-	-	32.50	7000
1998-99	709530	7470	717000	1737	-	-	29.6	15000
1999-2k	566710	6290	573000	2657	-	-	35.1	-
2000-01	829370	6630	836000	2945	-	-	17.0	5000
2001-02	650380	4620	655000	3227	-	-	38.09	6000
2002-03	956810	8190	965000	3236	-	-	38.6	13000
2003-04	822600	6400	829000	4485	-	-	42.6	11000

Source: Directorate of Horticulture, Himachal Pradesh, Shimla-5.

Summing Up

Farmers with highly commercialized and specialized production count on the availability of a good marketing system, which includes roads, wholesalers, commission agent and retailers. Proper marketing system means a lot to commercial farmers of fruits and Vegetables. Development of Marketing in the production and the use of improved techniques of crop cultivation and of livestock rearing, which resulted in their higher yields and increased marketable surpluses. To acquire the means of higher returns-more productive seeds, fertilizers, pesticides etc. farmers need cash, which they can only obtain by sales of farm products. Without cash and hence, without the means of marketing, this type of commercial production would not have been possible in the state, nor the contribution it has made in freeing the substantial part of agricultural population from poverty, distress.

Chapter 3

MARKETED SURPLUS, MARKETING SYSTEM AND PRICE SPREAD OF FARM PRODUCTS IN HIMACHAL PRADESH

In any developing economy, marketed surplus of agricultural products plays a significant role. This is the quantity, which are actually changes hands from farmers to the ultimate consumer. From the marketing point of view, this surplus is more important than the total production of commodities. In this chapter an attempt has been made to analyse the marketed surplus of various farm products grown in the state. The production and marketing system of apples produced in Himachal Pradesh is analysed in detail.

Marketed Surplus of Farm Products

In the case of fruits and vegetables, a very high proportion, more than 90 per cent, of the total produce goes to the markets as a marketed surplus. Per farm crop wise production marketed amount in H.P. is shown in Table 3.1. Since per farm production of crop output is quite meagre, obviously quantity of marketed surplus is also small. The production as well as marketed surplus of cereals and pulses is very small major part of the production is retained by farmers for family consumption. Per farm quantity of wheat sold was 5 quintal, of maize was 3.9 quintal and of paddy was 4.6 quintals, which account for 45 percent, 48 percent and 68 percent respectively of the total production of these crops. Amount of surplus quantity of black gram and kidney bean was meagre 77 kg and 13 kg per farm. Per farm quantity of fruits and vegetables sold was also not much except for mango, potato, tomato, and cauliflower. This whole discussion of marketed surplus of various types of commodities on rural households shows that quantity sold by each household is quite small. A small producer does not have much in bargaining power at the market place. Hence, their returns as well as

their market share in the final consumer's rupee is quite low and the marketing cost high, as would be clear from discussion of the price spread and marketing margins of farm products.

Table-3.1: Per Farm Production and Marketed Surplus of Various Farms Products in Himachal Pradesh during 1997-98.

Farm Products	Total Production Qtl.	Retained for family consumption, seed etc.Qtl)	Quantity sold Qtl.	Marketed surplus (%)
VEGETABLE				
Peas	3.45	0.25	3.20	92.8
Tomato	22.93	1.01	21.92	95.6
Cauliflower	18.35	0.50	17.85	97.3
Cabbage	31.95	0.85	31.10	97.3
French bean	1.00	0.06	0.94	94.0
Capsicum	1.68	0.12	1.56	92.9
Potato	20.52	0.71	19.81	96.3
Ginger	5.92	1.62	4.30	72.6
Lady finger	1.90	0.12	1.78	93.7
Radish	1.34	0.05	1.29	96.3
Brinjal	2.17	0.05	2.12	97.7
Tomato	0.95	0.02	0.93	97.9
Onion	3.21	0.34	2.87	89.4
Spinach	1.49	0.05	1.44	96.6
Cucumber	16.65	0.35	16.30	97.9
FRUIT				
Plum	2.47	0.12	2.35	95.1
Mango	23.36	0.68	22.68	97.1
Orange	9.41	0.41	9.00	95.6
PULSES				
Blackgram	1.28	0.51	0.77	60.2
Rajmash	0.24	0.11	0.13	54.2
CEREALS				
Wheat	11.22	6.19	5.03	44.8
Maize	8.02	4.14	3.88	48.4
Paddy	6.80	2.20	4.60	67.6

Source: Impact of Marketing Infrastructure Facilities on the Performance of Agricultural Marketing in Himachal Pradesh, 2001, The Himachal Pradesh Agricultural Produce Marketing Board, Shimla-2

Production System, Marketable Surplus and Marketing System of Apple in Himachal Pradesh: A Case Study

An efficient marketing system, as the farmer visualizes, is one, which maximizes his net returns from a given transaction and helps in expanding the market for that product. The product has to be prepared especially for market in respect of grading, packing, etc. The preparation of apples for market involves, picking, grading, packing, transportation, etc. As all these functions are important determinants of prices, which the apples will fetch in market, great care has to be ensured at every step. Any carelessness at any stage in the marketing channel will result in lower prices and hence would miss the target of higher net returns. The production system, marketed surplus, culled apple available for processing, marketing system and producer's share in consumer rupee / price spread in apple marketing are analysed and discussed in this section.

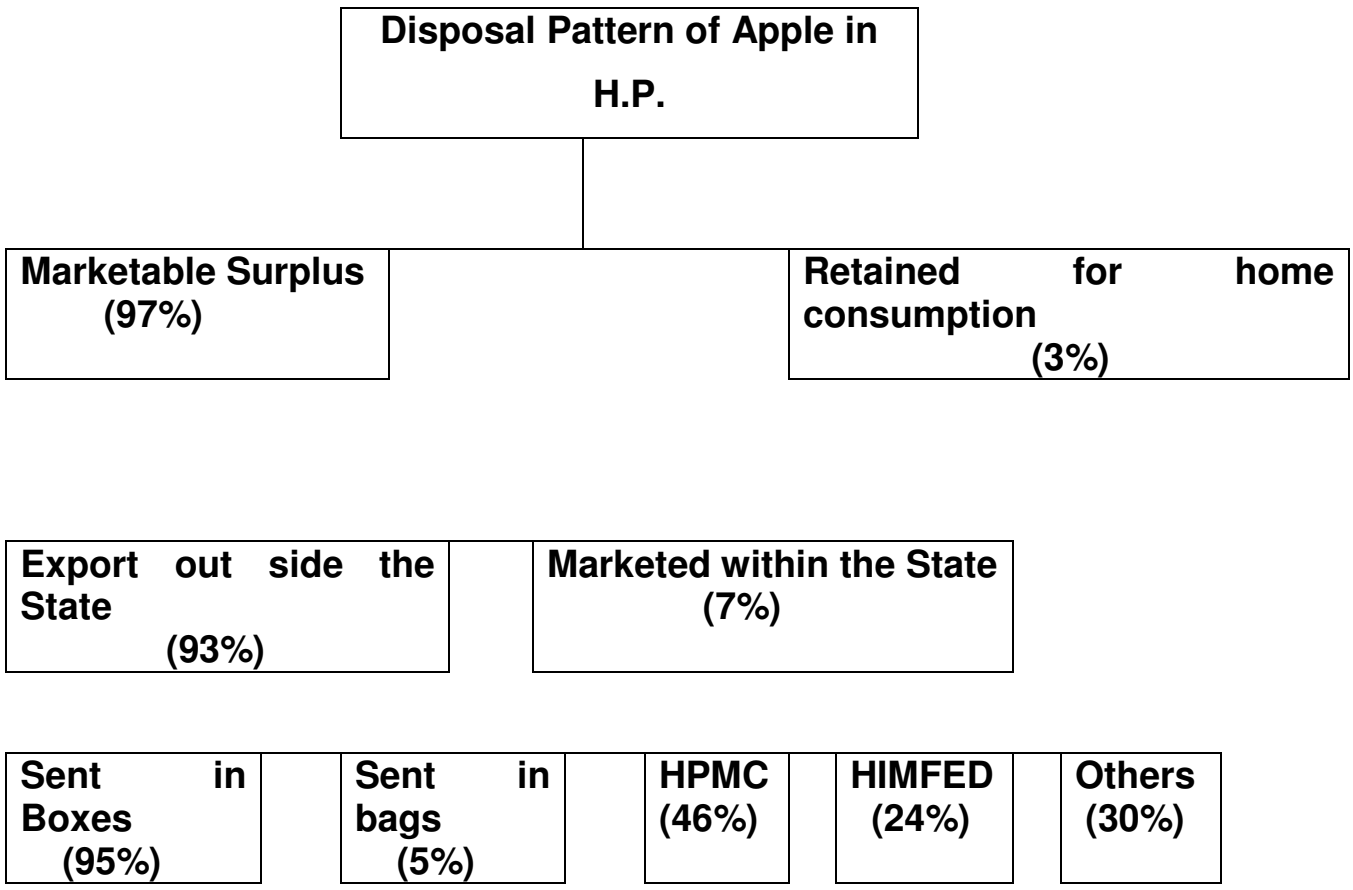
Marketing System of Himachal Apple

Nearly 97 per cent of the total apple production is the marketed surplus in the State and remaining 3 per cent is retained by the farmers for home consumption. About 96 per cent of the marketable surplus is sold out side the state and remaining 7 per cent within the State. Marketing within the state involved purchased by the processing industries (5%) like Himachal Horticulture Produce Marketing and Processing Corporation, Ltd (HPMC) or by the private industries and 2 per cent is sold as fresh fruits (Prasher, 1997). The quantity of apples produced and marketed in Delhi market and other markets out side the state is presented in Table-3.2 wherein it may seen that about 80 per cent of total quantity of apples sent out side the state was received at Delhi market in 1975-76 which has decreased to 77 per cent during 2000-01. The value of apples received at Delhi market at wholesale price was about Rs 27 crores in 1975-76, which has increased to Rs 447 crores during 2000-01.

Table-3.2: Quantity of Apple Produced and Whole Sale Prices at Delhi Market.

Year	Total production (in tones)	Quantity sold out side the state (in tones)	Quantity sold at Delhi (in tones)	Average wholesale prices in Delhi (Rs/kg)	Value of apple marketed in Delhi market (in Rs. Crores)
1975-76	2,00,000	1,60,000	1,28,000	2.09	26.75
1979-80	1,35,475	1,08,380	86,704	2.59	22.45
1984-85	1,70,629	1,35,144	1,04,060	4.57	47.56
1989-90	3,94,864	3,51,630	2,70,755	5.79	156.76
1995-96	2,76,681	2,46,510	1,89,813	11.81	224.17
2000-2001	3,76,736	3,32,262	2,55,842	17.47	446.96
C.G.R.	2.11	2.79	2.59	2.75	12.58

CGR= Compound Growth Rate.
Source: Directorate of Horticulture, Shimla.



The apple marketing involves multifarious activities like picking, grading, packing, transportation, storages, processing, etc. After attaining the size and colour the fruit is picked by hand and kept in picking basket and then emptied in *Kilta* - a conical basket. The *Kilta* when filled is carried to godown and emptied in a heap by carefully lifting each fruit by hand (Nadda, et al, 1999). After picking apples are classified into uniform lots on the basis of their size and quality. According to size apples are classified in seven grades, i.e. super large, extra large, medium, small, extra small and pitto. These size grades are further classified in to three quality grades, i.e. extra fancy (Grade A), fancy (grade B) standard (grade c) and culls. Quality grading is based on the shape and development of fruit, colour defects and brightness, etc., of the fruit. Grading is generally done manually however, mechanized grading facilities are also available at grading and packinghouses established by the HPMC. After grading, fruits are wrapped in the old newspapers and are packed in wooden boxes. In case of the apples are packed in the telescopic corrugated fibre board (cfb) cartons, then there is no need for wrapping individual fruits in old news papers. Thereafter these cartons boxes are strapped sealed and marked giving details of the fruit packed and name of the consignee as well as consigner. Then the cartons are staked at road head for onward transportation to markets. The apple boxes are carried from orchard to road head by human back mules or ropeways. From road head apples are generally transported by trucks upto markets.

Production of Apple on Sample Farms

Land holding in Himachal Pradesh is very small consequently, average total land per form is 1.04 hectares, which is 0.48 hectare on marginal farms, 1.42 hectares on small forms and 2.60 hectares on medium farms (see Table-3.3). Apple production is the main activity followed by the sample farmers. Out of total land owned 89 per cent is under fruits crops (apple). The variety wise numbers of plants grown by sample orchardist are given in Table-3.4 wherein it may be observed that Royal delicious was the major variety planted by the orchardist, followed by golden delicious, Red gold

and Red delicious. On an average, a farmer has about 269 plants of apple in the orchard. The production of apple on various categories of farms was 149 boxes, 339 boxes and 617 boxes on marginal, small and medium farm respectively (Table-3.5). On the whole, per farm production of apple was 268 boxes annually.

Table-3.3: Land use Pattern of Sample Farms.

(Ha/Farm)

Land Use	Marginal Farms	Small Farms	Medium Farms	All Farms
Total land	100.0 (0.48)	100.0 (1.42)	100.0 (2.60)	100.0 (1.04)
Cultivated land	95.83	93.66	93.46	94.23
Under orchard	93.75	85.21	90.77	89.42
Field crops	2.08	8.45	2.69	4.81
Grass land	4.17	6.34	6.54	5.77
Barren land	-	-	-	-

Source: Agro-Economic Research Centre, H.P. University, Shimla.

Table- 3.4: Variety-Wise Number of apple Plants on sample Farms.

(Per Farm Number of plants)

Variety	Marginal Farms	Small Farms	Medium Farms	All Farms
Royal Delicious	121.08 (84.42)	312.28 (86.02)	505.52 (84.09)	228.15 (84.92)
Red Delicious	4.43 (3.09)	11.07 (3.05)	20.03 (3.33)	8.46 (3.15)
Red Gold	6.07 (4.23)	14.23 (3.92)	26.45 (4.40)	11.20 (4.17)
Golden Delicious	8.70 (6.07)	17.90 (4.93)	35.59 (5.92)	15.04 (5.60)
Others	3.14 (2.19)	7.55 (2.08	13.58 (2.26)	5.82 (2.17)
Total	143.42 (100.00)	363.03 (100.00)	601.17 (100.00)	268.67 (100.00)

Note: Figures in brackets are the percentage to the total.
Source: Agro-Economic Research Centre, H.P.University, Shimla.

Variety-wise production of different grades of apple is presented in Table-3.6. A critical examination of the results revealed that Royal Delicious is the major variety grown by the orchardists in the state. About 78 per cent of total production is contributed by this variety. The grade-wise production of apple shows that the share of medium and small grade in the total production is around 78 per cent followed by extra small 9.26 per cent and large grade 9.21 per cent. The average production per farm was 268 boxes (4.82 tonnes) during 1996-97.

Royal delicious variety of apple has higher demand in the consuming markets consequently area and production of this variety is higher as comparative to other varieties in the State. Golden, Rich-a-Red and Red delicious varieties are grown as polynizer and early production for marketing. There is no special variety of apples grown for processing purposes. However, culled fruit of all varieties are used for processing

Table: 3.5 Variety-Wise Production of Apple on Sample Farms.

(Boxes per farm)

Variety	Marginal Farms	Small Farms	Medium Farms	All Farms
Royal Delicious	119.00(79.71)	261.79(77.21)	473.23(76.73)	208.63(77.93)
Red Delicious	4.14(2.77)	10.31(3.04)	18.25(2.96)	7.83(2.92)
Red Gold	4.61(3.07)	13.63(4.02)	22.94(3.72)	9.67(3.62)
Golden Delicious	17.71(11.86)	45.16(13.32)	88.50(14.35)	35.29(13.12)
Others	3.57(2.39)	8.17(2.41)	14.43(2.34)	6.29(2.35)
Total	149.30(100)	339.06(100)	616.76(100)	267.71(100)

Note: Figures in brackets are the percentage to total.
Source: Agro-Economic Research Centre, H.P.University, Shimla.

Table-3.6: Variety- Wise Production of Different Grades of Apple on Sample Farms.

(% of total)

Variety	Grades of Apple					Total	Qty/farm (in boxes)
	Extra large	Large	Medium	Small	Extra small		
Royal Delicious	3.18	8.99	48.78	31.00	8.05	100	208.63
Red Delicious	2.94	11.11	39.59	29.76	16.60	100	7.83
Red Gold	3.00	9.51	39.09	30.82	17.58	100	9.67
Golden Delicious	4.06	9.95	49.19	25.50	11.30	100	35.29
Others	2.86	9.86	41.02	29.89	16.37	100	6.29
Total	3.28	9.21	48.04	30.21	9.26	100	267.71

Source: Agro-Economic Research Centre, H. P. University, Shimla.

Marketable Surplus

Of the total production, the proportion of marketable surplus in fruits, in general, is much higher as compared to that in grains. This is because fruits are perishable in nature and can be consumed only during short period. Marketable surplus is that part of the produce which may be available with the producers for disposal after meeting their requirement for various purposes (i.e. home consumption, gifts, payments in kinds, etc.).

On an average marketable surplus of apple has been estimated at 97 per cent of the total production (Table-3.7). The criteria adopted by the sampled orchardists for judging the maturity of apple for distant and local markets were different as presented in Table-3.8. For distant markets colour was given more weightage followed by size, days from full bloom to maturity, physical appearance and market price whereas, for local (near) markets price was given maximum weightage in harvesting decision.

Table-3.7: Marketable Surplus of Apple in Different Categories of Sampled Orchardist.

(Boxes/farm)

Particulars	Marginal	Small	Medium	All farms
Total production	149.31	333.06	616.76	267.72
Utilization of apple				
Home consumption	6.14	5.97	5.23	5.97
Kind wages, gift etc.	1.46	2.12	3.24	1.89
Sub total	7.60	8.09	8.47	7.86
Marketable surplus	141.71	330.97	608.29	229.86

Source: Agro-Economic Research Centre, H. P. University, Shimla.

Table-3.8: Criteria for judging the maturity of Apple for different markets.

(Multiple response)

Characteristics	For distant markets (Delhi and beyond)	For local markets(Chandigarh, H.P., Punjab, Haryana)
Colour	70	15
Size	60	18
Physical Appearances	20	5
Market Price	18	35
Days from full boom to maturity	22	8

Source: Agro-Economic Research Centre, H. P. University, Shimla.

Production and Disposal of culled Apples

Culled Fruits: This grade covers fruits of marketable quality, which do not qualify for inclusion in higher classes. This grade of fruits allows defects in shape, development and colouring provided the fruit preserves its characteristics. The stem may be missing provided that the skin is not damaged. Skin defects are however, allowed for each fruits within the following limits:

i. defect of elongated shape, maximum length up to 4 cms.

ii. In case of other defects, the total area affected shall be limited to 2.5 sq. cm., with the exception of speckles, which must not extend over more than 1 sq. cm. in area. The flesh should be free from major defects, however, two flesh defects out of: (i) slight injury (ii) bruised (iii) brown patches, are allowed.

Those fruits, which may not have, full colour and form typical to the variety, or below 65 mm. in diameter or bearing more than 3 pockmarks due to hail or healed insect damage, or bruised fruits even though they may be sound otherwise, are all known as culls. Drops when the fruits have reached picking maturity are also termed as culled fruits.

If we compare the percentage of culls to total production for different categories of sample farms (Table-3.9) it can be observed that it was higher on small farms and lower on marginal farms. This may be because of the reason that marginal farmers are technically well informed and operations like picking, grading etc. are done personally which reduces the chances of fruit spoilage by getting bruised, etc. On an average, per farm quantity of culled apple was 226kg, 601 kg, 1053 kg and 447 kg on marginal, small, medium and over all farm situations, respectively. However, proportion of culled in total apple production was 8.41, 9.85, 9.48 and 9.27 percent respectively.

Fruits are highly perishable in nature and its production is dependent upon climatic conditions, which results in variation in quality of the fruits. It is a recognized fact the fresh fruits of good quality fetch better prices to the growers than the low quality fruits. Though there is no significant difference in the nutritive value of the two grades but it is the liking/preference of consumer that accounts for the prices differential. Processing is the best alternative available for utilizing these low quality fruits, which benefits both the producers and consumers. This way, the producers get something for this part of the produce which otherwise is not of much use to the producer, and

the consumers too get food of high nutritive value throughout the year. In addition these low-grade fruits known as culls are used by growers for domestic consumption, as feed to animals, processing etc. The utilization of culled apple on sampled farms is presented in Table-3.10. Culled fruits are either exported in bags to different markets or are procured by hpmc and other private agencies in the state for processing purposes.

Table-3.9: Variety- Wise Production of Culled Apple on Sample Farms.

(% of total)

Variety	Marginal Farms	Small Farms	Medium Farms	All Farms
Royal Delicious	64.60	67.89	70.37	67.56
Red Delicious	6.65	5.49	3.70	5.14
Red Gold	6.19	6.82	7.32	6.93
Golden Delicious	18.58	15.81	14.15	16.12
Others	3.98	3.99	4.48	4.25
Total	100.0 (226.00)	100.0 (601.00)	100.0 (1053.0)	100.0 (447.00)

Note: Figures in parentheses are per farm quantity of culled apple in kgs.
Source: Agro-Economic Research Centre, H. P. University, Shimla.

Table-3.10: Utilization of Culled Apple on Sample Farms.

(% of total)

Utilization	Marginal Farms	Small Farms	Medium Farms	All Farms
Used for eating	18.14	6.49	3.89	9.40
Fed to animals	5.31	2.50	1.90	3.36
Used for processing	11.06	3.83	2.47	5.37
Sold	55.31	83.19	89.46	76.73
Unused	10.18	3.99	2.28	5.14
Total culled apple	100.0	100.0	100.0	100.0
% of culled in total production	8.41	9.85	9.48	9.27

Note: Figures in parentheses are per farm quantity of culled apple in kgs.
Source: Agro-Economic Research Centre, H. P. University, Shimla.

Marketing Functions of Apples

Picking: Picking of apples from tree is the first function in preparing the fruits for the market. This is generally done by hand. The ripe fruit is lifted with one hand and at the same time downward pressure is applied on stalk. A gentle rotatory motion breaks the fruit away and then it is gently placed in a padded basket to avoid bruises. The proper time at which the fruit must be harvested depends upon the expected time lag between picking and arrival of fruit in the market. In addition to this, factors like change of skin colour, attainment of size, feel of hand, etc., and finally the experience of the picker determines the actual picking time of fruit. Though certain scientific tests like soluble solid test, pressure test, etc., are available to judge the maturity of fruits, those are practically never made use of.

The apples require delicate handling so as to avoid bruises. After the fruit has been picked it is carefully placed in picking basket and later on are transferred into a bigger basket, called 'Kilta', to be carried to the place where grading and packing is to be done. At packinghouse each fruit is individually taken out of 'kilta' to be placed in stock. For a careful handling of fruit, it is necessary that certain precautions be taken such as fingernails of pickers, packers and graders. The 'kilta' too is generally padded from inside to avoid injuries to fruits. The fruit should also be protected from excessive exposure to direct sunlight.

Grading: Apples in Himachal Pradesh are graded both for quality and size. There are generally two qualities and six sizes for the market. Thus, each lot of a particular variety of apples is mostly divided into 12 different grades for table purposes.

Quality Grading: Factors determining the quality of apples include shape, stage of maturity, colour, freedom from injuries, blemishes, disease spots, bruises etc. There are three recognized quality grades of apple commonly known as A, B and C. The first two grades are marketable while the 'C' grade apples are not considered fit for table purposes and are classified as culled apples to be sold for processing purpose

only. ‘A’ grade fruits are such which are typical in shape and colour characteristics of the variety and are sufficiently mature to permit the process of ripening in the normal marketing chain. They are also required to be clean and free from blemishes, injury or bruises, of any type. In ‘B’ grade, fruits with slightly abnormal shape and even with less than 50 per cent colour characteristics of the variety are included. However, in the matter of maturity, the standard is the same as for ‘A’ grade fruits. Fruits of this grade may have up to three healed spots of not larger than ½ cm. in size. All those fruits which are not to be included under ‘A’ and ‘B’ grades are graded as ‘C’ grade fruits.

In this regard, it may also be stated that in most of the cases, the orchardists do not follow these specifications strictly. It has often been observed that the apple boxes are marked with as many as 5 A’s and rarely as B grade. The orchardists argue that if they themselves mark their fruit as ‘B’, others will grade it still lower. Such thinking has been doing more harm than good and efforts are afoot to correct the situation, as far as possible.

Size Grading: After each fruit has been individually graded for quality, size grading is done. All this is done by hand. The operation consists of holding each fruit in left hand at the broadest point and placing right hand fingers between the tips of thumb and middle finger. The size grade is than determined (Table-3.11) on the basis of the number of fingers to cover the gap between thumb and the middle finger. It was observed that about 43 per cent of the total apples are of medium category and 22 per cent is of large grade.

Since the hands and fingers of persons differ in size, the logical question is as to how the size grading can be uniform by this method. However, experience has shown that this is a fairly satisfactory method when handled by experienced graders possessing the needed skill. Such graders are in much demand and therefore, their wages are high. Keeping these situations in view, the Department of Horticulture evolved hand graders, which could be used by all categories of apple growers. These wooden

graders undoubtedly provide more precise grading, but the output per person is low. This obviously means more cost of grading to which the orchardists are generally very sensitive and therefore not willing to adopt. Thus these graders could not gain any popularity.

Table-3.11: Various Size Grades of Himachal Apples.

Grade	Diameter of fruit at the broadest point	No. of fingers placed between left hand thumb and middle finger
1. Super Large	87 mm. + 3 mm	4 fingers and Thumb
2. Extra large	81 mm. + 3 mm.	4 figures and some extra space
3. Large	75 mm. + 3 mm.	3-4 fingers
4. Medium	69 mm. + 3 mm.	2-3 fingers
5. Small	63 mm. + 3 mm.	1-2 fingers
6. Extra small	57 mm. + 3 mm.	0-1 fingers
Pitto*	Lesser than 51 mm.	None

* This is mixed with C Grade apples and sold as culls for processing.

Source: Agro-Economic Research Centre, H. P. University, Shimla.

Mechanized Grading of Apple: The Himachal Pradesh Government had installed 5 mechanized grading and packinghouses in fruit producing areas of the State in the early 1980's. The popularity of mechanized use of grading and packing has been continuously increasing (see Table-3.12). The main complaint of farmers is that because of long queue, waiting time is more and the produce of one farmer gets mixed up with others at the grading houses. Problem of pilferage was also not uncommon at the premises of grading houses. Mechanical grading was done in hygienic conditions and was economical due to cost effectiveness (see table-3.13). It also saves farmers from the inconveniences of arranging labour force on their own for grading purposes when the task is to be performed at the farm itself. The demand for labour during the harvesting season far exceeds its supply. It was also reported that due to very bad conditions of roads, which further worsens during apple harvesting time coincides with monsoon season, the unpacked apple lots on their way to the mechanical grading houses get rubbed against each other and thus are damaged.

Table-3.12: Annual Quantity of Fruits Graded and Packed in Grading and Packing Houses, and Stored in Cold Storages of HPMC in Himachal Pradesh.

(In boxes)

Year	Fruits graded and packed	Capacity utilization	Stored in cold storage	Capacity utilization %
1979-80	17,000	3.73	-	-
1980-81	93,000	20.39	-	-
1981-82	84,000	18.42	-	-
1982-83	1,11,000	24.34	9,000	3.27
1983-84	1,45,000	31.80	35,000	12.73
1984-85	16,700	3.66	19,000	6.91
1985-86	29,300	6.43	53,000	19.27
1986-87	22,700	4.98	94,000	34.18
1987-88	17,100	3.75	70,000	25.45
1988-89	35,900	7.87	1,08,000	39.27
1989-90	18,700	4.10	1,05,000	38.18
1990-91	72,000	15.79	49,000	17.82
1991-92	34,000	7.46	90	0.03
1992-93	33,000	7.24	1,300	0.47
1993-94	90,000	19.74	7,100	2.58
1994-95	67,000	14.69	2,100	0.76
1995-96	1,06,000	23.25	600	0.02
1996-97	1,06000	23.25	47000	1.71
1997-98	36000	7.89	218000	79.27
1998-99	74000	16.23	68000	24.73
1999-02	6000	1.32	1000	0.36
2000-01	45000	9.87	12000	4.36
2001-02	7000	1.54	69000	25.00
2002-03	13000	2.87	19000	6.91
2003-04	34000	7.46	48000	17.45

Source: Himachal Pradesh Horticultural Produce Marketing and Processing Corporation (HPMC), Shimla.

Table-3.13: Preference of Different Types of Grading & Packing.

Reasons	Manual Grading	Mechanized Grading
Economical	Less	More
Easy	More	Less
Safety	Less	More
Mixing Of Produce	Nil	More
Hygienic	Less	More
Pilferage	Nil	More

Source: Agro-Economic Research Centre, H. P. University, Shimla.

Packing of Apple: There are three options available for packing the apples. The good quality marketable fruit is packed either in wooden box or corrugated-fiber-board (cfb) cartons (Table-3.14). The processing grade apples are invariably sold to Himachal Pradesh Horticultural Produce Marketing and Processing Corporation (hpmc) in gunny bags. The cfb cartons are eco-friendly and are preferred by consumers as it looks attractive and is more presentable. The cfb cartons supplied by H.P. Govt. are of good quality and often of high resistance against moisture and weight when stacked.

Table-3.14: Use of Various types Packing Methods.

Type Of Packing	Cost Unit (Rs)	% in total use	Reasons for preference
Wooden Box	40	40	Easily available, cheap
Cfb	37	35	Subsidy, more fruit, better prices in the market
Crates	85	5	Subsidy. Longer life, easy in carrying produce
Gunny Bags	15	20	Cheap, easily available

Source: Agro-Economic Research Centre, H. P. University, Shimla.

Table-3.15: Preference for Various types of Packing Cases.

Reasons	Cfb	Wooden Box	Gunny Bags
Economically	More	Less	High
Availability	Less	More	More
Safety	More	More	Less
Qty. Of Produce	More	Less	High
Buyer Preference	High	Less	Less
Price Efficiency	High	Less	Less
Ecofreindly	More	Less	More

Source: Agro-Economic Research Centre, H. P. University, Shimla.

The analysis indicates that 40 percent of apples were packed in wooden boxes despite its highest per unit cost of Rs 40 per box. The main reason for its highest use is its easy availability and the belief that quality does not deteriorate in wooden boxes (Table-3.15). The cfb cartons are slightly cheaper as these are available on subsidy but the supply is not adequate. Plastic crates also used for packing. About 5 per cent of total fruits produced were marketed in plastic crates. Culled fruits (processing grade), which accounts for about 9 per cent of total production, are marketed in gunny bags.

Transportation: After grading and packing in boxes or in gunny bags at farms the fruits have to be brought to the nearby road head to the farm for onward transportation to the market. The boxes are brought to road-head either manually or by pack animals. The third option is of gravity ropeway. The ropeways are comparatively economical and save time. But these are available at a few places only. The only draw back is that installation of ropeways is highly capital intensive. Furthermore they are not feasible in those areas, which are at low elevation to the road head or are on valley side of roadside or where quantum of produce to be handled is small.

An economic analysis of local transport of apple boxes through different modes indicated that initial investment for a ropeway ranged between Rs 1 to 1.5 lakh depending upon the length of span (Table-3.16). The price of pack animal (mule) was around Rs 12,000. Recurring for each pack animal was Rs100 to 115 per day. The transport charges are highest for manual carriage and minimum for ropeways. From farm to the nearby village road head about 50 per cent of the produce is head carried by human labour, 20 per cent by pack animals and about 30 per cent by ropeways.

Gravity ropeways are the quick and cheapest way of carrying farm produce from producing areas to the road head. When the orchards are located on upper hill side of the main road and does not have any link road, farmers bring their produce to ropeway station point from where it is transported on rope way to the other end point of the rope way located near the road. There being direct air connection between two points in a hilly terrain transportation through this mode saves lot of time. Thus, it has become good source of income for private entrepreneurs who have invested money in ropeways for commercial purpose. The maintenance and recurring costs of the system are meager. The initial cost of fabricating a ropeway for a 500 meters span is about Rs 81,200. Generally, the ropeways recover their installation costs within three years. On an average in each season a rope way carried about 22,000 boxes or its equivalent in gunny bags. The average charge levied by operators is about Rs 4 per box, of which one third is the net profit to the owner of the ropeway.

Table-3.16: Cost of Carriage of Produce From Farm to Nearest Road.

Mode of Carriage	Initial Investment (Rs, 000)	Recurring Cost (Rs)	Charges Per Box of 18 kg (Rs)	% Of Total Produce Handled
Manual	0	-	12.00	50
Pack Animals	10-15	100-150/day	11.00	20
Ropeways	85-200	2.50/box	4.00	30

Source: Agro-Economic Research Centre, H. P. University, Shimla.

Table-3.17: Efficiency of Various Modes of Carriage of Farm Products.

Reasons	Manual	Pack Animals	Ropeways
Economical	Less	Less	More
Time Efficiency	Less	Less	High
Safety	Less	Less	More
Initial Cost	Nil	Less	High

Source: Agro-Economic Research Centre, H. P. University, Shimla.

Processing of Apple: The establishment of processing plants often brings great advantages to the farmers by giving them an extra outlet for sale of their products. Processing is undertaken mainly when there is no adequate market for the fresh products at the time it is ready for sale. Consumption takes place at a fairly steady rate throughout the year, whereas fruits and vegetables, for example, mature only during a short season. The quantities, which are surplus to immediate demand, must be processed or else be largely wasted. The processing (canning, drying, smoking, salting or crushing for juice, etc.) contributes greatly to producer and consumer welfare. To have greater price stabilization effect the procurement of the raw material for processing should be done at the time there is harvest glut at the farm and at the local assembling points.

The HPMC has established two processing plants in Himachal Pradesh: one at Jarol and another at Parwanoo. The quantity of fruits procured by these processing plants of hpmc was 6,063 metric tonnes during 2003-04 (See Table-3.18). Besides, 9 small fruit processing units have been established by the State Department of Horticulture at various places in H.P., which have a total annual capacity of 6.5 tones (see Table-3.19). The quantity of fruits processed in these units is given in Table-3.20. The capacity utilization rate of these units varies from 5.05 percent in 1990-91 to 19.40 percent in 2003-04.

Keeping in view the past experience of Himachal Pradesh in fruit and vegetables processing a word of warning is needed on the food processing projects. Processing

plants should not, for the sake of engineering considerations, be constructed on a scale for which local supplies of raw material do not provide an economic turnover, unless there is a real likelihood that the existence of the plant would stimulate more production. In any case the effort should be made to run the plant at optimum capacity.

Marketing Channels of Apple

Distribution comprises movement of apples from producer to ultimate consumer. In this process the fruits has to pass through more than one hand, except when it is directly sold to consumer by the producer, a rare phenomenon. In this chain various agencies like growers, pre-harvest contractors, wholesalers, retailers, etc., are engaged. This chain of intermediaries/functionaries is called the marketing channel. Himachal apple growers for marketing their produce generally use the following channels.

(1) Producer—Consumer

(2) Producer—Forwarding agent—Commission agent—Wholesaler—Retailer—Consumer

(3) Producer—Producers' Cooperative—Wholesaler—Retailer—Consumer

(4) Producer—Pre-harvest contractor—Commission agent/Wholesaler—Retailer—Consumer

(5) Producer—Commission agent—Wholesaler—(Self as F.A.) Retailer—Consumer

(6) Producer—hpmc—Wholesaler—Retailer—Consumer

(7) Producer—Retailer—Consumer

(8) Producer—Processing Unit—Consumer

Table-3.18: Annual Quantity of Fruit Processed and Capacity Utilization of Processing Plants of HPMC.

Year	Fruits Processed (MT)			Capacity utilization (%)
	Apple	Other Fruits	Total Fruits	
1975-76	2,104	11	2,115	3.76
1976-77	298	-	298	0.53
1977-78	226	39	265	0.47
1978-79	1,502	48	1,550	2.76
1979-80	2,351	49	2,400	4.27
1980-81	1,021	50	1,071	1.90
1981-82	8,592	194	8,786	15.63
1982-83	3,219	163	3,382	6.02
1983-84	5,007	75	5,082	9.04
1984-85	1,034	188	1,222	2.17
1985-86	8,457	83	8,540	15.19
1986-87	13,391	754	14,145	25.16
1987-88	7,564	432	7,996	14.22
1988-89	7,323	376	7,699	13.70
1989-90	11,243	740	11,983	21.32
1990-91	4,442	383	4,825	8.58
1991-92	175	613	788	1.40
1992-93	-	136	136	0.24
1993-94	-	12	12	Neg.
1994-95	3,121	816	3,937	7.00
1995-96	13,679	448	14,127	25.13
1996-97	10184.48	2196.67	12381.15	95.24
1997-98	11790.60	1483.85	13274.45	102.11
1998-99	10844.33	681.08	11525.41	88.65
1999-2k	751.60	618.09	1369.69	10.54
2000-01	8033.09	360.72	8393.81	64.56
2001-02	6652.34	255.8	6908.14	53.14
2002-03	7525.00	231.87	7756.87	59.66
2003-04	5800.66	261.49	6063.25	46.64

Source: HPMC, Shimla.

Table-3.19: Fruit Processing Units Under the Department of Horticulture H.P.

Location of plant	District	Year of establishment	Installed capacity tonnes/day
1.Shimla	Shimla	1958	1.00
2.Dholakuan	Sirmour	1964	1.00
3.Rajpur	Chamba	1968	0.50
4.Rajgarh	Sirmour	1968	0.50
5.Bagthar	Sirmour	1969	0.05
6.Nagrota Bagwan	Kangra	1978	1.00
7.Nihal	Bilaspur	1980	0.50
8. Shamshi	Kullu	1981	1.00
9. Reckong Peo	Kinnaur	1982	0.50
		Total	6.50

Source: Directorate of Horticulture, Himachal Pradesh, Shimla-2

Table-3.20: Annual Quantity of Fruits Processed in Different Processing Units of the Department of Horticulture Himachal Pradesh.

(Quantity in tonnes)

Year	Quantity of fruit and vegetables	Quantity of processed products	Capacity utilization
1980-81	120.6	172.6	5.08
1981-82	251.7	168.4	10.61
1982-83	151.7	78.8	6.39
1983-84	176.0	107.7	7.42
1984-85	161.0	129.5	6.79
1985-86	335.0	214.0	14.12
1986-87	329.0	220.9	13.87
1987-88	261.0	259.8	11.00
1988-89	216.0	239.1	9.10
1989-90	321.0	236.0	13.53
1990-91	119.8	129.8	5.05
1991-92	171.6	177.8	7.23
1992-93	338.9	206.2	14.28
1993-94	340.0	189.5	14.33
1994-95	216.0	169.0	9.10
1995-96	308.8	245.0	13.02
1996-97	274.00	209.0	21.07
1997-98	314.00	269.50	24.15
1998-99	421.4	261.90	32.41
1999-2k	238.13	234.29	18.31
2000-01	205.00	200.90	15.76
2001-02	170.00	172.69	13.07
2002-03	200.00	215.55	15.38
2003-04	252.30	241.10	19.40

Channel 1: In this channel, the fruits of a particular lot are sold at assembling point. It may be the local consumer or any other agency on behalf of the consumer. This happens particularly in case of small growers, who have small lots and prefer to sell at the earliest at orchard site in order to have quick returns and to avoid transportation charges. This channel gives maximum returns to grower in the absence of intermediaries.

Channel 2: The role of forwarding agent (F.A.) in the marketing channel is to arrange for transport and to ensure that fruit reaches the particular market and

commission agent, etc., where the grower wants to sent his produce. For his services the forwarding agent charges a very nominal fee. The grower takes his produce to the forwarding agent, who has his temporary establishment at road head near the assembling point and then it is the responsibility of the F.A. to make arrangements for sending the fruit boxes to specified agency in the specified market.

Channel 3: In certain areas apple producers have formed their co-operative societies. Such societies handle marketing of produce of their own members. The producers assemble their fruit and take it to market by hiring trucks. This, first middleman i.e. F.A. is eliminated from the marketing channel. The fruit is then sold in the market through commission agents in the presence of a nominee of the cooperative eliminating any possibility of cheating by the commission agents for which they are notorious.

Channel 4: In Himachal Pradesh, pre-harvest contractors are very common in Kullu area. They purchase standing crop and undertake to perform all the functions necessary for the disposal of the produce. This channel resembles channel-2 except a pre-harvest contractor instead of the producer handles the produce.

Channel 5: Some big producers, who have large quantity of apple to market, arrange transportation of their own and send the produce to market themselves. Thus, they themselves act as forwarding agents.

Channel 6: In this case, the producers send their produce to market through Hpmc, which acts as the forwarding agent.

Channel 7: Here the producers send their produce directly to retailers in consuming markets. This is possible in case of small growers.

Channel 8: Along with marketable quantity of apples there are about 16 per cent of apples, which are not fit for table purposes. Such apples are called ‘culls’ and are used for preparing juice, jam, jelly, etc., by processing units. Thus, growers send all culled apples directly to processing units. Such apples are packed in gunny bags instead of boxes. In the State hpmc is having the largest processing capacity.

Price Spread and Marketing Margins

Effective marketing strategy especially for such a commodity depends mainly on the decision of where, when, how and how much to market? For this the services of a chain of middlemen and functionaries become inevitable. Each of the functionaries and services has to be paid for. The share of consumers' rupee received by the producers depends upon several factors including the channel used. The difference between the price paid by the consumer and that received by the producer consists of marketing costs or marketing margins. As the product moves closer and closer to the ultimate consumer, the price per selling unit increases in order to provide for margins to the various intermediaries and functionaries and provide auxiliary services as well. Therefore, to protect the interest of producers and of consumers it is essential to integrate the role of intermediaries. Thus price spread is a good yardstick for measuring marketing efficiency i.e., minimum input of various economic resources which will result in satisfaction of goods and services desired by the consumers.

Marketing margins include all costs of assembling, grading, packing, transportation, handling, processing, storage, wholesaling and retailing in the entire process of marketing. The study of marketing margins is very essential in the formulation of an appropriate marketing policy. On the one hand, producers deserve a legitimate share in the consumers' rupee, and on the other, consumers have to be safeguarded against excessive prices. These twin objectives can best be achieved by ensuring the services of intermediaries and functionaries at reasonable costs. In this context, the importance of regular and continuous study of marketing margins in case of Himachal apples in various markets will be very important because it is the general assumption that the high cost of marketing is caused by excessive waste, inefficiencies and high profits of the agencies and individuals involved throughout the marketing channel.

The price spread/margins were worked out of Delhi and Chandigarh markets because atleast 90 percent of the Himachal apples are sold through these two markets. In this study, apple boxes passing through the second channel, which is the most popular and therefore important, were followed. It is revealed from Table-3.23 that the producers' share was highest in case of medium farms (53.14%) than those of small farms (52.95%) and marginal farms (51.79%). In case of apple marketed at Chandigarh market producer's share in consumer rupee was 53.18 percent, 54.35 percent and 54.44 percent on marginal, small and medium farms respectively (see Table-3.24) The cost of transportation being directly related to the distance, there are variations in marketing margin between Delhi and Chandigarh markets. However, the variations are those of packing material and transportation. Both these costs are payable by the producers/growers. Further, it may be concluded that the rise or fall in the producers' share is more than proportional to the rate of rise or fall in the price level. This is so only because several costs remain fixed i.e., do not change with prices. Scrutiny of data has revealed the fact that the benefits of rise in prices are not fully availed of by the growers and middlemen reflecting the inefficiency of the marketing mechanism have intercepted their grains.

Table-3.21: Producer's Share and Marketing Margins of Himachal Apple at Delhi market During 2001.

(Rs per Box of 18 kg)

Particulars	Marginal Farms	Small Farms	Medium Farms	All Farms
Net Price Received by Grower	231.74	240.26	238.45	236.76
Expenses incurred by Growers				
Picking, Grading and Packing	12.00	11.00	11.00	11.34
Packing Materials	45.00	43.00	42.00	43.35
Carriage up to Road head	3.00	2.75	2.55	2.77
Freight up to Market	20.00	20.00	20.00	20.00
Comm. of Forwarding agent	2.00	2.00	2.00	2.00
State Tax, Octroi	2.50	2.50	2.50	2.50
Loading/Unloading	3.00	2.75	2.60	2.78
Comm. of Commission Agent	27.76	28.24	27.90	27.96
Sub-Total	115.26	112.74	110.55	114.70
Wholesale Price	347.00	353.00	349.00	351.46
Expenses Incurred By Comm. Agent/Mashkhor				
Carriage including handling charges	1.50	1.50	1.50	1.50
Market Fee and Comm. of Comm. Agent/Mashkhor	3.47	3.53	3.49	3.50
Sub-Total	4.97	5.03	4.99	5.00
Mashkhor sale price	351.97	358.03	353.99	356.46
Retailer's Expenses				
Carriage and handling charges	5.00	5.00	5.00	5.00
Retailer's Losses	36.20	36.30	35.90	36.13
Sub-Total	41.20	41.30	40.90	41.13
Retailer's Margin	54.29	54.45	53.85	54.20
Consumer's Price	447.46	453.78	448.74	451.79

Source: Agro-Economic Research Centre, H. P. University, Shimla.

Table-3.22:Producer's Share and Marketing Margins of Himachal Apple at Chandigarh Market During 2001.

(Rs per Box of 18 kg)

Particulars	Marginal Farms	Small Farms	Medium Farms	All Farms
Net Price Received by Grower	214.06	222.16	219.83	217.87
Expenses incurred by Growers on:				
Picking, Grading and Packing	12.00	11.00	11.00	11.47
Packing Materials	45.00	43.00	42.00	43.73
Carriage up to Road head	3.00	2.75	2.55	2.83
Freight up to Market	11.00	11.00	11.00	11.00
Comm. of Forwarding agent	2.00	2.00	2.00	2.00
State Tax, Octroi	2.50	2.50	2.50	2.50
Loading/Unloading	3.00	2.75	2.60	2.84
Comm. of Commission Agent	25.44	25.84	25.52	25.58
Sub-Total	103.94	100.84	99.17	101.95
Wholesale Price	318.00	323.00	319.00	319.82
Retailer's Expenses on:				
Carriage and handling charges	5.00	5.00	5.00	5.00
Retailer's Losses	31.80	32.30	31.90	31.98
Sub-Total	36.80	37.30	36.90	36.98
Retailer's Margin	47.70	48.45	47.85	47.97
Consumer's Price	402.50	408.75	403.75	404.76

Table-3.23: Producer's Share and Marketing Margins of Himachal Apple at Delhi Market During 2001.

(% of consumer price)

Particulars	Marginal Farms	Small Farms	Medium Farms	All Farms
Net Price Received by Grower	51.79	52.95	53.14	52.40
Expenses incurred by Growers on:				
Picking, Grading and Packing	2.68	2.42	2.45	2.51
Packing Materials	10.05	9.47	9.36	9.60
Carriage up to Road head	0.68	0.66	0.57	0.61
Freight up to Market	4.47	4.41	4.46	4.43
Comm. of Forwarding agent	0.44	0.44	0.45	0.44
State Tax, Octroi	0.56	0.55	0.56	0.55
Loading/Unloading	0.68	0.66	0.58	0.62
Commission of Commission Agent	6.20	6.22	6.22	6.19
Sub-Total	25.76	24.84	24.65	25.39
Wholesale Price	77.55	77.79	77.78	77.79
Retailer's Expenses on:				
Carriage and handling charges	0.33	0.33	0.33	0.33
Market Fee and Commission of Commission Agent /Mashkhor	0.78	0.78	0.78	0.77
Sub-Total	1.11	1.11	0.11	1.10
Mashkhor sale price/wholesale price	78.66	78.90	78.79	78.90
Retailer's Expenses				
Carriage and handling charges	1.12	1.10	1.11	1.10
Retailer's Losses	8.09	7.91	8.00	7.90
Sub-Total	9.21	9.01	9.11	9.10
Retailer's Margin	12.13	11.99	12.00	11.99
Consumer's Prices	100.00 (447.46)	100.00 (453.78	100.00 (448.74)	100.00 (451.79)

Note: Figures in parentheses are the consumer price Rs/box.

Table-3.24:Producer's Share and Marketing Margins of Himachal Apple at Chandigarh market During 2001.

(% of consumer price)

Particulars	Marginal Farms	Small Farms	Medium Farms	All Farms
Net Price Received by Grower	53.18	54.35	54.45	53.83
Expenses incurred by Growers on:				
Picking, Grading and Packing	2.98	2.69	2.72	2.83
Packing Materials	11.18	10.52	10.40	`0.80
Carriage up to Road head	0.75	0.67	0.63	0.69
Freight up to Market	2.73	2.69	2.72	2.72
Commission of Forwarding agent	0.50	0.49	0.49	0.49
State Tax, Octroi	0.62	0.61	0.62	0.62
Loading/Unloading	0.74	0.67	0.64	0.70
Commission of Commission Agent	6.32	6.32	6.32	6.32
Sub-Total	25.82	24.67	24.56	25.19
Wholesale Price	79.00	79.02	79.00	79.01
Retailer's Expenses on:				
Carriage and handling charges	1.24	1.22	1.24	1.23
Retailer's Losses	7.90	7,90	7.90	7.90
Sub-Total	9.14	9.12	9.14	9.13
Retailer's Margin	11.86	11.86	11.85	11.85
Consumer's Price	100.00 (402.50)	100.00 (408.75)	100.00 (403.75)	100.00 (404.76)

Source: Agro-Economic Research Centre, H. P. University, Shimla.

Dynamics of Price Spread in Marketing of Apple at Delhi

The price spread/margins in marketing of Himachal apple at Delhi Market was studied to know how much the producer is getting for his produce in this market over a period of time. The marketing costs, margins of intermediaries and producer's share are analysed to ascertain the extent of over all improvement in apple marketing system over the period of 25 years.

Changes in Marketing Cost

The analysis revealed that the marketing cost per box incurred by producers has indicated an increasing trend over the period under study. On an average, marketing cost increased from Rs.14.27 per box in 1975-76 to Rs.119.05/box in 2001-02 (Table-3.25). The marketing cost has increased about more than eight times during the past two and half decades. The break up of marketing costs incurred by the apple producer revealed that grading, packing charges, packing material and transportation (including carriage up to road head) constituted major share and ranged between 65 per cent to 70 per cent during different periods under study. Commission for forwarding agent, commission agent, taxes, loading unloading are the other cost components, which fluctuated between 30 per cent to 35 percent

The marketing cost incurred by Mashakhor included handling repacking of fruits at Delhi which has increased from 0.64 per box to Rs.6.3 (10 times) during the period of 25 years. The retailer expense incurred on carriage of apples upto retail point and handling were Rs.0.70 per box in 1975-76 which has increased to Rs. 5 box during 2001-02 indicating an increase of 7 times. The retailer's losses accounted for Rs. 4.70 per box in 1975-76, which has increased, to Rs.45.67 per box in 2001-02. Further, the analysis revealed that the consumer price has been increasing in every year under study. The analysis indicates that the rate of increase in wholesale prices

is relatively higher than that of consumer prices. Another important inference emerged from the figures given in Table-3.25 is regarding the pace of increase in marketing costs vis-à-vis consumer price. The analysis indicated that consumer price has increased relatively at a higher pace (10.5 time) than the marketing costs (8.7 times). This pattern of increase has helped in improving the marketing efficiency.

Changes in Marketing Margins

The marketing margins of intermediaries have also increased from Rs.2.76 per box in 1975-76 to Rs.90.5 per box in 2001-02. The proportion of profit margins of intermediaries in the consumer's price has increased from 5 per cent to 16 per cent. However, the proportion of marketing costs in consumer's price has decreased from 29 per cent to 23 per cent during the period under study. The losses in apples were also decreased from 8.6 percent in 1975-76 to 7.9 percent of consumer's price in 2001-02.

Table-3.25: Price Spread in Marketing of Himachal Apple at Delhi Market During 1975-2002.

(Rs per box of 18 kg.)

Cost Items	1975-76	1979-80	1984-85	1989-90	1995-96	2001-02
1.Price received by grower	23.56	27.58	52.83	66.83	128.95	309.85
Percent of consumer's rupee	43.13	41.68	47.18	44.41	43.96	53.80
2. Expenses incurred by grower						
i)Picking, packing & grading	1.80	2.00	2.80	4.33	10.90	11.34
ii) Packing material	3.25	6.00	11.29	20.89	26.70	43.35
iii) Carriage up to forwarding point	1.00	1.30	1.80	1.49	2.60	2.77
iv) Transportation cost up to market	3.90	5.50	6.91	9.85	21.90	20.00
v) Commission of forwarding agent	0.25	0.25	0.50	1.00	1.00	2.00
vi) State tax, Octroi	0.42	9.66	1.11	1.09	2.50	2.50
vii) Loading & Unloading	1.00	1.00	1.00	0.85	2.00	2.78
viii) Commission of Commission Agent	2.65	2.34	4.11	6.08	17.09	34.31
Sub-Total	14.27	19.05	29.53	45.58	84.69	119.05
3. Whole sale price	37.83	46.63	82.36	112.41	213.64	428.90
4. Expenses incurred by Mashakor*						
i) Freight & handling charge	0.24	0.30	0.50	0.75	2.00	2.00
ii) Market fee & commission	0.40	0.70	0.85	2.25	4.27	4.30
iii) Mashakhor's margin	2.26	1.65	3.00	3.37	12.98	22.00
Sub Total	2.90	2.65	4.35	6.37	19.25	28.30
5. Mashakhor/wholesale price	40.73	49.28	86.71	118.78	232.89	457.20
6. Retailers expenses						
i) Carriage & handling charges	0.70	1.20	1.50	2.00	2.00	5.00
ii) Retailers losses	4.70	4.93	8.70	11.88	23.28	45.67
Sub-Total	5.40	6.13	10.20	13.88	25.28	50.67
7. Retailers margins	0.50	10.77	14.95	17.81	34.93	68.50
8. Consumers price	54.63	66.18	111.86	150.47	293.10	576.37

* In Delhi market *Mashkhors* are sub-wholesalers and are very common middlemen.

Source: Various Report of Agro-Economic Research Centre, Himachal Pradesh University, Shimla-5

Changes in Producer's Share in Consumer's rupee

The producer's share in the consumer's rupee increased from 43.13 per cent in 1975-76 and 41.68 per cent in 1979-80 to 53.8 percent in 2001-02. This indicates that the producer share fluctuated in a narrow range during the last two and half decades.

Market Regulation vis-à-vis Producer's Share

The regulation of markets and marketing practices has been accepted as one of the most important measures for improvement of agricultural marketing in India. The Agricultural Produce Market Regulation Acts have been enacted and implemented by almost all the states and Union Territories. Under the regulation, rates of various charges and also the party (seller or buyers) who is to pay each particular charge are prescribed. It was reported (Swarup and Singh, 1987) that as far as commission and market fee are concerned the provisions of the law are invariably honoured in their breach rather than in observance. The prescribed rates were observed to be at least double in practice because instead of their being collected from one party (i.e. buyer), these are collected from buyer as well as from seller. The commission was also reported to be charged at a rate higher than prescribed in Fruit and Vegetable Market, Azadpur, Delhi. In this context, it was reported that though Delhi market is officially regulated but intermediaries charge still the commission from growers (sellers) at the rate of 6 to 8 per cent of the wholesale price of apples higher than prescribed rates, it should be charged from the buyers only. The commission of commission agent paid by the growers was about 5 per cent in 1975-76 and about 6 per cent of consumer price in 2001-02. Hence, it is clear that if the Market Regulation Act is properly enforced the apple producers would be benefit by increasing their income. On an average, Himachal apple growers were paid about Rs. 49 crores as commission to commission agent on the total quantity of apples traded at Delhi market during 2001-02 season (Table-3.26).

Table-3.26: Marketing Expenses incurred by Growers in Marketing of Apple at Delhi Market during 2001-02.

Costs Items	Per box (Rs.)	Per tonnes (Rs.)	Total in Delhi market (Rs in crore)
Picking, grading, packing charges	11.34	629.93	16.12
Packing material	43.35	2408.09	61.61
Carriage up to forwarding point	2.77	153.87	3.94
Transportation cost up to market	20.00	1111. 00	28.24
Commission of Forwarding Agent	2.00	111.00	2.84
State tax, Octroi	2.50	138.87	3.55
Loading unloading	2.78	154.43	3.95
Commission of Commission Agent	34.31	1905.09	48.76
Total expenses born by growers	119.05	6612. 28	169.01
Value of Apple Traded at Delhi Market	428.90	23825. 39	609.55

Source: Agro-Economic Research Centre, H.P. University, Shimla

Market Intervention Scheme

Main objectives of the sound price policy for various agricultural commodities are: (i) to ensure a fair deal for the producers of crops; (ii) to minimize year to year fluctuations in prices of agricultural commodities; (iii) to provide incentives to the farmers to increase production; (iv) to ensure that the relative prices of various crops are so fixed as to affect the cropping pattern in the desired direction; and (v) to make sure that adequate quality of agriculture products are available to consumers at reasonable prices.

Agricultural policies are attempts to achieve broadly held social goals through the instruments and powers of government. Because the state of the rural economy is considered, so important, some form of government involvement in agricultural markets is common. Price support programmes, input subsidies and government surplus-purchase programmes not only affect farm production, incomes and prices, they also influence all other factors in agricultural sector.

Agricultural prices perform three important functions, viz. (a) to allocate resources (b) to distribute income, and (c) to induce capital formation. Scientific and technological revolution in agriculture resulted in greatly expanded production capacity. These

increased supplies pressed against an elastic demand for them result in downward pressure on their prices which, combined with persistently rising farm input costs, intensified the cost-price sequence in various crops in the country. The Government tries to solve the problem by helping farmers to level out peaks and troughs of their marketing and thereby stabilize the prices of agricultural products. The programmes are intended to stabilize farm prices and incomes or at least prevent them from falling. Continuity of the steady market is also an important incentive factor to the farmers. Attractive prices for a crop in one year do not constitute a sound basis for expanding its output, if in the following year there will be great difficulty in selling it. Several such disappointments could result in a return to subsistence agriculture with its limited risks.

In Himachal Pradesh the HPMC and the Directorate of Horticulture, have taken-up the responsibility for moderating year-to-year fluctuations in the fruits prices obtained by farmers, in addition to assuring them marketing.

The support price scheme has been in operation in various states of the country since, 1965. It covers 21 agricultural commodities inclusive of cereals, pulses, oilseeds, cotton, jute and tobacco. But in Himachal Pradesh, the price support scheme was first announced for potatoes in 1972. The rates were Rs. 60 for Kufri Chandramukhi and Rs.65 for Kufri Joyoti for 80 kg bag. The same rates were offered during 1975-76. The price support scheme for potato was not a regular phenomenon as it has been implemented, from time to time, on an adhoc basis. Currently, a support price of Rs.1.50 per kg has been offered for table potatoes.

The support price scheme in Himachal Pradesh was later extended to the procurement of apples in 1981, when the government announced to purchase scabbed apples at the rate Rs.0.50 per kg. In 1986 the cost of production for apples was estimated as Rs.1.16 per kg and the support price was declared as Rs.1.30 in

general and Rs.1.50 per kg for small orchardists. During 1987, these respective prices were Rs.1.50 and Rs.2.00 per kg. During 1988-89 the production cost was estimated as Rs.1.40 per kg but a remunerative support price of Rs.2.25 per kg (for all grades of apples combined) was announced. The apple price was increased from 2.25 to Rs.2.75 per kg during 1989-90. During that year 1.1 lakh tones of apples were procured.

The policy was changed in 1990-91, when only processing grade quality apples were procured. The quantity procured was 4621 tonnes. For next three years, i.e. 1991-92 to 1993-94, neither a support price scheme nor a market intervention scheme was in operation. However, in 1994-95 the scheme was reintroduced and a support price of Rs.2.0 per kg for processing grade quality apple was announced. In 2001-02 and 2002-03, the support price for apple was Rs.4.0 per kg (for details please see Table 3.27). Since first February 1988, the state government has set up a Price Stabilization-cum-Price Intervention Fund Under the control of Himachal Pradesh State Price Board.

Apples account for 90 per cent of total fruits production in the State, but its production is concentrated only in the high hill temperate regions of the state (i.e. Shimla, Kullu, Kinnaur districts). The citrus fruits, (i.e. Kinnow, Oranges, Malta and Galgal) are produced in the low hill tropical zone (i.e. Kangra and Sirmour districts). To give the price support policy a broad base, support price for these tropical fruits has also been implemented on an adhoc basis (See Table-3.27).

Government intervention in prices, incomes and markets is always controversial. There is debate about whether their benefits justify the costs of these programmes. Ideally government cost of direct farm payments depends upon the level of the support price relative to the free market-clearing price and upon the elasticity of the supply and demand curves.

Table-3.27: Support price and quantity of various fruits procured by the Himachal Pradesh Government during 1986-87 to 2002-03.

(Price Rs/kg, quantity procured in tonnes)

Year	Apple		Kinnow/Malta/ Oranges		Galgal		Mango	
	Support price	Quantity procured	Support price	Quantity procured	Support price	Quantity procured	Support price	Quantity procured
1986-87	1.30	25226	2.20	92.00	1.00	1310.00	-	-
1987-88	2.00	21452	2.20	75.54	1.00	22.82	-	-
1988-89	2.25	18083	3.15	91.80	1.10	8.16	-	-
1989-90	2.75	110896	3.65	1295.00	1.20	1585.00	-	-
1990-91	1.30	4621	2.50 & 3.00	527.81	-	-	-	-
1991-92	-	-	-	-	-	-	-	-
1992-93	-	-	-	-	-	-	-	-
1993-94	-	-	2.50 & 3.50	30.60	1.20	0.18	-	-
1994-95	2.00	1310	2.75 & 3.75	47.37	1.60	47.30	-	-
1995-96	3.00	15247	3.00 & 4.00	418.55	2.00	239.40	-	-
1996-97	3.00	14059	3.00 & 3.60	461.23	2.00	872.19	-	-
1997-98	3.50	17127	3.50 & 4.10	1740.55	2.35	-	3.08 & 3.75	0.816
1998-99	3.75	78715	3.75 & 4.35	1574.50	2.60	-	3.08 & 3.75	Nil
1999-00	3.75	1442	3.75 & 4.35	273.86	2.60	-	3.08 & 3.75	1.806
2000-01	3.75	52890	3.75 & 4.35	131.10	2.60	-	3.08 & 3.75	Nil
2001-02	3.75	8266	3.75 & 4.35	297.364	2.60	-	3.33 & 4.00	Nil
2002-03	4.00	28921	4.00 & 4.60	20.94	2.85	-	3.33 & 4.00	Nil
2003-04	4.00	37338	-	-	-	-	-	-

Source: Directorate of Horticulture, Himachal Pradesh, Shimla.

Summing Up

The analysis of marketed surplus of farm products shows that quantity sold by each household is quite small. A small producer does not have much in bargaining power at the market place. Hence, their returns as well as their market share in the final consumer's rupee is quite low and the marketing cost high. On an average, production of apple per farm was 267.71 boxes annually. Out of this production, 97 per cent was the marketed surplus. The culled apples were estimated to be about 9 per cent of total production. After picking and grading, good quality apples are packed in boxes. All farmers reported to be using c.f.b. boxes for packing. Pack animal, ropeways and human labourer were utilized for local transportation. Ropeways were reported to be economic and safe mode of local transportation. Trucks were used for transporting fruits from road head to markets. Delhi is the main market where about 80% marketed surplus of apple was old, followed by Chandigarh (10% of marketed surplus was sold). The state has 2 large processing plants for apple established by hpmc and 5 small processing units of State Horticulture Department. The total capacity of these plants is 61 thousand tonnes fruits annually. The apples were sent to markets through forwarding agents who charged commission for the service. The producers' share in consumers rupees was 52.40 per cent in Delhi market and 53.83 per cent in Chandigarh market.

The study reveals that during 1975-79, the net price received by the apple growers decreased whereas during 1979-84 it has shown an increasing trend. Further, decreasing trend was also observed in 1989-95. However, net price received by growers were relatively higher in 2001-02 than the other periods under study. Analysis of data over a period of time revealed that the share of growers is generally higher in years of high prices, and lower in years of low prices. Further, it may be concluded that the rise or fall in the producer's share is more than proportional to the rate of rise or fall in price level. This is so only because several costs remain constant, i.e., do not change with prices. The empirical evidence showed that the benefits of rise in prices are not fully availed of by the growers and their gains have been intercepted by the middlemen, reflecting the inefficiency of the marketing

mechanism, Delhi market is a regulated market but in real sense there is no regulation act enforced in true sense. The apple growers are being charged commission, which is against the law. About 5-7 percent of the producer's share is reduced by this malpractice. Himachal apple growers were paid about Rs. 49 crores as commission to commission agent on the total quantity of apples traded at Delhi market during 2001-02 season

The price support scheme was fruit announced for potato in 1972 and was later extended to the procurement of apples in 1981 to purchased scabbed apples. In 1987 support price for general and small orchardists were declared separately. The policy was changed in 1990-91, when only processing grade quality apples was procured. Since Feb. 1988, the State Government has set-up a price stabilization-cum-price Intervention Fund under the control of H.P. State Price Board. Government intervention in prices, incomes and markets is always controversial. There is debate about whether their benefits justify the costs of these programmes. Ideally government cost of direct farm payments depends upon the level of the support price relative to the free market clearing price and upon the elasticity of the supply and demand curves

In the present marketing system, the affluent apple producers reap most of the benefits. It is suggested that an attempt should be made to strengthen the marketing system by organizing apple growers' cooperative society particularly small growers. Suitable policy measures, e.g.; establishing more sophisticated apple grading and packing houses equipped with modern facilities like chemical washing of fruits and waxing etc. Promotional efforts should be made for expanding markets, availability of timely and better transportation facilities, strict enforcement of market regulation will go a long way in improving marketing efficiency for Himachal apples.

Chapter-4

ROLE OF GOVERNMENT AND NON-GOVERNMENT AGENCIES IN MARKETING OF AGRICULTURAL PRODUCTS

Introduction

Social economic and administrative infrastructure acquires a very important role in a developing economy as it performs the task of development of human resource through education, skill generation, training, awareness creation etc. which enhance the efficiency of production and marketing mechanism. It has been increasingly recognized that the growth of physical capital depends considerably on human capital formation. Capital and natural resources are passive factors of production whereas human beings are the active agents who accumulate capital, exploit natural resources, build social, economic and political organizations, and carry forward national development. Hence, training and education of farmers, traders and others associated with marketing regarding modern agricultural marketing practices is very essential.

Administrative infrastructure and institutions providing marketing, warehousing and extension facilities, are important determinant of economic development. Such institutions help in accelerating the pace of agricultural production and marketing activities.

Economic, social and financial institutions are directly linked with the process of economic development, but administrative infrastructure, such as institutions maintaining law and order, and regulation of markets, institutions implementing the government's programmes and policies, is indirectly linked thus is equally important for economic development. Inefficient administrative infrastructure is responsible for

retrogressing the process of economic development in many states. On the other hand, effective administrative infrastructure reduces corruption, maintains social values, and creates conducive environment for economic activities, such as agricultural production and marketing.

Yet another institutional infrastructure, which has an important role in the economic development, is institutions providing marketing and extension facilities. This type of facilities in a developing economy like India is generally extended by the public sector organizations and cooperative institutions. These institutions are not only extending services like marketing and warehousing in rural (agriculture- based) economies but also extending services for raising agricultural production, transfer of technical know how, distribution of necessary farm inputs, and allocation of credit. In this chapter we will provide a brief overview of some of the institutional agencies assisting the farmers in marketing agricultural products.

Various institution - Government departments, Public sector undertakings and Cooperatives - are assisting farmers in marketing of farm products and in developing marketing infrastructural facilities. This chapter presents a brief overview of such institutions of Himachal Pradesh.

Himachal Pradesh Agricultural Marketing Board

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 is "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 B.K." (i.e. 1948 AD) was extended to the earst while 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 were governed by the Punjab Agricultural Produce Markets Act, 1961. Hence after 1966 two Acts were in vogue 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 Marketing Board is exercising superintendence and control

Table-4.1 : Institutions undertaking marketing activities for agricultural products in Himachal Pradesh.

Name of Institution	Establish-ment year	Marketing activities for agricultural products	Marketing infrastructure created	Other facilities
1. H.P. Agricultural Marketing Board	1970	Enforcement of Market regulation Act, Establish Market Committee, farmers Training for marketing.	Establishing market yards, sub-yards, rural link- roads, rope ways, trucks for transportation.	Publication of marketing related pamphlets, Directory of marketing agents.
2. H. P. State Department of Agriculture	1970	Procurement of Potato under MIS, grading and standardization.	Grading centres.	Supply of seeds, Agri. implements, technical know-how to farmers
3. H.P.State Department of Horticulture	1972	Post harvest training to the farmers for fruit and vegetables, procurement of fruits, Honey under MIS, Processing, storage, packing material.	Processing units, post harvest testing lab.	Supply of saplings of fruits, insecticides, fertilizers implements, technical guidance, price information.
4. H.P. State Department of Animal Husbandry	1972	Processing of milk, grading of wool	Milk chilling plants.	Veterinary treatment, Artificial insemination, cattle feed, fodder seed.
5. H.P. Agro-Industries Corporation	1972	Processing of Agriculture products, manufacturing of packing materials.	Processing plants, packing box factory.	Supply of implements
6. H.P. Horticultural produce marketing and processing corporations (HPMC).	1974	Grading, packing, storage, processing, transportation, sale and purchase of fruit, supply of packing materials, market intelligence, forwarding & export of fruits, credit.	Grading and packing houses, cold storages, processing plants, cable ways, transhipment centres.	Supply of pesticides, fertilisers.
7. The H. P. State Cooperative Marketing and consumer federation(HIMFED).	1952	Supply packing materials, Marketing of fruit and vegetables.	Godowns, bottling plant, distribution and sale centres.	Supply of fertilisers, pesticides, seeds, consumer good under PDS.

8. Lahaul Potato Growers Coop. Society, Manali	1960	Marketing of seed potato, credit, transportation, storage, grading, packing.	Market yard, trucks, for transportation storage.	Supply of seed, fertilizer, pesticides and consumer goods.
9. The Govind Sagar Fish Cooperative Marketing and Distribution Federation Limited, Bilaspur.	1976	Marketing and distribution of Fish, cold storage and transportation.	Cold storage, trucks for transportation to distant markets, sale-depots.	-
10.H. P. State Wool Procurement and Marketing Federation Shimla.	1988	Procurement and marketing of wool, shearing of wool, Training for weaving, grading, ginning and spinning of wool.	Machine for shearing sheep, sale, facilities.	Sheep development programme, angora development, veterinary emporium for woollen goods.
11.H.P. State Cooperative Milk Producers Federation Limited, (Milk Fed).	1980	Collection of milk, processing and marketing of milk and milk products.	Collection centres, chilling plants, processing plants, transportation.	Supply of cattle feed fodder seed.
12.Food Corporation of India +++(FCI)	1978	Procurement of wheat, maize, paddy, storage and distribution of food items.	Processing centre storage, godowns	-
13. Mother Dairy.	1996	Purchase fruit and vegetables from farmers and sale at Delhi through its outlets.	Transportation, distribution outlet	-

over the Market Committees, the organizations which are responsible for successful implementation 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 State Government of Himachal Pradesh from amongst the Joint Directors of Agriculture, Department of Agriculture of the State Government. 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 given 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 relation 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 thereunder 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 is comprising one Notified Market area except Kinnaur and Lahaul-Spiti districts which are

amalgamated with Shimla and Kullu districts respectively. The Rajgarh tehsil of Sirmour district has also been amalgamated with Solan district.

There is a provision under section 10 (1) that a Market Committee should have either 9 or 16 members out of which 5 members 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 a strength of 16 members in each Market Committee to give wider representation to the maximum area of a Notified market area.

The Board/Committees have taken up following developmental activities in their Notified Market areas :

- Construction of small rural link-roads.
- Installation of rope-ways which are operating through gravitational force.
- Construction/improvement of Market-Yards in the Notified Market area.
- Organization of Farmers training camps in post-harvest management of farm produce.
- Export promotional activities.

Himachal Pradesh Horticultural Produce Marketing and Processing Corporation (HPMC)

The main thrust of Himachal Pradesh Horticultural Produce Marketing and Processing Corporation Limited (hpmc) is to get better prices and efficient services to fruit growers and to provide quality fruit at reasonable rates to consumers as their interests are not being taken care of by the marketing middlemen. This organisation was incorporated under the Companies, Act as a subsidiary of the H.P. Agro-Industries Corporation Ltd., for the execution of the World Bank Project. The World Bank has sanctioned an amount of about rupees sixteen crores for this project covering all aspects of apple marketing right from picking till it reaches the consumer. The major objectives of the project are: (i) to extend marketing period; (ii) to expand marketing in new cities and diversification of

new trade; (iii) to improve marketing efficiency; (iv) to reduce marketing costs in all respects including transport, intermediary margins, etc.; (v) to utilise large quantities of culled fruits ; (vi) to improve fruit quality and it public usage by introducing quality control, higher grading standards, etc.; and (vii) to establish competent and efficient marketing organisation engaged in trading of fruits and its products by creating an alternative to the existing unsatisfactory wholesale channel of commission agents with their malpractices.

This organisation has established 'Packing and Grading Houses' in the fruit producing areas. The packing houses render grading and packing services; sale of fruit on consignment basis throughout the country; outright purchase of apples, stone fruits, citrus, etc.; collection and forwarding; and transport and transhipment to all places in the country. Furthermore, services like supply of packing material, supply of pesticides and fertilizers, extension and advisory service, cold storage facilities, market intelligence and export of apples and other products are also rendered by the hpmc.

Lahaul Potato Growers Cooperative Society

As the name indicates, this Society is made up potato growers' members from the Lahaul-Spiti district. This Society came into existence on 28.5.1960. In the beginning this society tried to dispose off seed potatoes of its members in nearby markets. During 1967-68 due to slump in potato market and exploitation by potato traders at market centres, growers were extremely disappointed and sought the help and guidance of Agriculture Department for establishing Lahaul Seed Potato market at Manali. The Department gave full encouragement in this direction and this also established their faith and confidence in the Department from where the seed was obtained. The marketing of seed potato was also done with the help of Department to reputed traders in different States in small quantities and at prices that were even lower to those of seed potato sold from Shimla area. Sincere efforts helped in establishing full confidence among the buyers of other states and thus preference of the buyers was diverted to Manali potato market.

The Lahaul Potato Growers Cooperative Society has adopted a unique method of marketing potatoes, which is in contrast with the working of other cooperatives Institutions transacting such business elsewhere. The potatoes after harvesting are brought by member growers to Manali where all operations like grading, packing, stacking, sealing , etc. are undertaken in the presence of all growers and buyers, under the supervision of trained grading officials of the State Government as well as of government of India. All operations are performed at one place only. Thus, customers get full satisfaction regarding purity, size, grade, weight, packing material used, etc. Another factor which differentiates the working of the Lahaul Society from other cooperatives is in regard to sale of the produce and payment to grower members. All prices are pooled and growers get the average pooled price after the accounts of the Society are finalized at the end of each financial year. The Society also supplies required inputs for crop production and consumable to its member at reasonable prices. There are 1789 members of the Society. It sold 1,36,000 quintals of potato seed during 1995-96. The total business of the Society during 1990-95 was Rs. 945.6 lakhs.

The Himachal Pradesh State Cooperative Marketing and Consumer Federation Limited (HIMFED)

This federation was registered on 20th June,1952 under the provision of Indian Cooperative societies Act, 1912 and now covered under the provisions of Himachal Pradesh Cooperative Societies Act, 1968. The main activities of the federation are: (i) procurement and distribution of fertilizers, seeds, and pesticides/insecticides in the state; (ii) supply of packing material to fruit and vegetable growers; (iii) marketing of fruit and vegetables to outside markets; (iv) supply of consumer goods through Public Distribution System shops; and (v) retail sale of Indian Oil products (LPG), typewriters, furniture, etc. During 1997, federation sold 80,700 quintals fertilizers in the state. Packing material worth Rs 201 Lakh was supplied to growers by the Federation in 1997. It also has an office in Delhi which marketed 7100 m.t. apple and 593 m.t. citrus fruit and vegetables, in 1997. Himfed has constructed 81 godown with a block cost of Rs.578.68 lakh having capacity of 44,500 tonnes for the storage of fertilizers etc. A bottling plant for liquor has been established at Parwanu (Solan).

H.P. State Wool Procurement And Marketing Federation Ltd. (Woolfed)

In order to mitigate the suffering of sheep breeders, the Government of Himachal Pradesh established the Wool Federation on 7th November, 1988. This Federation is registered under Cooperative Societies Act, 1968, H.P. The main objectives of the federation are to save the wool producers from the exploitation of middlemen or wool traders. The federation has set-up procurement and grading charters for procurement of wool and provides remunerative prices for wool. After the inception initially the Federation procured only Angora wool in the State but since 1993-94 sheep wool is also being procured. In 1996-97 the Federation procured 929 quintals sheep wool and 30 quintals Angora wool in the state. Under the Integrated Angora Development Project, the beneficiaries are being imparted training in Angora rearing and also provided Angora units including cages, and medicines and feed free of cost for one year. Like-wise, under the Integrated Sheep Development Project, the sheep flock owners are provided sheep shearing facilities including medicines and other health coverage free of cost for 25,000 sheep in Kangra district. In other areas sheep breeders are being provided sheep shearing facilities on nominal charges, and medicine/health coverage on 50 per cent cost. It provides required technical know-how/guidance to shepherds. The traditional weavers are being trained with latest techniques and trends in weaving. Five shawl and muffler training centres have been established where 75 trainees are imparted training for a period of six months. The Federation has established two emporiums to safeguard the interests of local artisans for better marketing of their products.

The Govind Sagar Fish Cooperative Marketing and Distribution Federation Limited (Fishfed)

This Fishfed was established at Bilaspur on 5th March 1976. Presently 122 fish cooperative societies are the member of the Federation. The main objectives of the Federation are to provide better marketing for fish collected by fishermen from the Govind Sagar reservoir and to save them from the clutches of contractors/traders in the

business. Fish are also provided to the consumers on cheaper rates in the state by the Federation through its sale depots/shops.

The Federation has established 8 sale depots situated at Bilaspur, Bhakhra, Mehatpur, Mandli, Lathawni, Una, Hamirpur and Solan. The Federation has cold/ice factory at Mehatpur and refrigeration van for transportation of fish to distant markets. The cold storage was established at Mehatpur in 1982 which has capacity of 50 metric tonnes. The Federation has its office and a godown at Bilaspur. The Federation has 5 trucks for transportation of fish for marketing. During 1994, the federation earned a profit of Rs 1,93,890 through the marketing of fish. But after 1994 the business is in loss and the deficit has increased to Rs 23,29,540 up till 1997. The main reasons for the loss were (i) Increase in the procurement price of fish, (ii) equal prices paid to all fishermen societies, (iii) reduction in the demand/sale of fish in markets, (iv) low catch rate, and (v) changes in the marketing policy. In 1996-97, Federation marketed 1,183 quintals fish to different markets. In summer season, the Federation receives 40 to 250 quintals fish every day while consumption/ demand in the state is only 8 to 12 quintals per day. The remaining fish are sent to outside markets. On the other hand, in winter entire quantity of fish received by the Federation is consumed within the state, and a small quantity is marketed in outside markets.

H.P. State Cooperative Milk Producers' Federation Limited (Milkfed)

The Milkfed was established in January 1980 for implementation of the Operations Flood-II Project in the state on `Anand Pattern'. Government of Himachal Pradesh, transferred Milk Supply Schemes functioning in six districts under the Animal Husbandry Department to the Milkfed with effect from 2nd October, 1983. The Milk Union Una was transferred with effect from 6.1.1988 and the Milk Supply Scheme functioning in the remaining areas of the state under Animal Husbandry Department were also handed over to the Milkfed with effect from 1.7.1992. The Milkfed is now operating in entire state. The Operation Flood-II ended in October 1987 and the Milkfed is now implementing and covered under Operation Flood-III. Objectives of the Milkfed are : (i) To identify surplus milk areas for collection; (ii) to organise village level Primary Milk

Producers' Cooperative Societies, and supervise these societies; (iii) to educate farmers in modern animal husbandry practices; (iv) to train Management Committee members of the Milk Societies; (v) to educate milk producers about the "Anand Pattern" dairy cooperatives; (vi) to popularise balanced cattle-feed; (vii) to supply fodder seeds; (viii) to coordinate with Animal Husbandry Department for artificial insemination and animal health; (ix) to coordinate in obtaining loan for purchase of animals, milk collection booth, biogas plants, improvement of pastures, etc. with the concerned departments; (x) to organise efficient collection, transportation, chilling and processing of milk; (xi) to purchase/sale milk, SMP and other commodities from the neighbouring states; (xii) to purchase surplus milk from villages at remunerative prices and supply it at reasonable price to urban consumers; and (xiv) to implement programmes of state government for upliftment of rural economy through dairy development. The Federation has established 3 dairy plants and 24 chilly plants in the state. During 1995-96 Federation has 420 village dairy cooperatives through which 18,904 farmer members were selling their milk. The Federation handled 84 lakh litres milk in 1995-96. The federation has been incurring losses year to year due to various reasons. The accumulated loss up to 1995-96 was Rs 813.35 lakh.

The Food Corporation of India (FCI)

Himachal Pradesh is marginally deficit in food grains-production. FCI started its function to supply foodgrains in the state for public distribution w.e.f. 1978. The initial allotment of wheat and rice to the state was 3000 m.t. which has now increased to 11000 m.t. of wheat and 7500 m.t. of rice per month. The FCI has established its depots in various parts of the state. Although there had been no remarkable procurement of foodgrains in the state, still FCI operates some procurement centres in the state. In 1990-91, FCI procured 1,065 m.t. of wheat from 9 procurement centres in low hill areas of the state. The Corporation procured 1134 m.t. of wheat in 1993-94. In 1994-95 at Poanta-Sahib procurement centre 49 m.t. wheat was procured while in rest of the centres FCI could not purchase wheat because the support price was lower than the prevailing market price. FCI is issuing wheat and rice stock to H.P. Government under PDS which is distributed to the consumers through 3,452 fair price shops opened in the state.

Mother Dairy

Mother Dairy is an organisation of the National Dairy Development Board. The main function of the Mother Dairy is to supply milk in the larger Cities. This organisation also supplies fruits and vegetables through its depots in various locations in Delhi. The Mother Dairy purchases off-season vegetables, fruits and potatoes from Solan, Sirmour, Shimla and Kullu areas of H.P. The purchases are made directly from the farmer. After proper grading, the produce is transported to Delhi where it is sold to the consumers.

State Department of Agriculture

The Department of Agriculture plans and execute various programmes of agricultural development in the state. The technical know how is provided to farmers through its subject matter specialists and a network of extension workers. The department provides inputs like seed, fertilisers, plant protection materials, agricultural implements, storage bins etc. for crop production to the farmers. Besides this, sport price of potato is also provided by the Department under its market intervention scheme (MIS). Seed certification is also done by it for potato crop.

State Department of Horticulture

Initially this Department was a section of the Agricultural Department but in 1970 recognising the importance of fruit production in the state a separate Department of Horticulture was created by the government of Himachal Pradesh. It plans and implements various programmes and schemes for the development of Horticultural crops in the state. Its main activities are to provide inputs like saplings, seed, fertilisers, insecticides/pesticides, and implements to the orchardists in the state. It also arranges to supply packing material for fruit marketing, training in post harvest management of fruit. It has also established processing plants for fruit and vegetables. Under market intervention scheme support prices for various fruits, such as apples, kinnow, galgal, sangtra, honey, hops etc. are also provided by the Department.

State Department of Animal Husbandry

The Animal Husbandry Department is responsible for improving breeding, feeding and health of livestock in the state. Veterinary facilities, artificial insemination in livestock, cross-breeding and technical guidance in livestock rearing, and other programmes improving livestock productivity are the main activities carried out by the Department. Milk, wool and poultry development programmes are designed and implemented by the Department in the state.

H. P. Agro-Industries Corporation

The Agro-Industries Corporation supplies and manufactures farm implements, fruit and vegetables packing materials and under takes processing of farm products which are vary much helpful in the production and marketing activities of agriculturists in the state.

Summing up

In the underdeveloped regions like Himachal Pradesh, government initiative in mobilising the capital, administrative personnel and technical knowledge needed for progress in agricultural sector, is almost essential. It is also left to the government to take initiative in establishing extension, training, research and inspection services for marketing. Circumstances may also make it necessary for them to take a lead in stabilizing supplies and prices of farm products, developing special and programmes for needy groups and developing a potentially important marketing channel for a special product. the pace of improvement in various institutions established in Himachal Pradesh for assisting in marketing of agricultural products reflects to a considerable extent the degree of responsibility accepted by the government. Many of the areas calling for direct government action - improvement of transport, storage and information services, channelling of investment funds toward marketing improvement projects - have already been indicated in the brief overview of various institutions provided in this chapter. Further, information on their major marketing activities has been presented in the succeeding chapters.

Chapter-5

MARKET INFRASTRUCTURE AND DEFICIENCIES IN FACTORS IMPACTING MARKET EFFICIENCY

The physical functions of marketing are those activities that involve handling, movement and physical change of the actual commodity itself i.e. transportation, storage and processing. Producers and consumers of farm products are not located at one place as they are spread over the region. Time wise also the production and consumption of agricultural products do not coincide. Farm products produced seasonal but consumed throughout the year. This chapter deals with creation of market infrastructure such as roads, market yards, storage and processing for marketing of farm products.

Roads Facility

Construction of road network in Himachal Pradesh has taken a big leap forward. The road length in 1971 was 10,378 kilometres, which by the year 2002 has increased to more than two and half times (i.e. 27,503 kms). Widening of roads and constructing of new roads has been main thrust. The more spectacular growth has been in the number of vehicles in the state. These were 821 registered vehicles in 1971 while their number increased to 8,884 by 2001 (Table-5.1). The number of buses, trucks, and tempo/jeeps/car has increased and thereby has increased the transport and communication facilities and fast movement of goods and passengers and ultimately strengthening the marketing system in the state (see Table-5.2).

Table-5.1: Road Length in Himachal Pradesh.

(Kilometres)

Type of Road	1971	2002
Motorable double lane	1,526	2,336
Motorable single lane	5,844	20,427
Jeapable	608	781
Less than Jeapable	2,400	3,959
Total	10,378	27,503

Source: Statistical Outline of Himachal Pradesh, 2001-02.

Table-5.2: Number of Registered Vehicles in Himachal Pradesh.

Type of Vehicle	1971	2000-01
Buses	509	477
Trucks	258	2,557
Jeep/Cars/Tempo/vans	54	5,850
Total	821	8,884

Source: Statistical Outline of Himachal Pradesh.

Storage Facilities

The Himachal Pradesh Horticulture Produce Marketing and Processing Corporation Ltd (HPMC) has established five cold stores in the state. The total capacity of all five cold storages in various producing areas is 5,000 tones. The capacity utilization of these cold storages was 48,000 boxes during 2003-04. The capacity was low 17.45 percent in 2003-2004. Farmers are not using storage facilities fully created in apple producing areas. In the consuming areas, traders are in control of limited storage available and are said to have profited unduly from speculative operations.

Keeping in view the storage capacity created in Himachal Pradesh and its meagre utilization, a number of issues arise regarding the agricultural product storage function. How large should the stored stocks be ? Who should own these stocks ? How should farm produce stored be managed and financed ? How can storage costs be reduced ? What level of stocks is necessary for efficient operation of storage plant ? Should storage capacity be increased ?

Processing Facilities

The HPMC has established two processing plants in Himachal Pradesh: one at Jarol and another at Parwanoo. The quantity of fruits procured by these processing plants of HPMC was 6,063 matric tones during 2003-04. Besides, 9 small fruit processing units have been established by the state Department of Horticulture at various places in Himachal Pradesh which have a total capacity of 6.5 tones. The capacity utilization rate of these units was 19.40 percent in 2003-04.

Keeping in view the past experience of Himachal Pradesh in fruit and vegetables processing, a word of warning is needed on the food processing projects. Processing plants should not, for the sake of engineering consideration, be constructed on a scale for which local supplies of raw material do not provide an economic turnover, unless there is a real likelihood that the existence of the plant would stimulate more production. In any case the efforts should be made to run the plant at optimum capacity.

Mechanised Grading Houses

The Himachal Pradesh Government has installed 5 mechanised grading and packing houses in fruit producing areas of the state in the early 1980's. The popularity of mechanised use of grading and packing has been continuously increasing. The main complaint of farmers is that because of long queue, waiting time is more and the produce of one farmer gets mixed up with others at the grading houses. Problem of pilferage was also not uncommon at the premises of grading houses. It was also reported that due to very bad conditions of roads, which further worsens during apple harvesting time coincides with monsoon season, the unpacked apple lots on their way to the mechanical grading houses get rubbed against each other and thus are damaged.

Market Yards Facility

To begin with market yards have set up in the main market towns and sub yards in smaller towns. For each principal yard a Market Committee was set up to look after

the functioning of various market yards falling within the jurisdiction of the concerned Committee. There are ten Market Committees are established in Himachal Pradesh. On the whole up to March 2003, Rs 26.20 crores have been spent on construction of market yards. During the last 31 years 45 market yards have been constructed and 7 are under construction in Himachal Pradesh. Construction of new market yards at appropriate places has improved the smooth operation of exchange function (buying and selling) of markets in Himachal Pradesh.

The sample farmers were interviewed to enquire about post harvest problems faced by them in marketing their produce. Their responses are classified according to the crop groups. The detail analysis of various problems faced in different markets of Himachal Pradesh is given below:.

Problems of Fruit and Vegetable Growers

The problems faced by the farmers growing fruit and vegetables are mainly related to transportation of produce from producing areas to the Market-yard. Lack of link-roads in the villages was reported by 32 per cent farmers (Table-5.3). The problem of road blockade during rainy season, which coincides, with marketing season of the crops was stated by 21 per cent of sample farmers. The severity of this problem was relatively more in the high hill areas(such as Shimla market committee area) as compared to the low hill areas (Solan and Poanta-Sahib areas). Furthermore even where roads/link-roads were available in the villages the lack of adequate number of transport vehicles in the producing areas was reported by 61 percent farmers. The problem of high transportation charges was stated by 59 per cent of farmers. The damage of produce, especially fruits and vegetable, during transportation was also reported by the farmers because of lack of proper containers and overloading of trucks by transporters.

The farmers of Bilaspur, Mandi, Solan and Poanta-Sahib Market Committee areas reported that they have no Market-yard facilities in their areas. However, the good news is that during the period of survey it was observed that Market-Yards in

Bilaspur and Namohal area were under construction. In Mandi (Tikoli) and Poanta-Sahib (Dadahu) areas the strong fact was that the Market-yard facilities existed but the trade did not shift to the new yards due to non-cooperation of the traders though they have taken the possession of new shops there. The need of covered auction platforms was felt by the growers of Shimla, Solan and Una areas. Open auction platforms exist in Shimla, Solan and Una Market Committee areas, where problems are faced in auctioning the produce during rainy season. Auction platforms were of smaller sizes which were inadequate to accommodate the total farm produce brought daily for sale in the market-yards of Kangra, Kullu, Shimla, Solan and Una areas. Obviously as the agricultural commercialization would further intensify and spread to more villages, the existing marketing facilities will fall short of the requirements and thus there is need to periodically upgrade and expand the marketing infrastructure.

Table-5.3: Percent of Farmers Facing Various Types of Problems in Marketing of Fruits and Vegetables in Various Market Committee areas in Himachal Pradesh.

(Percentages)

Nature of marketing problem	Market Committees								
	Bilaspur	Kangra	Kullu	Mandi	Shimla	Solan	Paonta Sahib	Una	Overall average
1.lack of transportation	45	45	33	44	83	80	79	47	61
2.High Charges Of Transportation	44	41	71	36	77	75	77	26	59
3.Produce Unsafe In Present transportation	-	-	86	52	60	57	26	16	34
4. Lack Of Link Road	-	-	38	-	53	84	44	-	32
5. Road Blockade	-	-	-	-	67	41	35	-	21
6.Lack Of Market Yard	100	-	-	100	-	34	88	-	45
7.No Covered Auction Platform	-	-	-	100	67	30	-	100	28
8.Platform Is Small	-	34	52	-	100	52	-	53	33
9.No Facility Of Night Stay In Market Yard	-	36	-	-	100	30	-	-	22
10.Lack Of Sanitation In Market Yard	-	57	71	-	83	16	-	79	32
11.Lack Of Animal Shad In Market Yard	-	45	-	-	67	64	-	63	29
12.Traders Collusion	59	61	38	80	50	11	61	26	49
13.Malpractice ByTraders	44	73	-	60	57	84	65	79	61
14.Higher Market Charges	38	84	24	44	50	57	67	37	55
15.No Correct Weighting	22	75	-	20	23	34	37	26	34
16.Late Payment	28	52	-	36	37	41	61	47	42
17.Under Cover System Of Sale	-	23	-	-	23	20	37	32	19
18.Lack of Credit Facilities	45	-	24	20	17	20	26	16	21
19.Lack Of Storage In Market Yard	-	100	43	100	83	75	35	100	64
20.Lack Of Price Information	78	95	86	80	67	84	72	74	80
21.Lack Of Packing Material	-	11	-	-	50	66	65	-	32
22.Indifferent	-	-	-	-	-	16	12	-	5
23.No.Problem	-	-	14	-	-	-	-	-	1

Lack of lodging facilities (Kisan Bhawans) for the farmers in the marketing centres was reported by 22 per cent of total sample farmers belonging to Kangra, Shimla and Una areas. Lack of proper sanitation arrangements in market-yards was reported by 32 per cent of farmers in the market-yards falling under Kangra, Kullu, Shimla, Solan and Una Market Committees. Farmers using pack animals for transporting their

produce stressed the need of animal-sheds in the Market-yards. The problem of collusion (secret agreement) between commission agents and the buyers (outside traders) during the auction was also reported by 49 per cent of the total sample farmers. This problem exists in all the markets with varied extent.

Various types of malpractice such as pick-up of fruit after sale, deducting certain amount of quantity extra (*Karda*), etc. were common in almost all markets except in Kullu and Bhunter markets. Since all the markets are regulated therefore, no charges are payable by the seller (farmers) in the markets. But still traders (agents) deducted various charges, such as market fee from the farmers. Problem of higher market charges was reported by 55 per cent of total sample farmers. The problem of cheating in weighing by the traders was reported by about one-third of sample farmers. Undue delay in receiving payment after the sale of their farm produce was reported by 42 per cent of sample farmers. Although under the rules, only open auction system of sale is prescribed, but under-cover system of sale still exists. This practice was reported by 19 per cent of sample farmers. Problem of getting credit to meet the marketing cost was also reported by the farmers. There is need for temporary storage facilities in the market because some times farm produce could not sold on the same day due to low price or lack of adequate number of buyers in the market. Sixty four per cent of sample farmers reported this problem. About 80 per cent of the total sample fruit and vegetable growers felt that there should be some system of information about the prices in other markets. The main source of price information for farmers was through neighbours/fellow farmers or by personal visits. Lack of wooden packing material was reported by 32 per cent of sample farmers. This problem was relatively higher in Solan, Poanta-Sahib and Shimla areas.

Problems of Cereal and Pulse Growers

Some areas of Himachal Pradesh have some surplus amount of cereals and pulses for marketing. Various marketing problems have been reported by farmers growing these crops (see Table-5.4). Non-availability of transportation for these products in the producing areas was the main problem reported by 67 per cent of total sample farmers. Due to small size of marketable surplus many farmers felt it convenient to sell the products to local traders in the villages itself. Traders after collecting the produce transport the pooled amount to the consuming markets. Lack of market-yards in the producing areas was reported by 52 per cent farmers, especially the farmers of Chamba, Hamirpur and Una Market Committee areas. Higher market charges was the problem reported by the farmers of Kangra, Solan and Una area where Market-yards for grains are established by the Board. Malpractices by traders of these markets were reported by 40 per cent of farmers understudy. Problem of incorrect weighing of produce by traders in local markets was stated by 69 per cent sample farmers of Solan area, 56 per cent of Una and 43 Per cent of Kangra area. Delay in payment by traders after purchase of produce from farmers was reported by 23 per cent sample farmers. Low price paid for purchase of cereals by local traders in the village was reported by 93 per cent of sample farmers in Solan, 81 per cent in Una, and 64 per cent in Kangra market committee areas.

Table-5.4: Percent of Farmers Facing Various Types of Problems in Marketing Of Cereal And Pulses In Various Market Committee Areas In Himachal Pradesh.

(Percentages)

Nature of marketing problem	Market Committees					
	Chamba	Hamirpur	Kangra	Solan	Una	Overall average
1.Lack of transportation facilities	-	75	86	92	74	67
2.Lack of proper market yard	53	88	-	-	70	52
3.High market charges in the market	-	-	57	100	78	45
4.Malpractice in the market	-	-	50	85	70	40
5.No correct weighing in the market	-	-	43	69	56	32
6.Delay in payments	-	-	36	46	37	23
7.Low prices in the market	-	-	43	100	93	47
8.Lack of price information	-	-	64	92	81	46

Summing up

The amount of produce, the nature of the products, the physical facilities available and the characteristics of their users determine marketing methods. With the change in these determinants the marketing methods change. The present system of marketing of farm products does not meet fully the requirement of these functions and services. The state has a socio-economic and agro-climatic advantage in producing fruits and vegetables crops. But this potential has not been fully tapped because of various post harvest constraints faced by the farmers. The main problems reported by the farmers include a lack of price information, lack of transportation, malpractices by traders, lack of storage, lack of market yards etc. To harness the income and employment potential of fruits and vegetables in Himachal Pradesh, urgent attention is needed to provide efficient network of roads, market intelligence, strict implementation of market regulation act, and construction of market yards in the producing areas.

Chapter- 6

CONCLUSIONS AND SUGGESTIONS

The development of agricultural marketing infrastructure is a pre-condition for commercialization of rural sector. The public wants a marketing system that provides farm products at the lowest possible cost. From the farmer's viewpoint, a marketing system that can sell more farm products is a good one. The focus of all marketing activities is to satisfy the farmers and the consumers. Marketing activities arise primarily because of form, distance and time variables. These variables require that farm products be processed, transported and stored. Therefore, the job of commercial agricultural marketing system is to get the farm products to the consumer at the proper place, at the proper time, in the proper form, and at acceptable prices.

Marketing functions can be classified into three broad groups: exchange function, physical function, and facilitating function. Exchange or transfer of title (buying and selling) of farm products as it moves in the marketing channel from the farmer to the consumer is vital to the marketing system. Physical functions are those of transportation, processing and storage, which are directly associated with the physical handling of the products. The facilitating functions include standardization, financing, risk bearing, and market information services, which facilitate the smooth performance of the market. They are the grease that makes the wheels in agricultural marketing system perform easily.

There are some peculiarities of agricultural production system in Himachal Pradesh which add up-to some vary important marketing considerations:

(1) That much of the agricultural production is made available to the marketing machinery in relatively small lots from a large number of relatively unspecialized individual farmers.

(2) That the farmer is primarily interested in production and only secondarily interested in marketing. As a marketer, he sells very small amounts a few times a year mostly in the village itself or in a nearby market without giving much thought as to when and where to sell to get better returns.

(3) That changes are taking place. More specialized farms are developing, and in some areas and products, they are developing rapidly. With these changes, the interest of the farmer in his selling arrangements is increasing.

Main causes of inefficiency of agricultural marketing system in Himachal Pradesh:.

(a) Lack of a good transport system, especially the one linking the villages with the markets. The extremely perishable products (fruits, vegetables, flowers, milk etc. deteriorate in quality due to along time taken in their transportation to the market. The cost of transport also increases.

(b) Lack of proper storage facilities at the market place forces farmers to sell their produce even at unfavourable prices without waiting for the next day. The farmer loses most of his bargaining power once he has unloaded the produce in the market. He must sell it now at whatever the price is being offered by the buyer. This affects the pricing efficiency of the agricultural markets.

(c) Malpractices in buying and selling affect the distributive justice and efficiency of the agricultural marketing system. Main functionary in the markets, the commission agent, is generally in league with the buyers from outside markets who are his regular clients rather than the individual farmer. A defective method of selling the produce, called 'cover system' is often followed in order to tilt the deal in favour of the buyer. Many unauthorized deductions are made from the farmers even unregulated markets. Malpractices become more frequent when the farmers have low economic status, poor education and weak bargaining power. Various malpractices in agricultural markets are common.

(d) The borrowing for the majority of the farmers is rather necessary. The farmers through borrowing bridge the gap in cash needs between the sowing and harvesting of a crop. The share of institutions like commercial banks and

cooperatives in the overall rural finance is still quite small. Marketing intermediaries (agents) combine money leading with trading. They advance loans to the farmers at the sowing time and recover the amount of loan advanced at the harvesting time by forcing farmers to sell their produce through their firms. Thus the farmers, especially the small ones, are in their socio-economic grip. Availability of marketing finance is a severe constraint for the farmers in realization of better priers. Much of the produce of farmers is already pledged with marketing middlemen from whom they have raised credit for tiding over the family needs as will as those of land. Naturally they do not have much choice to wait for better prices during post-harvest period and soon are visited by their creditors. Since crop loans are repayable at the end of crop season, farmers have to sell the produce immediately after harvest to repay crop loans. One solution is to extend the crop loans for a further period of three months.

(e) Forward sales at an unfavourable place and at an unfavourable time, and at very unfavourable terms due to pressing money needs of farmers or due to mortgage of crops to the pre-harvest contractor are quite widespread.

(f) Multiplicity of changes on producer in the process of selling his produce and a long chain of middlemen in the marketing, and hence the cost of marketing is high.

(g) Non-availability of sufficient market information also affects operational efficiency of the agricultural markets. Farmers don not have the latest information about the market prices of various crops, changes in the demand, and prospective prices of crops, etc. Thus they miss the opportunities to sell their produce at the right time and right place so as to obtain the most remunerative prices.

(h) Some post harvest problems of farmers encountered during marketing process are harvest losses, quality deterioration and increased costs. The infrastructures needed for disposal of crop produce are all weather roads and market yards. Though many villages in Himachal Pradesh have been linked with market places by approach roads, their maintenance is poor, which results in in-efficiency in transportation. The condition of market yards is not always good. In many cases the floors are broken, uneven and dusty. The space is limited. There is

hardly any protection of produce from rains, etc. all these add to the problems of wastage and quality deterioration.

(i) Large arrivals in the peak season cause congestion in the market yard and results in admixtures and pilferage of farm produce. Handling becomes difficult and daily bidding cannot be completed in some cases. Thus, the farmers have to stay-back with their pack animals, carts etc. The stay arrangements for the farmers at many market yards are non-existent. This not only costs them dearly in terms of loss of time, but also they have to bear the stress of straying out in adverse weather conditions. Another major problem is lack of proper storage facilities at market yards. Thus, inadequate infrastructures and their poor maintenance result in physical losses and quality deterioration of farm produce and hence increased costs of marketing for the farmers.

Board changes, which have taken, place in the rural areas of Himachal Pradesh:

(a) There were limited transportation facilities, wherein resulted in the limitation of advantageous points for farm product concentration. Now development of small trucks and pick-up vans and the rural roads/feeder roads have vastly increased the flexibility of assembling of scattered farm products.

(b) There were poor communication facilities. This meant the sellers and buyers had to physically assemble, establish price, and transfer title of produce. Due to continuous improvement in the spend and flexibility of communications, say seller in Kullu and a buyer in Delhi, can now talk quickly and cheaply on telephone without coming face to face.

(c) Because of high perishability of fruits and vegetables and poor standardization of products; physical inspection by buyer was necessary in order to ascertain just what was being purchased. Now due to improved techniques of refrigeration and storage in the producing areas along with much improved grading procedures, the feasibility of sale of products by sample of grade description has increased.

(d) Earlier commercial production in a village was small and unspecialized; thereby the cost to buyer/merchant purchasing and assembling small lots from

villages was high. Due to rapid expansion of commercial crops in villages larger surplus output and more specialized production have emerged and thus the output of individual villages is now a feasible purchase unit for a merchant with a truck.

(e) As regards organizational development in the food marketing, there has been the tendency towards integration. This process refers to expansion of firms by consolidating additional marketing functions and activities under a single management. Examples are fruit and vegetables retailers/assemblers who established wholesaling facilities, and wholesalers in big cities who have taken up direct purchasing from farmers. This vertical type of integration is occurring where marketing firms are combining activities unlike they were performing in the past, but which are related to them in the sequence of marketing activities.

Public policy related to marketing can be divided into regulatory and facilitative dimensions. The regulatory part deals with the regulatory and restraining policies. General goals of regulatory policy include: (i) preventing restraint on trade due to collusive action by a group of marketing firms; and (ii) preventing price fixing where the forces of price competition are blocked by inter-firm arrangements by commission agent and outside traders. Thus, the regulatory policies constrain, prohibit, and layout the rules of the game. Facilitative public policy is quite different. Included are publicly support market new activities, research and statistical reporting services and other related programmes. These efforts of facilitative public policy are designed to inform and otherwise help the producers and other buyers and sellers who are not in a position to do these things themselves.

Some of the important suggestions for improving marketing are given below:

1. Transport from farm to market should be improved and road network should be extended to un-marketed areas so that the commercialisation of agriculture could be stimulated in these areas.
2. Priority should be given to develop marketing facilities and new market yards at some appropriate new locations in the villages itself in those areas where such facilities are not existing at present within a radius of 6 to 8 kilometres, instead of constructing new market yards in those towns

which already have well developed old market places and where the traders are unwilling to shift the trading to the proposed/new market yards.

3. Storage facilities should be provided at the market place.
4. Improve quality of market intelligence and the information daily broadcasted.
5. Emphasis should be given on transparency and shift transaction in the market and display of market information of other markets.
6. Extension education and training as mentioned in the report should be an important activity of the Marketing Board and emphasis should be given on production of high value farm products and new marketing techniques.
7. Credit and crop insurance for fruits and vegetables cultivation should be provided from the formal institutional sources so as to free the farmers form the clutches of the traders.
8. Role of co-operatives in the marketing of various farm products should be strengthened and further enhanced.
9. Search for new profitable market destination for fruits and vegetables of Himachal Pradesh should be made keeping in view the emerging competition from other states, especially from the Uttaranchal and Panjab. Detailed analysis of high-end markets and of shifts in consumer and producers preferences should be done.

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