LIKELY DEMAND OF VEGETABLES OF HIMACHAL PRADESH IN THE NEIGHBOURING CONSUMING STATES DURING NEXT TEN YEARS

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ACRONYMS

HDI	Human Development Index
PQLI	Physical Quantity of Life Index
LIG	Low Income Group
MIG	Mid Income Group
HIG	High Income Group
MPCE	Monthly per Capita Expenditure
CGR	Compound Growth Rate
GOI	Government of India
MT	Metric Ton
Ha	Hectare
Qtl	Quintal
MIS	Market Information System

NOTES

1. Season wise projections made for summer, rainy and winter season depends upon the availability of these vegetables in the Market and not on the basis of their sowing season. Span of these seasons are different for different vegetables and demand projections for these vegetables is done accordingly and given in Annexure III.

2. Demand projections and Area allocation projections given in the main content of the Report are calculated on the basis of Share of Himachal vegetables in the markets under study.

3. The Demand and Area allocation projections are estimates on the basis of survey of Delhi, Punjab, Haryana and Chandigarh markets. Other markets like Mumbai, Kolkatta, Bangalore etc are not included in the study. Hence, the results should not be generalized for concluding total demand from Himachal Pradesh vegetables.

EXECUTIVE SUMMARY

Relevance of the Study

The work on long term demand and supply projections of fresh vegetables produced in Himachal Pradesh is mainly confined to behaviour of production of different vegetables in the state. The recent technological breakthrough in agriculture has stressed the need for diversification which suggests that vegetables are likely to provide exceptionally good opportunities to the economy of farmers as well as state to develop at a rapid speed. Moreover, the vegetables have a rich nutritional value. Hence, their importance cannot be overlooked and therefore, accurate projections of demand and supply are a vital pre- requisite for any effective policy. It is therefore, important to study the demand and supply scenario of fresh vegetables of Himachal Pradesh being marketed in the neighbouring states like Haryana, Punjab and Delhi and Chandigarh. With this background the present study is would be conducted with the following specific objectives.

Objectives of the Study

1. To study the supply of various vegetables from Himachal Pradesh with a view to analyse the critical periods when the vegetables should reach in the market and new vegetables which are to be introduced in order to take advantage of market demand in the neighbouring states.
2. To analyse the existing demand for Himachal vegetables and to project demand for vegetables in the consuming markets of neighbouring states.
3. To suggest the area allocation and other policy measures keeping in view the future demand for such vegetables.

Methodology

The data is collected from the main consuming centers of Himachal vegetables. Delhi and Chandigarh are the two main markets where vegetables from

Himachal Pradesh are marketed and consumed. Hence, these two markets will be selected purposively. Other four markets will be selected from two neighbouring states viz. Haryana and Punjab on the consideration that either the vegetables are directly sent to these markets or they are being fed by the large markets of Chandigarh and Delhi. In order to meet out the requirements of the different objectives of the study, different statistical tools and techniques were used. Household demand for vegetables, by and large, depends upon the size of the family, family's disposable income etc. Linear Demand function was used to determine demand of different vegetables. On the basis of these projections, season wise area allocation under important vegetables of Himachal Pradesh is obtained for next 10 years i.e. from 2005-06 to 2015-16.

Main Findings

Population Projections

The aggregate demand for a commodity is nothing but the per capita demand multiplied by the total population. On analysing the population projections for different States and UT covered under this study, it was found that the growth of urban population is higher. Since, urban population has higher per capita income and disposable income, the urban population is the major consumer of vegetables in these states. The results revealed that growth rate of urban population in the selected states are higher than the growth rate of rural population. The urban population grows at the rate of 51.36 percent in Delhi followed by 50.86, 39.65 and 37.56 percent in Haryana, Chandigarh and Punjab respectively.

Per Capita Disposable income Projections

An individual's demand for a commodity depends upon the level of income in addition to changes in relative prices, consumption habits, tastes and preferences etc. The income of consumer is hard to assess and since consumption is actually the function of disposable income, hence the projections of disposable income on per capita per month basis were made. The per capita disposable income

projections were made at constant prices over the period 2005-06 to 2015-16 keeping 1993-94 as base. The results revealed that per capita per month disposable income is higher in urban population as compared to rural population. The estimates are highest for Chandigarh followed by Haryana, Punjab and Delhi.

Demand Projections of Vegetables

The demand of vegetables over a period of 2005-06 to 2015-16 was projected on the basis of increase in per capita monthly consumption expenditure and increase in urban population. The model postulated for projections in this study assumes that all other factors, except changes in income and population, remain constant.

Himachal vegetables are available in the market during summer and rainy seasons. Therefore, on analysing the results, it was found that demand for cauliflower, cabbage, peas, tomato, capsicum, potato, carrot and broccoli tends to increase in near future. Since these vegetables are off-seasonal in nature for the markets covered under the study, hence, Himachal could have the major share in the supply of these vegetables. Besides this, demand of exotic vegetables like lettuce, asparagus, celery, Swiss chard, parsley, Brussels's sprouts, broccoli, red Cabbage, red and yellow capsicum etc. among the mid and high income population is also very high. Presently the supply of these vegetables is very limited. Thus these vegetables are affordable to five star hotels and large restaurants. Changing life style of mid and high income class tends to include continental cuisine in their daily diet. Hence, demand for these vegetables would increase in near future.

Area Allocation

On analysing the demand pattern for the next 10 years, it was found that the demand of some important vegetables requires more area for their cultivation. **Peas**

Area under Pea cultivation in the State during 2004-05 was 15441 ha. Peas are mainly grown in Lahaul –Spiti, Kinnaur and Shimla districts, which are purely off-seasonal in nature and fetches very high price in the market. Though the

projected area for 2005-06 comes out to be 7996 ha and shows a surplus area of 7445 ha, but this may be attributed to the fact that about 50 percent of the total production of Pea goes to other markets like, Bangalore, Maharashtra, Kolkatta etc. which are not covered under this study and some share out of this may also be consumed within the State. Hence, area under peas should be increased to reap the benefits of their high prices during the season.

Tomato Area under Tomato cultivation in the State during 2004-05 was 8973 ha which is 521 ha surplus over the projected area during 2005-06. Since, there are two crops of Tomato during the year in the State and one crop out of this is facing completion from neighbouring States and other tomato producing States. On the other hand, tomato prices registered fluctuating and declining trend during the last five years. Hence, the surplus area under tomato cultivation must be replaced for the production of other remunerative vegetables.

Beans Area under Beans cultivation during 2004-05 was 2608 ha which is 1404 ha less than the area required during 2005-06. Hence, area Beans must be increased.

Garlic On analysing the present and projected area under Garlic cultivation, it was found that presently there is a surplus area of 1109 ha under Garlic cultivation in the State. Thus, it must be replaced by other vegetables. This is also supported by the fact that Garlic prices are declining over the years and farmers are fetching losses in Garlic cultivation.

Cabbage The area under cultivation of cabbage during 2004-05 was 2889 ha which is 271 ha surplus than required during 2005-06. Further, prices of cabbage are also registered fluctuating trend. Hence, the surplus area must be replaced by other remunerative vegetables.

Cauliflower Area under cauliflower cultivation is 1821 ha less than the present requirement of 3629 ha. Thus, it should be increased to reap the benefit of higher prices as compared to cabbage.

Capsicum The demand of Capsicum is very high in the neighbouring States of Himachal Pradesh. The area under the cultivation of capsicum in the State is 1834 ha, which is 2398 ha less than the area required during 2005-06. Hence, it

must be increased by replacing area under Tomato cultivation especially in Solan district of Himachal Pradesh.

Potato Potato is an important off-seasonal seed crop of Lahaul-Spiti district of Himachal Pradesh. Besides, it is also grown in Kinnaur and high hills of district Shimla. Area under potato cultivation during 2004-05 was 14100 ha. On the basis of demand projections, it was found that 12582 ha additional area is required to meet the potato demand of neighbouring States.

Himachal Pradesh has a potential of becoming vegetable bowl of the country because the State has diverse agro-climatic conditions and scope of growing off-season vegetables is also very high. Most of the farmers of Himachal Pradesh are marginal and many of them recognize that the potential income from growing vegetables is higher than that of growing cereals. To achieve the desired results area under vegetable cultivation should be increased in the State, area under exotic vegetables must be increased immediately to bridge the gap between demand and supply, there should be an advertising campaign for Himachal vegetables especially exotic vegetables to get due share in the market, vegetable growers should organize themselves into farmers' cooperatives and link themselves with the district cooperatives or State cooperatives, MIS should be strengthened for the timely availability of information to the farmers so that they can plan their schedule for growing vegetables and last but not the least to avoid crises and risks, early warning systems and risk relief measures need to be in place to ensure economic security.

Chapter I

INTRODUCTION

Economic development is a long term process in which several forces and factors of production work together to bring about an economic change for the betterment. So, as to measure economic development, several criteria have been noted viz., quantitative and qualitative. In recent years, the qualitative aspects are gaining importance for which the 'Human Development Index (HDI) and Physical Quality of Life Index (PQLI)' are used. Human development is conceived as a process of enlarging human capabilities and choices. Apart from the basic necessities, the human choices include long life, good health and an improvement in the quality of life which includes a reduction in the ratio of poverty or hunger.

For ages, the main emphasis of cereal crops was just to feed the teaming millions. But cereals alone offer little hope for raising farmers out of poverty. For this new cropping systems are needed and vegetable farming is an excellent choice as a cash crop. The gestation period of vegetables varies 3 to 4 months, produce higher marketable surplus and generate higher prices at markets compared to cereals. Vegetables are more suited for production on small and marginal land parcels, where decreasing farm size, increasing number of operational holding are the major problems of the cultivators. On an average, size of holding in India is 1.57 Hectares, which is going down by further fragmentation of land holdings.

A strong vegetable sector in India will lead to economic growth through out the country. Cultivating vegetables provides more jobs compared to cereal production. The vegetable production will diversify and generate farm income greater than other products. Vegetables farming develop management and leadership skills among farmers and create service industries that can help entire community.

With the suitable agro- climatic conditions prevailing in the country, India has been the largest producer of vegetables in the world. The production of vegetables in the country is growing at the rate of 4.14 percent per annum during the last decade as presented in Table 1.1. Vegetable production was 90 million tonnes with the total area under vegetable cultivation 6.2 million hectares during 2003-04. Indian farmers grow an amazing number of different vegetables, 175 different types in all, but potato, tomato, onion, cabbage and cauliflower accounts for 60 per cent of total production. It is projected that the domestic vegetables requirement will rise from current levels of 83-91 million tonnes to 151-193 million tonnes by 2030. Indian farmers today cannot meet the high domestic demand for vegetables, as India imports approximately $ 678 million of vegetables requirements. (Shanmugasundaram, 2004).

Vegetables are the valuable source of proteins, minerals, vitamins and to some extent carbohydrates. The Nutritional Expert Group prescribes a minimum of 2400- 3900 calories of energy, 55 g of proteins, 0.4- 0.5 g calcium, 20 mg iron etc. to the adult. To fulfill these prescriptions, the simplest solution is the consumption of vegetables, as they possess, all of these ingredients. Further, for a balanced diet, an adult needs about, 280 g of vegetables per day, out of this about 85 g are leafy vegetables and rest are other kind of vegetables. However, though there has been a considerable increase in the production of vegetables, the much needed nutritional status of the population has not improved much as the per capita availability of vegetables is still far less than the recommended levels.

Table 1.1: Area, Production and Productivity of Vegetables in India

Year	Area (000' ha)	Production (000' MT)	Productivity (MT/ha)
1991-92	5593	58532	10.5
1992-93	5045	63806	12.6
1993-94	4876	65787	13.5
1994-95	5013	67286	13.4
1995-96	5335	71594	13.4
1996-97	5515	75074	13.6
1997-98	5607	72683	13.0
1998-99	5873	87536	14.9
1999-2000	5991	90823	15.2
2000-01	6250	93849	15.0
2001-02	6156	88622	14.4
2002-03	6092	84815	13.9
CGR (%)	**2.00**	**4.14**	**2.09**

Source: Economic Survey, Various Issues, GOI

Vegetable Production in Himachal Pradesh

The agriculture in Himachal Pradesh is not merely an occupation but a way of life and has become an essential part of the economic and cultural set up of the state. Himachal Pradesh is known for off-season vegetables. These do not face any competition from identical producer of the Plains, thus producers have an absolute advantage in vegetable production as compared to other crops. This absolute advantage of production fetches higher vegetables prices from markets of plains. With the advent of new hybrid varieties of seeds, vegetables can be grown in comparative harsh climatic conditions. Due to this reason the producers in the state moving fast towards vegetable production. At present thirty-four vegetables crops including exotic vegetables like Lettuce, Asparagus, Celery, Swiss Chard, Parsley, Kale, Brussels's Sprouts, Broccoli, Red Cabbage, etc. are being grown successfully. The state is also famous for the production of disease free and quality potato seed production. Other temperate vegetables like off-seasonal table potato, cabbage, cauliflower, tomato, peas, turnip, radish, carrot and French beans are being produced during the period when they cannot be grown in the adjoining plains and

they are in great demand. For this reason, hill vegetables are fetching higher prices and sold at a premium. Total production of vegetables is rising rapidly in the state. It increased from 30,000 MT in 1966 to 6.22 lakh MT in 2002-03. The annual growth rate during the last decade is 6.15 percent and overall productivity of vegetables 17.7 MT per hectare as presented in Table 1.2.

Table 1.2: Area, Production and Productivity of Vegetables in Himachal Pradesh

Year	Area (000' hectares)	Production (000' MT)	Productivity (MT/ha)	Himachal share in India	
				Area	Production
2000-01	32.00	580.00	18.1	0.51	0.62
2001-02	34.15	627.00	18.4	0.55	0.71
2002-03	35.22	622.00	17.7	0.58	0.73
2003-04	44.27	731.00	16.5	--	--
2004-05	46.21	832.00	18.0	--	--
CGR (%)	**4.91**	**3.56**	**-1.11**	**6.64**	**8.51**

Marketable Surplus of Vegetables

Vegetables produce higher marketable surplus as compared to other traditional food crops and fetches higher prices in the market. This can be supported by reviewing some previous studies.

Kumar (1991) conducted a study on marketing of vegetables in Solan district of Himachal Pradesh and found that marketed surplus was 85 per cent in tomato and capsicum, whereas, it was 90 per cent in French beans and peas. Sharma, Saini and Thakur (1993) studied the marketing of agricultural products in different climatic zones of Himachal Pradesh and found that marketed surplus for vegetables was between 77 per cent to 86 per cent of total production. Singh, Sharma and Sharma (1994) conducted a study in Shimla, Solan and Sirmour districts of Himachal Pradesh and found that marketed surplus was between 98.4 and 94.1 per cent. It was highest in case of cauliflower and least in case of peas. Mehta and Chauhan (1996) studied the marketed surplus of vegetables vis-à-vis food grains and the contribution of farm and non-farm income of three regions of Himachal

Pradesh. Their study revealed that the marketed surplus of food grains was low in all the regions while marketed surplus for vegetables was very high in all the regions. Lal, Thakur and Sharma (1997) conducted a study in Kangra and Mandi districts of Himachal Pradesh to estimate the marketable and marketed surplus and found that surplus of different vegetables ranged between 83 and 97 per cent.

The proportion of marketable and marketed surplus of vegetables to the total production is greater than that of the foodgrains. Sharma, Saini and Thakur (1993) found that the proportion of foodgrains was in the range of 2.3 to 30.47 per cent on different size of land holdings, but it was in the range of 77.7 to 87 per cent in case of vegetables. Mehta and Chauhan (1996) in their study to estimate the marketed surplus of vegetables vis-a-vis food grains in different regions of Himachal Pradesh found that the marketed surplus of food grains was low in all the regions, whereas it was very high in case of vegetables. Singh, Ratan and Bhati (2000) in their study in Himachal Pradesh found that in case of fruits and vegetables, a very high proportion, more than 90 per cent of the total produce goes to the markets as marketed surplus. Marketed surplus in food grains like wheat, maize and paddy it was between 45 to 68 per cent.

Chapter II
METHODOLOGY

The main objective of economic planning in under developed countries is to achieve a higher standard of living for the masses through more employment and higher production leading to rapid increase in their real per capita income. A rise in real per capita income is usually accompanied by an increase in demand for different commodities. The importance of long term projections of economic growth, their bearing on agricultural development and their significance to an economy committed to planned development, need not to be over emphasized. An appraisal of the magnitude of long term demand and supply for different commodities would provide guidelines to planners in allocating various resources. Likewise, a realistic assessment of the production possibilities would indicate the extent and direction in which the imbalances are likely to arise in different sectors and regions.

The determination and direction of future demand requires knowledge of a number of factors such as prices of the product, prices of substitutes, population., consumer behaviour and income. The validity and usefulness of the projections will be conditioned by the extent to which these factors are taken into account while arriving at the order of magnitude. In any such projection, attempt should be made to derive alternative projections based upon different sets of assumptions regarding the determinants of demand and supply over the projected period. For the purpose of arriving at the range of demand projections, different assumptions with respect to the increase in national income, growth of population, rise in per capita income and change in income elasticity of demand etc. should be considered.

Scope of the Study

The work on long term demand and supply projections of fresh vegetables produced in Himachal Pradesh is mainly confined to behaviour of production of different vegetables in the state. The recent technological breakthrough in agriculture has stressed the need for diversification which suggests that vegetables

are likely to provide exceptionally good opportunities to the economy of farmers as well as state to develop at a rapid speed. Moreover, the vegetables have a rich nutritional value. Hence, their importance cannot be overlooked and therefore, accurate projections of demand and supply are a vital pre- requisite for any effective policy. It is recognized that the estimates of demand and supply elasticities are crucial, and a projection is only as good as these estimates. It is therefore, important to study the demand and supply scenario of fresh vegetables of Himachal Pradesh being marketed in the neighbouring states like Haryana, Punjab and Delhi. With this background the present study was conducted with the following specific objectives.

Objectives

4. To study the supply of various vegetables from Himachal Pradesh with a view to analyse the critical periods when the vegetables should reach in the market and new vegetables which are to be introduced in order to take advantage of market demand in the neighbouring states.
5. To analyse the existing demand for Himachal vegetables and to project demand for vegetables in the consuming markets of neighbouring states.
6. To suggest the area allocation and other policy measures keeping in view the future demand for such vegetables.

The Data

The objectives of the study requires that the data is collected from the main consuming centers of Himachal vegetables. Delhi and Chandigarh are the two main markets where vegetables from Himachal Pradesh are marketed and consumed. Hence, these two markets were selected purposively. Other four markets was selected from two neighbouring states viz. Haryana and Punjab on the consideration that either the vegetables are directly sent to these markets or they are being fed by the large markets of Chandigarh and Delhi. Reference period for the present study is 2005-06.

Table 2.1: Markets selected for the study

State/ UT	Market	Wholesalers/ Commission Agents	Retailers	Consumers
Chandigarh	Chandigarh	15	40	75
Delhi	Delhi	20	50	100
Haryana	Ambala	10	20	50
	Karnal	10	20	50
Punjab	Jallandhar	10	20	50
	Ludhiana	10	20	50
Total		**75**	**170**	**375**

In the selected markets comprehensive list of traders, retailers was drawn and a random sample was selected as presented in Table 2.1. In addition to this, sample of 100 consumers in Delhi market, 75 in Chandigarh market and 50 each in Ambala, Karnal, Jallandhar and Ludhiana markets was selected for the study on the basis of population of these cities and their market size. The sample of consumers was selected on the basis of multistage stratified random cum purposive sampling technique. The sampling parameter on which sample was drawn is their family income on the basis of which the consumers are classified into low income group (LIG), mid income group (MIG) and high income group (HIG) as presented in Table 2.2. The primary data was collected from traders, retailers and consumers on pre-designed schedule by personal interview method. Besides this, secondary data regarding production of different vegetables and arrival of different vegetables in the respective markets was collected from respective agencies.

Table 2.2: Income based classification of consumer households

Market	Consumers	LIG	MIG	HIG
		(Upto Rs 10,000 PM)	(Rs 10,001 to 25,000 PM)	(Rs 25,001 and above)
Chandigarh	75	25	30	20
Delhi	100	25	50	25
Ambala	50	18	20	12
Karnal	50	13	25	12
Jallandhar	50	18	20	12
Ludhiana	50	18	20	12
Total	**375**	**117**	**165**	**93**

Analytical Methods

In order to meet out the requirements of the different objectives of the study, different statistical tools and techniques of tabular analysis, elements of the models was used. The brief discussion of the methods is as follows.

The Demand Function

The economic concept of consumer demand refers to the quantity of goods or services that the consumer is willing and able to buy at a specified price. Household demand for vegetables, by and large, depends upon the size of the family, family's disposable income etc. The manner of including the variables in the demand function was to convert household data into per capita consumption of various vegetables. The household's disposable income was also worked out on per capita basis. Linear demand function used for the present analysis is as follows:

$$Y = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + u$$

where,

Y = demand for vegetable

x_1 = quantity of vegetable

x_2 = Monthly per capita expenditure (MPCE)

x_3 = price of vegetable

b_1 , b_2 , b_3 = regression coefficients

a = intercept

u = random disturbance term

Corrections made for Data Analysis

1) For population projections, decadal growth rate was converted into percent annual compound growth rate.
2) For projecting disposable income, disposable income was converted at constant prices (1993-94).

3) Monthly per capita consumption expenditure (MPCE) was converted into constant prices (1993-94) and then, their CGR (%) was computed.

4) Rural/ Urban MPCE Ratio was worked out to compute expenditure projections for rural/ urban population.

5) Coefficients of Model are at current prices and projections are at constant prices (1993-94 prices).

Chapter III

Scenario of Vegetable Production in Himachal Pradesh

The potential for the farming of the off-season vegetables is due to the varied agro-climatic conditions. Thus it is necessary to briefly focus on the agro-climatic conditions vis-a-vis types of vegetables grown in Himachal Pradesh, as a critical determinant of vegetable farming. Himachal Pradesh has been divided into following four agro-climatic zones on the basis of altitude, temperature, topography, rainfall and humidity: (a) Sub-mountain and Low Hills sub-Tropical Zone, (b) Mid hills Sub-Humid Zone, (c) High Hills Temperate Wet Zone, and (d) High Hills Temperate Dry Zone

Sub-mountain and Low Hills sub-Tropical Zone

This zone comprises of low hills and valley areas up to an elevation of 914 meters above mean sea level. It is potentially suitable for growing all the vegetables recommended for the adjoining plains with miner adjustment in their time of planting. Tomato, brinjal cucumber, capsicum, chilies, French beans, cauliflower and peas can be paying proposition. The seed production of Asiatic radish (Japanese white and Chinese Pink), turnip (Purple top white Globe) and disease- free okra has also been commercially exploited.

Mid hills Sub-Humid Zone

This zone comprises of hills with elevation ranging from 915 to 1523 meters above mean sea level and characterized by moderate to heavy monsoon rains. The cultivation of cash crops like ginger and off-season vegetables namely tomato, French beans, capsicum, cucumber, peas, etc. has been taken up commercial scale in the selected areas. Among the seed crops, cauliflower seed production (late group) has come into limelight in certain areas around Solan. The seed production of other vegetables like turnip, radish, capsicum, and garden beet has also good potential where transport facilities for fresh vegetables are inadequate.

High Hills Temperate Wet Zone

This high-hill temperate wet zone extends to areas with elevations ranging from 1524 to 2472 meters above mean sea level. The climate is temperate with moderate to heavy monsoon rains of about 100-200 cm. Snow is a usual feature during winters and the temperatures are generally very low, thus preventing crop growth from November to March. The important vegetables grown here are peas; French beans, cauliflower, cabbage, radish, turnip, carrot, beet and leafy vegetables during months for supply to the plains. Seed crops like turnip, radish, beet, cabbage, etc. may be grown but rains may somehow affect the seed quality during maturity periods of the seed-crops.

High Hills Temperate Dry Zone

High altitude dry zone in the north-west comprises of Lahaul-Spiti, Kinnaur and Bharmaur area of Chamba districts. This zone is characterized by low rainfall during summer months (25-40 cm.) and heavy snowfall during winter months (3-5 meter). The cold dry temperature areas extend beyond 2472 meters above level and the cultivation is being carried out only in summer season under irrigated conditions. This area is ideally suited for the production of quality seed of temperate vegetables and off-season vegetables like cabbage, cauliflower, peas, onion and root vegetables.

Sowing time of Vegetables in different agro-climatic zones

As it is clear from the foregoing discussion, the climate of the state is diverse and is thus suitable for growing a large number of vegetable crops. The agro-climatic conditions are such that vegetables production can be undertaken during the period, when these crops cannot be grown in the plain area of the country, hence, the use of the term off-season vegetable production. In Himachal Pradesh itself the sowing time of the same vegetable is different in different agro-climatic zones. Thus it is necessary to briefly focus on the sowing timing of the vegetables in Himachal Pradesh, as critical determinant of vegetable farming.

Sowing time of Vegetables in Low Hills

In low hills zone the vegetables are sown all over the year. In the period from January to April vegetables namely tomato, capsicum, brinjal, ladyfinger, french beans, cucumber, bitter gourd, and spinach are sown. In the month of May to August tomato, brinjal, ladyfinger, french beans, cucumber, bitter gourd, peas, cauliflower, radish, carrot, and spinach are sown. In the month of September to December tomato, capsicum, brinjal, peas, cauliflower, radish, carrot, and spinach are sown.

Sowing time of Vegetables in Mid Hills

As in low hills zone, in the mid hills zone the vegetables are also sown all over the year. In the period from January to April vegetables namely tomato, capsicum, brinjal, ladyfinger, french beans, cucumber, bitter gourd, and spinach are sown. In the month of May to August tomato, capsicum, brinjal, ladyfinger, french beans, cucumber, bitter gourd, cauliflower, turnip, radish, carrot, and spinach are sown. In the month of September to December peas, cauliflower, turnip, radish, carrot, and spinach are sown.

Sowing time of vegetables in High Hills

In this zone the production season is of six to nine months due to snowfall. In the period from January to April vegetables namely tomato, ladyfinger, bitter gourd, radish, carrot, peas and spinach are sown. In the month of May to August ladyfinger, french beans, cauliflower, radish, and turnips are sown. In the month of September to December peas and spinach are sown.

Table 3.1: Sowing time of different vegetable crops in different climatic zones

Name of Vegetable	Zone I Low Hills	Zone II Mid Hills	Zone III & Zone IV High Hills
Tomato	March to May	Feb., March-June	April
Capsicum	Nov., Feb. and March	March to May	
Brinjal	Oct., March, May - June	March - May	
Lady finger	Feb.-March, July	March- June	April - May
French beans	Feb.-March and Aug.	March - July	April - June
Cucumber	Feb.-March, June	March - May	
Bitter gourd	Feb.-March, June	March - May	April
Peas	August - Nov.	Sept.-Nov.	Oct-Nov & March-April
Cauliflower	June - Nov.	July -Sept.	April - May
Cabbage	August - Oct.	Sept.-Oct.	April - June
Turnip		Sept.-Oct.	July - August
Radish	August - Oct.	July - Oct.	March - August
Carrot	August -Sep.	July -Sept.	March - July
Spinach	July - Nov., Feb. - March	July -Sept.	March- June, Sept.

Source: Cultural Practices for Vegetable Crops in Himachal Pradesh, Directorate of Extension Education, Dr. Y S Parmar University of Horticulture & Forestry, Solan, HP

Critical Periods of availability of Vegetables from Himachal Pradesh

Majority of vegetable production of Himachal Pradesh is off-season in nature. The term off-season means that these vegetables can be produced in the state due to varied climatic condition when the production of these vegetables is not economically viable and only can be produced under ideal conditions of green houses in controlled conditions in competing areas of neighboring states.

The production and marketing of tomato in neighboring /competing states ends up to June. From first week of the July Himachal Pradesh is the sole supplier of tomatoes up to second week of Oct. Further, Solan district has an advantage over other tomatoes producing districts of Himachal and August onwards other major tomato producing districts like Sirmour, Kullu and Bilaspur do not face any competition from the other tomato producing states like Haryana, Punjab, Utter Pradesh and Rajasthan etc.

Peas are also produced during the month of July to October in the district of Kullu and tribal districts of Kinnaur and Lahul & Spiti do not face any competition. During the month of August and September markets of Punjab, Haryana and Delhi terminal market gets supplies of peas from these districts and fetch very high price.

Capsicum is only produced in Himachal Pradesh and no competition from other states.

Table 3.2: Commercial Vegetable Crops in Different Agro-Climatic Zones

Zone	Market Crops	Seed Crops
Sub - tropical sub -montane and low-hills. (365-914m and 90-100cm. Rainfall)	Brinjal, Cucumber, Okra, Peas, Cauliflower, Potato	Asiatic radish, Okra, Onion, Cauliflower
Sub - temperate sub-humid (914 - 1523 m 90 - 100 cm. Rainfall)	Tomato, French beans, Capsicum, Cucumber, Peas, Ginger, Potato	Cauliflower (late group), Bell peper, Turnip, Capsicum, French beans, Table beet, Potato
Sub-temperate high hills. (1524-2472 m 90 - 100cm. Rainfall)	Peas, French beans, Cauliflower, Cabbage, Radish, Turnip, Carrot, Beet, Potato	Potato
Dry-temperature high-hills Sub-temperate high hills. (1524 - 2472 m 90-100 cm. Rainfall)	Peas, Cole crops, Turnip, Onion	Cabbage, Beet, Potato, Peas, Chicory and temperate varieties of Radish and Turnip

The cabbage produced in Kullu, Lahul & Spiti, Shimla and Solan do not face any competition from other states from April to June.

Similarly the Cauliflower produced from April to Oct produced in the districts of Kullu, Solan, Mandi and Kinnaur do not face any competition. The cauliflower is produced in Kullu through out the year except in the months of December to February.

The cauliflower and Cabbage produced in heights of Kullu valley, Gharsa Valley and Manikaran valley of Kullu have organic production up to some extent as

very less quantity of plant protection chemicals are used and have a very good quality.

The steadfastness with which vegetable production was pursued in the State can be seen from the fact that while hardly thirty thousand tones of summer vegetables were produced during 1966, more than 8324 thousand tones were grown during 2004-05. About 0.2 million small and marginal farmers were engaged in vegetable growing, and as a result, almost one forth of the population is directly or indirectly benefited from it. Area and production of different vegetables of Himachal Pradesh are presented in Table 3.3.

Table 3.3: Area and Production of different Vegetables in Himachal Pradesh

Area: Hectares; Production: M. Tonnes; Yield: MT/ha

Year→	2000-01			2001-02			2002-03			2003-04			2004-05		
Vegetable	**Area**	**Prod.**	**Yield**	**Area**	**Prod.**	**Yield**	**Area**	**Prod.**	**Yield**	**Area**	**Prod.**	**Yield**	**Area**	**Prod.**	**Yield**
Peas (Green)	9400 (21.39)	90000 (12.33)	9.57	9830 (20.94)	94170 (12.03)	9.58	9505 (19.90)	90480 (11.65)	9.52	14789 (25.51)	154043 (17.37)	10.42	15441 (25.60)	162144 (16.47)	10.50
Tomato	6000 (13.65)	207870 (28.48)	34.64	7035 (14.98)	243950 (31.18)	34.68	9000 (18.84)	231700 (29.83)	25.74	9013 (15.55)	246033 (27.75)	27.30	8973 (14.88)	300976 (30.58)	33.54
Beans	2170 (4.94)	21310 (2.92)	9.82	2240 (4.77)	22040 (2.82)	9.84	1910 (4.00)	20798 (2.68)	10.89	2444 (4.22)	27202 (3.07)	11.13	2608 (4.32)	26684 (2.71)	10.23
Onion	2020* (4.60)	37075* (5.08)	18.35	2520* (5.37)	45345* (5.80)	18.00	965 (2.02)	18600 (2.39)	19.27	1262 (2.18)	21046 (2.37)	16.68	1290 (2.14)	21664 (2.20)	16.79
Garlic	-	-	-	-	-	-	2898 (6.07)	29947 (3.86)	10.33	2725 (4.70)	24789 (2.80)	9.10	2649 (4.39)	26626 (2.70)	10.05
Cabbage	2150 (4.89)	61820 (8.47)	28.75	2200 (4.69)	57660 (7.37)	26.21	2195 (4.60)	66311 (8.54)	30.21	2790 (4.81)	71134 (8.02)	25.50	2889 (4.79)	88927 (9.03)	30.78
Cauliflower	1340 (3.05)	24340 (3.33)	18.16	1370 (2.92)	24980 (3.19)	18.23	1450 (3.04)	30435 (3.92)	20.99	1648 (2.84)	29320 (3.31)	17.79	1808 (3.00)	34445 (3.50)	19.05
Radish, Turnip & Carrot	1020 (2.32)	17900 (2.45)	17.55	1015 (2.16)	17860 (2.28)	17.60	910 (1.90)	19165 (2.47)	21.06	1222 (2.11)	20157 (2.27)	16.50	1269 (2.10)	23130 (2.35)	18.23
Lady Finger	710 (1.61)	5800 (0.79)	8.17	730 (1.55)	5980 (0.76)	8.19	815 (1.71)	8715 (1.12)	10.69	1373 (2.37)	13774 (1.55)	10.03	1420 (2.35)	14489 (1.47)	10.20
Cucurbits	2500 (5.69)	62480 (8.56)	27.99	2600 (5.54)	64500 (8.24)	24.81	2245 (4.70)	58280 (7.50)	25.96	1993 (3.44)	49838 (5.62)	25.01	2021 (3.35)	46925 (4.77)	23.22
Capsicum & Chillies	1630 (3.71)	15250 (2.09)	9.36	1650 (3.51)	15430 (1.97)	9.35	1420 (2.97)	16870 (2.17)	11.88	1642 (2.83)	17862 (2.01)	10.88	1834 (3.04)	19455 (1.98)	10.61
Brinjal	400 (0.91)	7020 (0.96)	17.55	380 (0.81)	6840 (0.87)	18.00	350 (0.73)	6784 (0.87)	19.38	544 (0.94)	10070 (1.14)	18.51	624 (1.03)	11121 (1.13)	17.82
Other Vegetables	2660 (6.05)	29135 (3.99)	10.95	2580 (5.49)	28690 (3.67)	11.12	1557 (3.26)	23833 (3.07)	15.31	2829 (4.88)	46082 (5.20)	16.29	3387 (5.62)	55856 (5.67)	16.49
Total vegetables (A)	32000 (72.81)	580000 (79.45)	-	34150 (72.74)	627445 (80.19)	-	35220 (73.74)	621918 (80.08)	-	44274 (76.36)	731350 (82.48)	-	46213 (76.62)	832442 (84.57)	--
Potato (B)	11951 (27.19)	149989 (20.55)	12.55	12800 (27.26)	155000 (19.81)	12.11	12540 (26.26)	154750 (19.92)	12.34	13705 (23.64)	155400 (17.52)	11.34	14100 (23.38)	151910 (15.43)	10.77
(A+B)	43951 (100.0)	729989 (100.0)	-	46950 (100.0)	782445 (100.0)	-	47760 (100.0)	776668 (100.0)	-	57979 (100.0)	886750 (100.0)	-	60313 (100.0)	984352 (100.0)	-

**Includes Area and Production of Onion and Garlic; Figures in Parenthesis are percentages of total*

Fig 3.1: HARVESTING SEASON OF CAULIFLOWER

STATE/UT	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Delhi												
Haryana												
Himachal Pradesh												
Punjab												
Uttaranchal												
Assam												
Bihar												
Chattisgarh												
Jharkhand												
Karnataka												
Madhya Pradesh												
Manipur												
Meghalaya												
Mizoram												
Nagaland												
Orrisa												
Rajasthan												
Sikkim												
Uttar Pradesh												
West Bengal												
Andaman Nicobar												

Source: Indian Horticulture Database, 2004, National Horticulture Bulletin, Ministry of Agriculture, GOI

Peak Season **Lean Season**

Fig 3.2: HARVESTING SEASON OF CABBAGE

STATE/UT	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Delhi												
Haryana												
Himachal Pradesh												
Punjab												
Uttaranchal												
Andhra Pradesh												
Assam												
Bihar												
Chattisgarh												
Gujarat												
Jharkhand												
Karnataka												
Madhya Pradesh												
Maharashtra												
Manipur												
Meghalaya												
Mizoram												
Nagaland												
Orrisa												
Rajasthan												
Sikkim												
Tamilnadu												
Uttar Pradesh												
West Bengal												
Andaman Nicobar												

Peak Season **Lean Season**

Fig 3.3: HARVESTING SEASON OF TOMATO

STATE/UT	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Delhi												
Haryana												
Himachal Pradesh												
Punjab												
Uttaranchal												
Andhra Pradesh												
Assam												
Bihar												
Chattisgarh												
Gujarat												
Jharkhand												
Karnataka												
Madhya Pradesh												
Maharashtra												
Meghalaya												
Mizoram												
Nagaland												
Orrisa												
Rajasthan												
Tamilnadu												
Uttar Pradesh												
West Bengal												
Andaman Nicobar												
Pondicherry												

Peak Season Lean Season Round the Year

Fig 3.4: HARVESTING SEASON OF PEAS

STATE/UT	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Delhi												
Haryana												
Himachal Pradesh												
Punjab												
Uttaranchal												
Andhra Pradesh												
Assam												
Bihar												
Chattisgarh												
Jharkhand												
Karnataka												
Madhya Pradesh												
Meghalaya												
Mizoram												
Nagaland												
Orrisa												
Rajasthan												
Sikkim												
Uttar Pradesh												
West Bengal												

Peak Season **Lean Season**

Fig 3.5: HARVESTING SEASON OF POTATO

STATE/UT	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Delhi												
Haryana												
Himachal Pradesh												
Punjab												
Uttaranchal												
Andhra Pradesh												
Assam												
Bihar												
Chattisgarh												
Gujarat												
Jharkhand												
Karnataka												
Madhya Pradesh												
Maharashtra												
Meghalaya												
Nagaland												
Orrisa												
Rajasthan												
Sikkim												
Tamilnadu												
Tripura												
Uttar Pradesh												
West Bengal												

Peak Season Lean Season

Chapter IV

Existing Demand and Demand Projections of Himachal Vegetables in the Neighbouring States

The projections of demand made in this study are based on a few assumptions regarding the factors that influence demand like per capita income, disposable income, relative price changes and growth of population and disposable income during the next 10 years. The demand for a commodity is a function determined by the price of the commodity, the prices of other substitutes, the disposable income of the consumer, population, tastes and habits of the people. Of these, the most important factors, which influence the demand directly, are population and disposable income. Thus, the growth of demand for vegetables is envisaged to depend primarily on the expected rate of increase in real per capita disposable income and population.

Population Projections

The aggregate demand for a commodity is nothing but the per capita demand multiplied by the total population. Population projections are usually based on a few vital assumptions such as those relating to fertility, mortality and migratory factors in particular. The changes taking place in any or all of these factors will bring out accompanying changes in the population structure in the years to come. For population projections for the next 10 years decadal growth rate was converted into percent annual growth rate and projections were made accordingly. The population projections were made over the period 2005-06 to 2015-16 and presented in Tables 4.1 to 4.4.

On analysing the population projections for different States and UT covered under this study, it was found that the growth of urban population is higher in the selected states. Since, urban population has higher per capita

income and disposable income, the urban population is the major consumer of vegetables in these states.

Table 4.1: Population Projections for Haryana

Year	Rural	Urban	Total
2000-01	15029260	6115304	21144564
2005- 06	15183484	6268900	21452384
2006- 07	15214518	6300079	21514598
2007- 08	15245616	6331413	21577030
2008- 09	15276777	6362903	21639681
2009-10	15308002	6394550	21702552
2010-11	15339291	6426354	21765645
2011-12	15370644	6458316	21828960
2012-13	15402061	6490437	21892498
2013-14	15433542	6522718	21956260
2014-15	15465087	6555160	22020247
2015-16	15496697	6587763	22084459

Table 4.2: Population Projections Delhi

Year	Rural	Urban	Total
2000-01	944727	12905780	13850507
2005- 06	945224	13233036	14178260
2006- 07	945323	13299477	14244800
2007- 08	945423	13366251	14311674
2008- 09	945522	13433360	14378882
2009-10	945622	13500806	14446428
2010-11	945721	13568591	14514313
2011-12	945821	13636716	14582537
2012-13	945920	13705184	14651104
2013-14	946020	13773995	14720014
2014-15	946119	13843151	14789270
2015-16	946219	13912655	14858874

Table 4.3: Population Projections Chandigarh

Year	Rural	Urban	Total
2000-01	92120	808515	900635
2005- 06	93427	824390	917817
2006- 07	93690	827602	921293
2007- 08	93955	830827	924782
2008- 09	94220	834064	928284
2009-10	94485	837314	931800
2010-11	94752	840577	935329
2011-12	95019	843852	938871
2012-13	95287	847140	942428
2013-14	95556	850441	945997
2014-15	95826	853755	949581
2015-16	96096	857081	953177

Table 4.4: Population Projections Punjab

Year	Rural	Urban	Total
2000-01	16096488	8262511	24358999
2005- 06	16195309	8416261	24611570
2006- 07	16215146	8447353	24662499
2007- 08	16235007	8478559	24713567
2008- 09	16254893	8509881	24764774
2009-10	16274803	8541319	24816122
2010-11	16294737	8572872	24867610
2011-12	16314696	8604543	24919239
2012-13	16334679	8636330	24971009
2013-14	16354687	8668234	25022921
2014-15	16374719	8700257	25074976
2015-16	16394776	8732398	25127173

Per Capita Disposable income Projections

An individual's demand for a commodity depends upon the level of income in addition to changes in relative prices, consumption habits, tastes and preferences etc. The income of consumer is hard to assess and since consumption is actually the function of disposable income, hence the projections of disposable income on per capita per month basis were made. The per capita

disposable income projections were made at constant prices over the period 2005-06 to 2015-16 keeping 1993-94 as base.

Table 4.5: Disposable Income (Rs Per capita per Month) Projections DELHI (At constant prices 1993-94)

YEAR	RURAL	URBAN
2005-06	465.39	674.48
2006-07	489.32	695.39
2007-08	514.47	716.95
2008-09	540.91	739.18
2009-10	568.71	762.09
2010-11	597.94	785.72
2011-12	628.68	810.07
2012-13	660.99	835.19
2013-14	694.97	861.08
2014-15	730.69	887.77
2015-16	768.25	915.29

Table 4.6: Disposable Income (Rs Per capita per Month) Projections CHANDIGARH (At constant prices 1993-94)

YEAR	RURAL	URBAN
2005-06	920.35	1333.85
2006-07	957.35	1381.60
2007-08	995.84	1431.06
2008-09	1035.87	1482.29
2009-10	1077.51	1535.36
2010-11	1120.83	1590.32
2011-12	1165.89	1647.26
2012-13	1212.75	1706.23
2013-14	1261.51	1767.31
2014-15	1312.22	1830.58
2015-16	1364.97	1896.12

Table 4.7: Disposable Income (Rs Per capita per Month) Projections HARYANA (At constant prices 1993-94)

YEAR	RURAL	URBAN
2005-06	740.49	1073.17
2006-07	767.74	1110.41
2007-08	795.99	1148.94
2008-09	825.29	1188.81
2009-10	855.66	1230.07
2010-11	887.14	1272.75
2011-12	919.79	1316.91
2012-13	953.64	1362.61
2013-14	988.73	1409.89
2014-15	1025.12	1458.82
2015-16	1062.84	1509.44

Table 4.8: Disposable Income (Rs Per capita per Month) Projections PUNJAB (At constant prices 1993-94)

YEAR	RURAL	URBAN
2005-06	706.52	1023.94
2006-07	732.45	1053.94
2007-08	759.33	1084.82
2008-09	787.20	1116.61
2009-10	816.09	1149.32
2010-11	846.04	1183.00
2011-12	877.09	1217.66
2012-13	909.27	1253.34
2013-14	942.64	1290.06
2014-15	977.24	1327.86
2015-16	1013.10	1366.77

MPCE Growth Rates

(%/Per Capita/month)

	Rural	Urban
Delhi	3.100	5.140
Chandigarh	3.580	4.020
Punjab	2.930	3.670
Haryana	3.470	3.680

Demand Projections of Vegetables

The demand of vegetables over a period of 2005-06 to 2015-16 was projected on the basis of increase in per capita monthly consumption expenditure and increase in urban population. The model postulated for projections in this study assumes that all other factors, except changes in income and population, remain constant. The results of Linear demand function are discussed and used for demand projections (Estimated model coefficients are given in Annexure IV).

Fig 4.1: Demand Projection for Himachal Vegetables in Neighbouring States

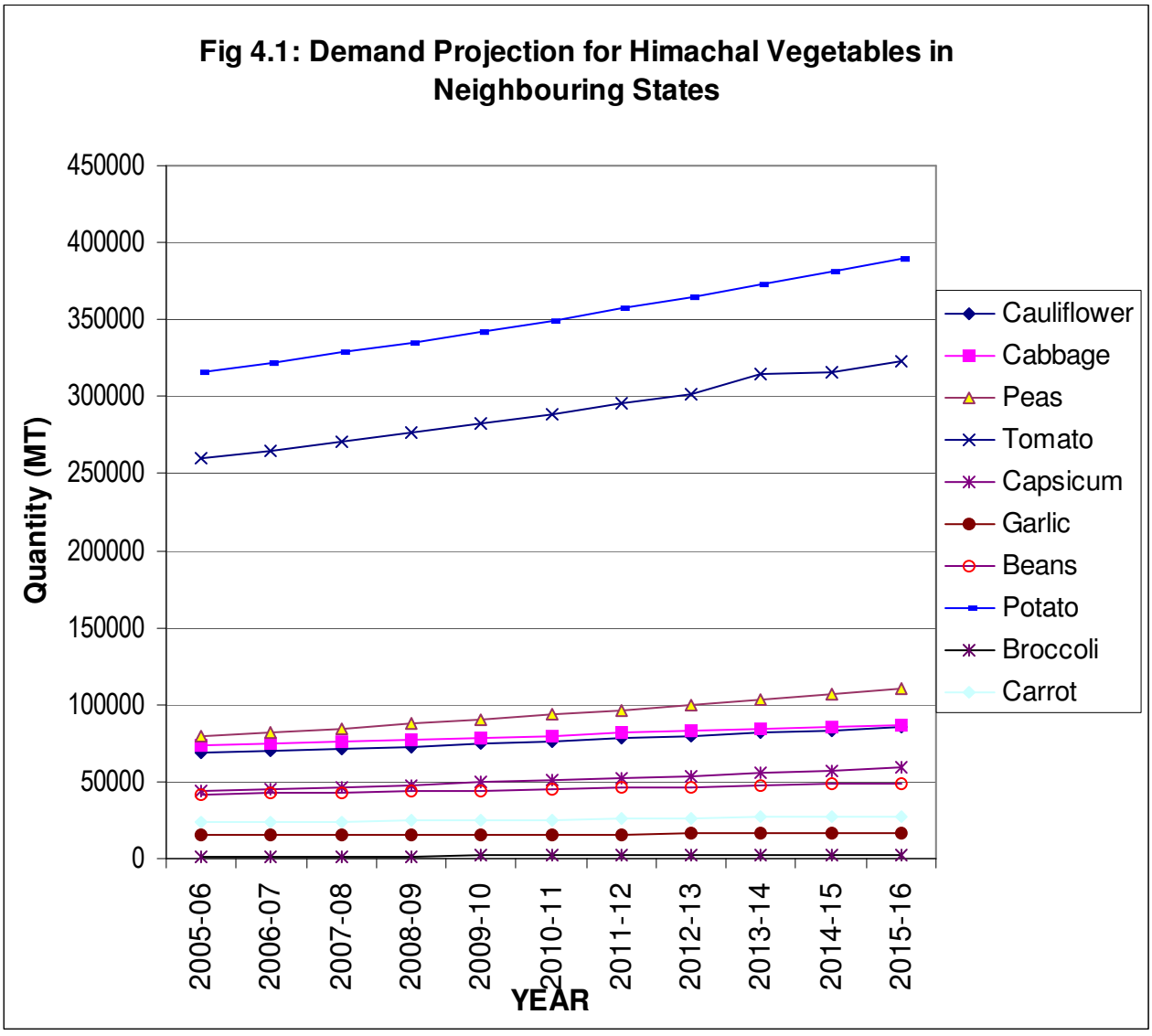


Table 4.9: Demand of Important Vegetables is Northern Indian States

(Qty:MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	265157.2	269026.4	273024.8	277157.6	281430.4	285848	290415.2	295137.2	300021.6	305072.8	310296
Cabbage	284364.8	288787.6	293359.2	298087.2	302977.2	308030.8	313259.2	318666.4	324258	330043.2	336028.4
Peas	258620	265999.6	273644	281566	289772.8	298277.6	307089.6	316220.4	325682	335486	345646.8
Tomato	667100	681802.8	697022	712776.8	729085.6	745970.8	763450.8	781548.4	825488	819690.8	839782.8
Capsicum	140090.8	143896	147837.6	151923.2	156158	160545.2	165092.4	169804.8	174688.8	179750.4	184996
Garlic	87322	87834	88356.8	88890	89435.2	89993.6	90564.8	91146	91743.6	92353.6	92977.6
Beans	112775.6	114620	116523.2	118487.2	120512.8	122603.2	124761.6	126988.4	129287.2	131659.6	134110.4
Potato	1239592	1268140	1297683	1328263	1359913	1392677	1426592	1461703	1498052	1535685	1574649
Broccoli	10904	11538	12197.6	12882	13593.6	14331.2	15098.4	15894.8	16722	17580.4	18472.8
Carrot	206271.6	211828	217582.8	223542.8	229716.4	236109.2	242732	249591.6	256698.4	264059.2	271684

Table 4.10: Share of Himachal Vegetables in total Demand

(Percent)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	25.79	25.96	26.14	26.31	26.48	26.66	26.84	27.02	27.20	27.38	27.56
Cabbage	26.04	26.03	26.02	26.01	25.99	25.98	25.97	25.96	25.95	25.94	25.93
Peas	30.67	30.80	30.92	31.05	31.17	31.29	31.41	31.53	31.64	31.76	31.87
Tomato	38.94	38.90	38.85	38.81	38.76	38.72	38.68	38.63	38.14	38.55	38.51
Capsicum	31.46	31.50	31.54	31.57	31.61	31.64	31.68	31.71	31.75	31.78	31.81
Garlic	17.33	17.38	17.43	17.48	17.54	17.59	17.64	17.70	17.76	17.81	17.87
Beans	36.93	36.90	36.86	36.83	36.79	36.76	36.72	36.69	36.65	36.62	36.58
Potato	25.44	25.37	25.30	25.23	25.16	25.09	25.03	24.96	24.90	24.83	24.77
Broccoli	13.61	13.59	13.57	13.55	13.53	13.52	13.50	13.49	13.48	13.46	13.45
Carrot	11.30	11.18	11.06	10.95	10.84	10.73	10.62	10.51	10.41	10.31	10.21

Table 4.11: Demand projections on the basis of Share of Important Vegetables of Himachal Pradesh in Markets selected for the Study

(Qty: MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	68395.72	69851.71	71359.03	72919.63	74536.26	76209.7	77943.12	79737.84	81596.94	83522.35	85516.32
Cabbage	74052.49	75169.06	76324.39	77519.18	78755.12	80033.19	81356.09	82724.71	84140.24	85605.66	87121.96
Peas	79307.04	81915.51	84619.02	87422.51	90328.56	93341.58	96464.96	99703.27	103060.9	106541.1	110150.2
Tomato	259778.8	265197.2	270805.7	276610.6	282619.5	288840.1	295278.9	301944.8	314832.3	315992.9	323392
Capsicum	44078.13	45328.48	46623.99	47967.29	49360.33	50803.5	52300.36	53851.28	55459.52	57127.07	58855.26
Garlic	15135.68	15267.63	15402.77	15541.39	15683.49	15829.36	15979.29	16132.41	16290.17	16451.7	16617.87
Beans	41651.86	42293.44	42955.26	43638.14	44341.9	45068.32	45817.98	46590.98	47388.82	48212	49062.34
Potato	315376.7	321741.1	328326.1	335139.9	342191.1	349488.6	357040.8	364857.9	372948.9	381324.6	389995
Broccoli	1483.56	1567.48	1654.82	1745.4	1839.6	1937.18	2038.68	2144.08	2253.5	2367.06	2485.12
Carrot	23301.7	23679.62	24071.02	24475.89	24895.25	25329.06	25778.33	26243.61	26725.54	27224.43	27740.92

Chapter V

Area Allocation and Consumer Awareness

Area under different vegetables in Himachal Pradesh is increasing over the period of time and caters to the vegetables demand of neighbouring States like Punjab, Haryana, Chandigarh and Delhi. Himachal vegetables came into market during summer and rainy seasons when there is a huge deficiency of vegetables in the market. Himachal is the major supplier of vegetables like peas, tomato, beans, cabbage, cauliflower, capsicum etc. and some exotic varieties of vegetables. Presently, about 77 percent of the total area under vegetables is cultivated under peas, tomato, beans, cabbage, cauliflower, cucurbits, and capsicum.

On analysing the demand pattern for the next 10 years, it was found that the demand of some vegetables require more area for their cultivation. The area required under selected vegetables of Himachal Pradesh is presented in Table 5.1.

The analysis of present area and area required under important vegetables of Himachal Pradesh, following trends are observed:

Peas Area under Pea cultivation in the State during 2004-05 was 15441 ha. Peas are mainly grown in Lahaul –Spiti, Kinnaur and Shimla districts, which are purely off-seasonal in nature and fetches very high price in the market. Though the projected area for 2005-06 comes out to be 7996 ha and shows a surplus area of 7445 ha, but this may be attributed to the fact that about 50 percent of the total production of Pea goes to other markets like, Bangalore, Maharashtra, Kolkatta etc. which are not covered under this study and some share out of this may also be consumed within the State. Hence, area under peas should be increased to reap the benefits of their high prices during the season.

Tomato Area under Tomato cultivation in the State during 2004-05 was 8973 ha which is 521 ha surplus over the projected area during 2005-06. Since, there are two crops of Tomato during the year in the State and one crop out of this is facing completion from neighbouring States and other tomato producing States. On the other hand, tomato prices registered fluctuating and declining trend during the last five years. Hence, the surplus area under tomato cultivation must be replaced for the production of other remunerative vegetables.

Beans Area under Beans cultivation during 2004-05 was 2608 ha which is 1404 ha less than the area required during 2005-06. Hence, area Beans must be increased.

Garlic On analysing the present and projected area under Garlic cultivation, it was found that presently there is a surplus area of 1109 ha under Garlic cultivation in the State. Thus, it must be replaced by other vegetables. This is also supported by the fact that Garlic prices are declining over the years and farmers are fetching losses in Garlic cultivation.

Cabbage The area under cultivation of cabbage during 2004-05 was 2889 ha which is 271 ha surplus than required during 2005-06. Further, prices of cabbage are also registered fluctuating trend. Hence, the surplus area must be replaced by other remunerative vegetables.

Cauliflower Area under cauliflower cultivation is 1821 ha less than the present requirement of 3629 ha. Thus, it should be increased to reap the benefit of higher prices as compared to cabbage.

Capsicum The demand of Capsicum is very high in the neighbouring States of Himachal Pradesh. The area under the cultivation of capsicum in the State is 1834 ha, which is 2398 ha less than the area required during 2005-06.

Hence, it must be increased by replacing area under Tomato cultivation especially in Solan district of Himachal Pradesh.

Potato Potato is an important off-seasonal seed crop of Lahaul-Spiti district of Himachal Pradesh. Besides, it is also grown in Kinnaur and high hills of district Shimla. Area under potato cultivation during 2004-05 was 14100 ha. On the basis of demand projections, it was found that 12582 ha additional area is required to meet the potato demand of neighbouring States.

Fig 5.1: Projections for Area Allocation of Important Vegetables of Himachal Pradesh

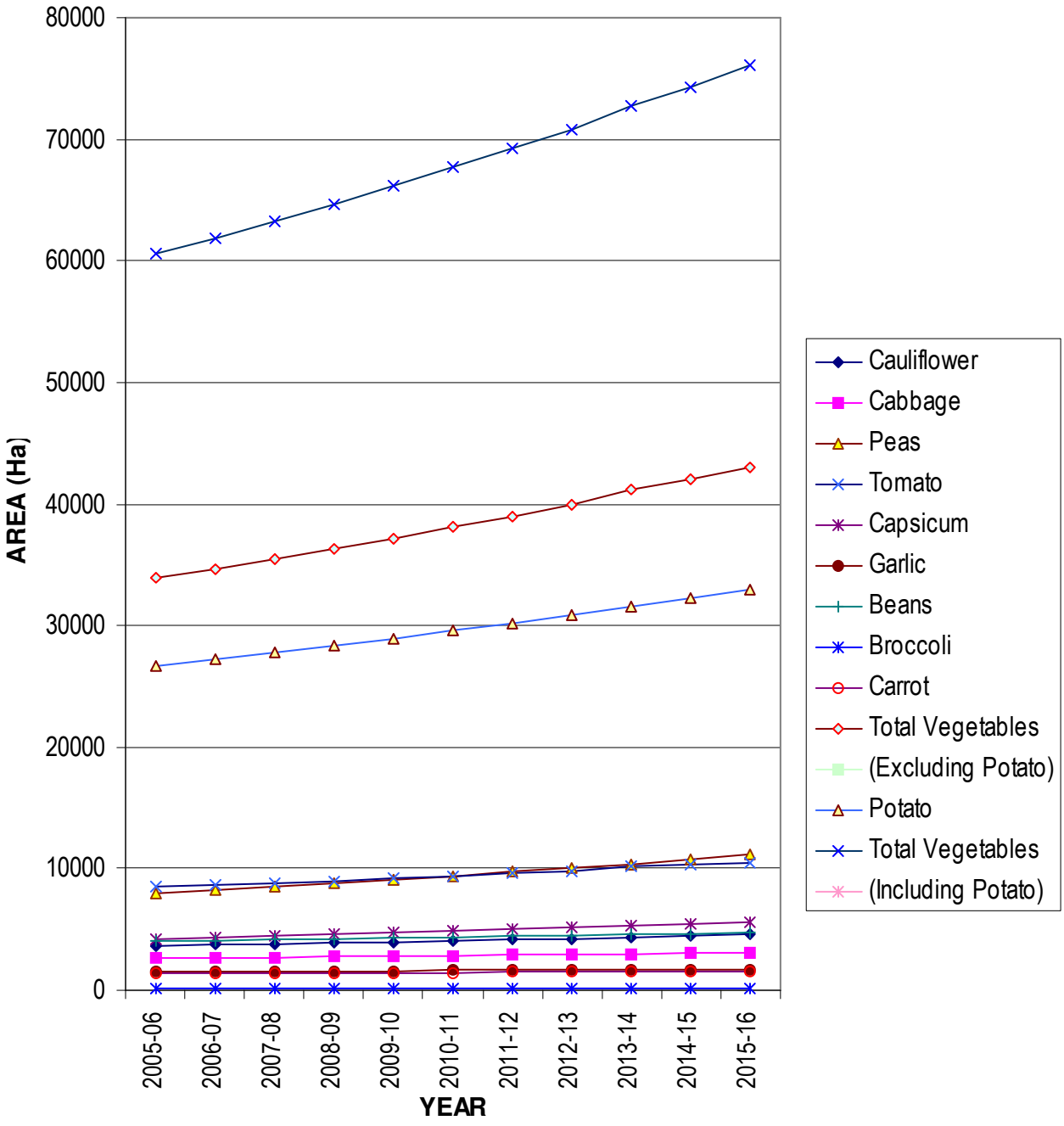


Table 5.1: Projections for Area Allocation for Important Vegetables of Himachal Pradesh

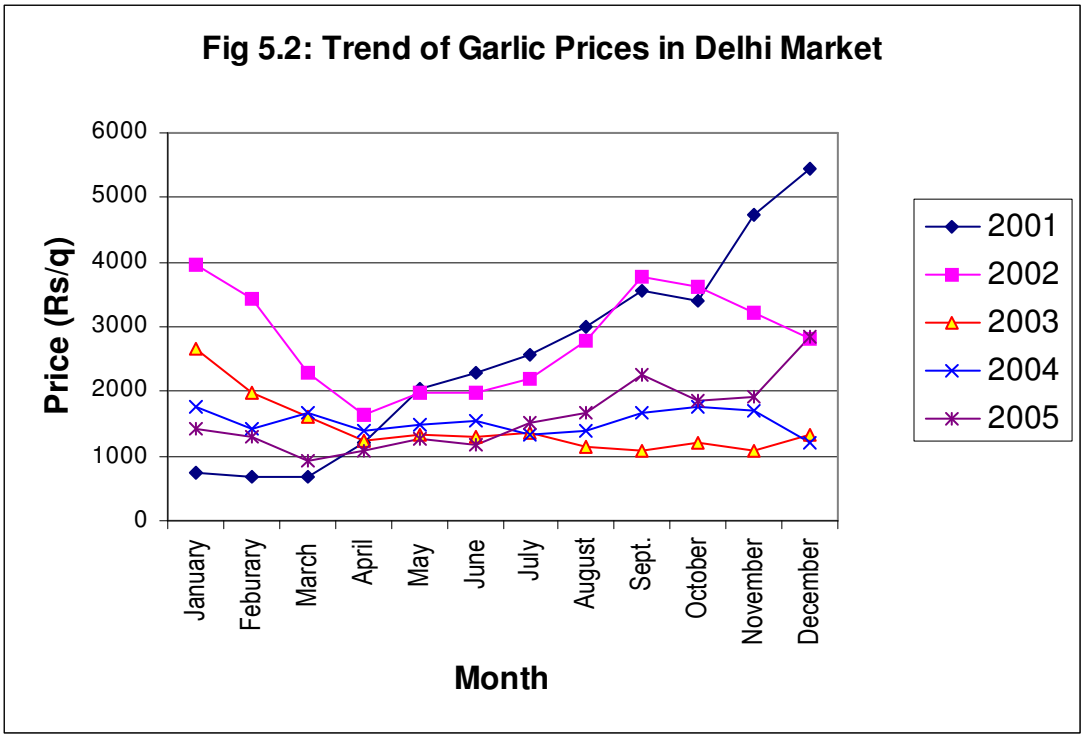
(ha)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	3629	3706	3786	3869	3955	4044	4136	4231	4330	4432	4538
Cabbage	2618	2657	2698	2740	2784	2829	2876	2924	2974	3026	3080
Peas	7996	8259	8532	8815	9108	9411	9726	10053	10391	10742	11106
Tomato	8452	8629	8811	9000	9196	9398	9608	9824	10244	10282	10522
Capsicum	4232	4352	4476	4605	4739	4877	5021	5170	5324	5485	5650
Garlic	1540	1553	1567	1581	1595	1610	1626	1641	1657	1674	1691
Beans	4012	4074	4137	4203	4271	4341	4413	4488	4565	4644	4726
Broccoli	99	104	110	116	123	129	136	143	150	158	166
Carrot	1332	1353	1375	1399	1423	1447	1473	1500	1527	1556	1585
Total Vegetables (Excluding Potato)	33909	34688	35494	36328	37193	38088	39015	39974	41163	41997	43063
Potato	26682	27220	27777	28354	28950	29568	30206	30868	31552	32261	32994
Total Vegetables (Including Potato)	60591	61908	63271	64682	66143	67656	69221	70842	72715	74258	76057

Note: Yield of different vegetables is given in Annexure I

Table 5.2: Area under important vegetables in Himachal Pradesh *(ha)*

	Actual					Projected	Deficit
Vegetable	**2000-01**	**2001-02**	**2002-03**	**2003-04**	**2004-05 (x)**	**2005-06 (y)**	**Area (x-y)**
Peas	9400	9830	9505	14789	15441	7996	7445
Tomato	6000	7035	9000	9013	8973	8452	521
Beans	2170	2240	1910	2444	2608	4012	-1404
Garlic	NA	NA	2898	2725	2649	1540	1109
Cabbage	2150	2200	2195	2790	2889	2618	271
Cauliflower	1340	1370	1450	1648	1808	3629	-1821
Capsicum	1630	1650	1420	1642	1834	4232	-2398
Total (A)	**22690**	**24325**	**28378**	**35051**	**36202**	**32479**	**3723**
Potato (B)	11951	12800	12540	13705	14100	26682	-12582
(A+B)	**34641**	**37125**	**40918**	**48756**	**50302**	**59161**	**-8859**
% (A)	*70.91*	*71.23*	*80.57*	*79.17*	*78.34*		
% (A+B)	*78.82*	*79.07*	*85.67*	*84.09*	*83.40*		



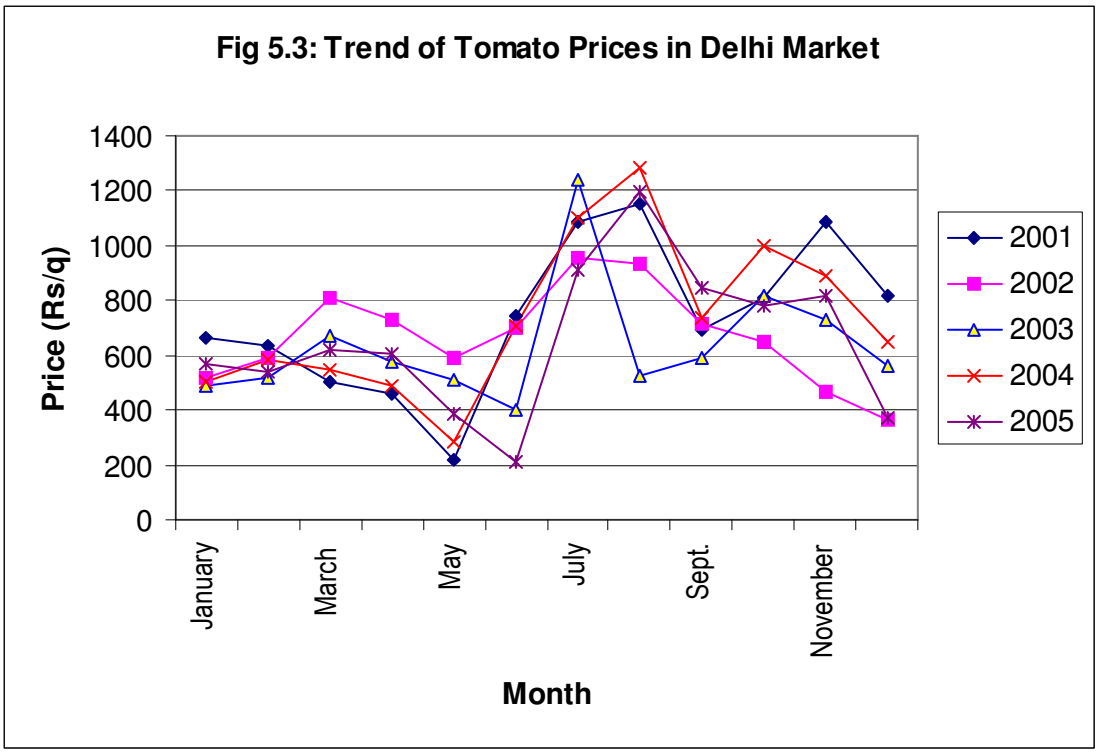


Fig 5.3: Trend of Tomato Prices in Delhi Market
Price (Rs/q)
1400
1200
1000
800
600
400
200
0
January
March
May
July
Sept.
November
Month
2001
2002
2003
2004
2005

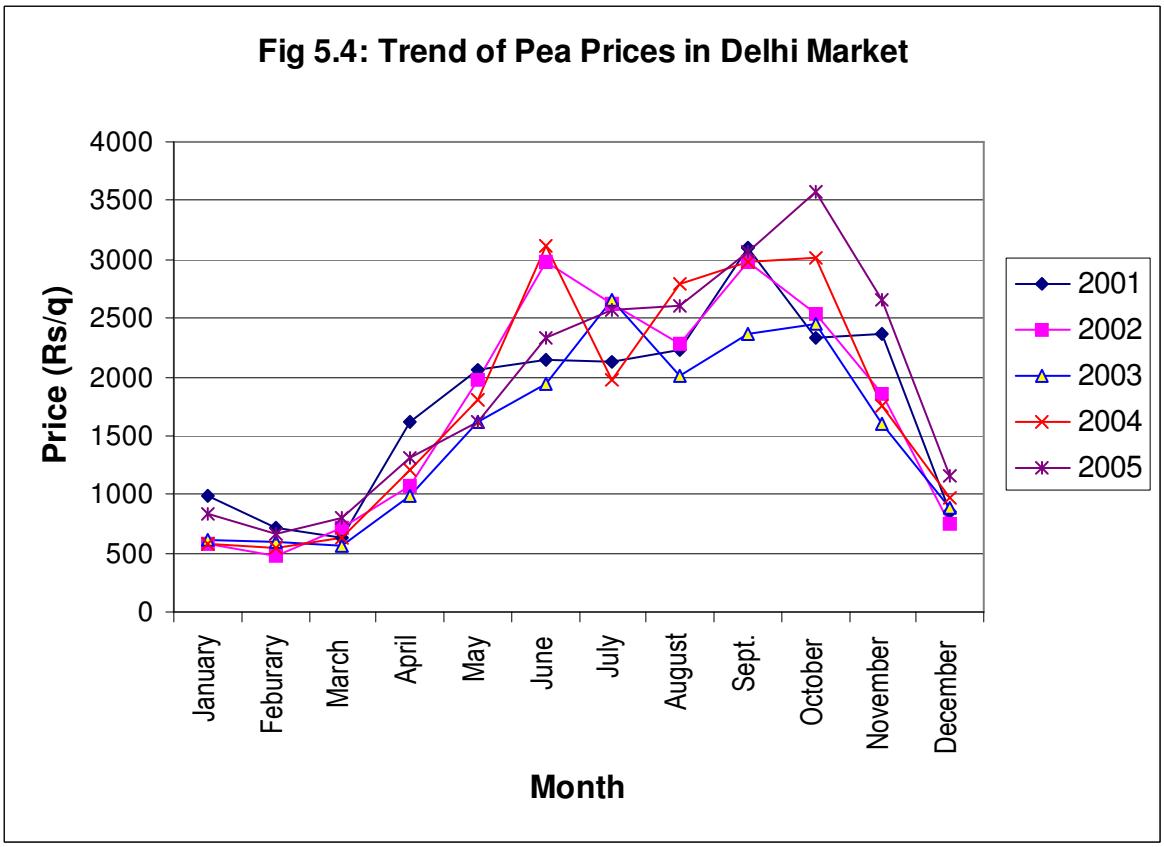


Fig 5.4: Trend of Pea Prices in Delhi Market
Price (Rs/q)
4000
3500
3000
2500
2000
1500
1000
500
0
January
Feburary
March
April
May
June
July
August
Sept.
October
November
December
Month
2001
2002
2003
2004
2005

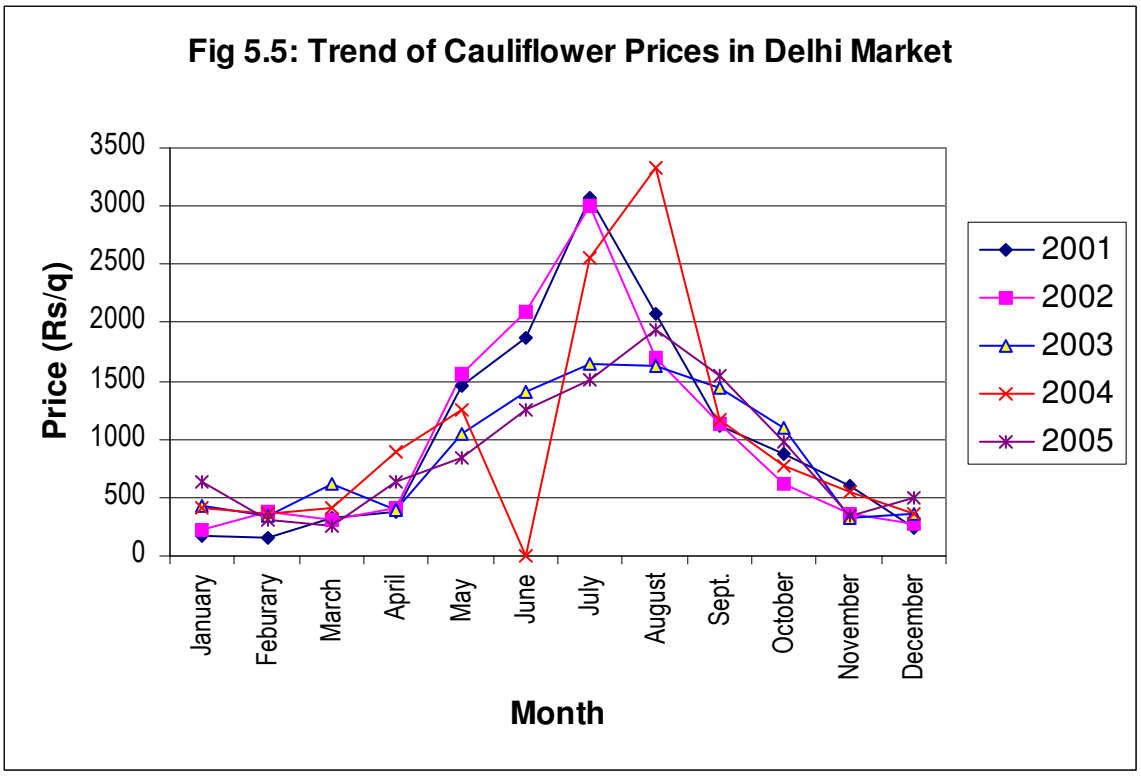


Fig 5.5: Trend of Cauliflower Prices in Delhi Market
Price (Rs/q)
3500
3000
2500
2000
1500
1000
500
0
January
Feburary
March
April
May
June
July
August
Sept.
October
November
December
Month
2001
2002
2003
2004
2005

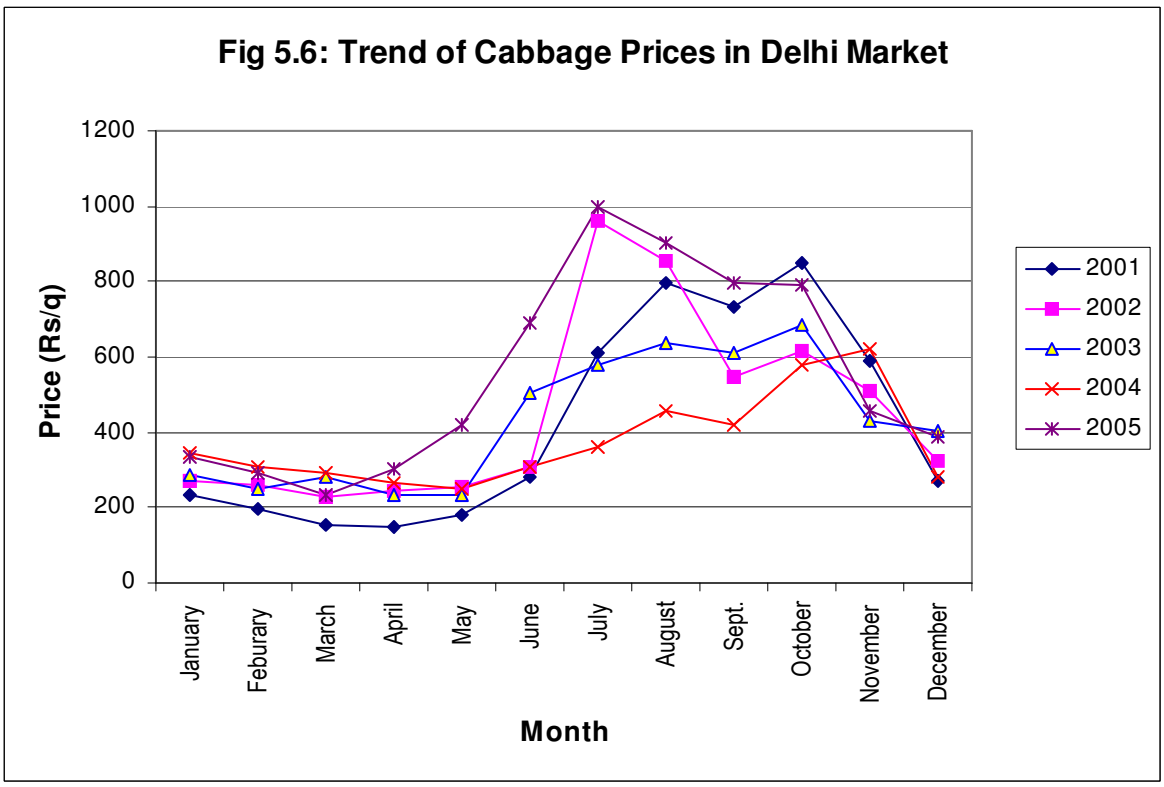
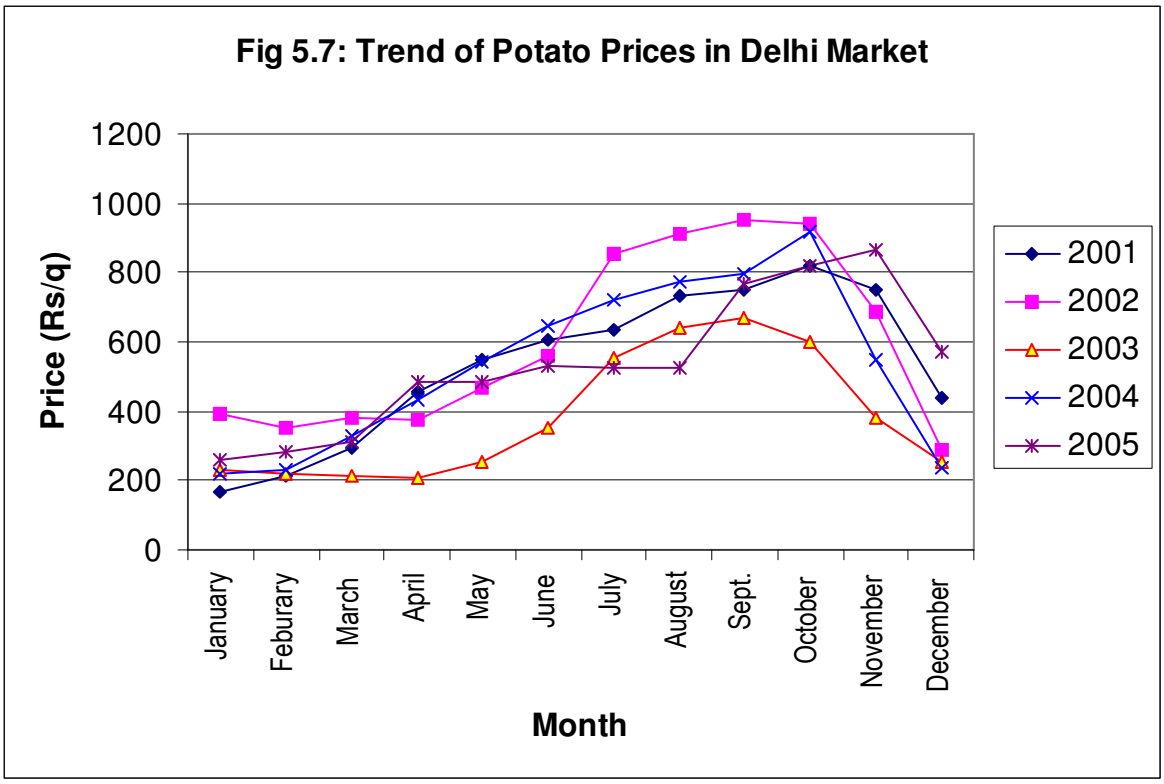


Fig 5.6: Trend of Cabbage Prices in Delhi Market
Price (Rs/q)
1200
1000
800
600
400
200
0
January
Feburary
March
April
May
June
July
August
Sept.
October
November
December
Month
2001
2002
2003
2004
2005



Consumer Awareness

During summer and rainy season the arrival of is vegetables from plains reduced manifold in the markets. During this period availability of hill cabbage, cauliflower, peas, tomato, capsicum etc. to the consumer is showing monopoly in the market. All these vegetables are grown in hill areas of Himachal Pradesh and Uttaranchal. Majority of consumers in these markets are aware about the vegetables of Himachal Pradesh as revealed from Table 5.3. The awareness about exotic vegetables is very less.

Table 5.3: Consumer Awareness about Himachal/ Hill Vegetables in different Markets

(Percent)

Vegetables	Markets			
	Delhi	Chandigarh	Haryana	Punjab
Cauliflower	79	62	50	48
Cabbage	73	63	52	54
Peas	82	79	71	80
Tomato	42	46	51	60
Capsicum	80	69	65	64
Garlic	-	-	-	-
Beans	35	41	30	25
Potato	80	81	80	81
Broccoli	43	54	40	42
Carrot	48	37	25	24

Response for the preference of Himachal vegetables among all groups of consumers on the basis of different attributes like freshness, colour, taste, price, organic produce, disease free and whether cold stored are revealed in Table 5.4 to Table 5.7. On the analysis of these tables it was found that Himachal or Hill vegetables are mainly preferred by the consumers for their freshness and taste. Hence, this a good reason to increase market size of Himachal vegetables.

Table 5.4: Attributes on which Himachal/ Hill vegetables are preferred by Consumers in Delhi Market

(Percent)

Vegetables	Attributes						
	Freshness	Colour	Taste	Price	Organic produce	Disease free	Not cold stored
Cauliflower	57	0	34	0	0	6	4
Cabbage	52	0	3	0	0	3	1
Peas	62	0	42	0	8	32	2
Tomato	41	4	9	0	0	0	3
Capsicum	65	31	34	0	0	13	3
Garlic	12	0	8	0	0	15	0
Beans	22	0	29	0	13	1	0
Potato	37	0	72	0	0	9	43
Broccoli	39	15	31	0	2	25	0
Carrot	38	30	35	0	20	0	0

Table 5.5: Attributes on which Himachal/ Hill vegetables are preferred by Consumers in Chandigarh Market

(Percent)

Vegetables	Attributes						
	Freshness	Colour	Taste	Price	Organic produce	Disease free	Not cold stored
Cauliflower	62	18	41	0	7	11	0
Cabbage	59	0	17	0	4	8	0
Peas	71	0	63	0	11	18	6
Tomato	55	12	24	0	8	16	0
Capsicum	70	42	59	0	15	18	0
Beans	28	0	56	0	10	0	0
Potato	40	0	75	0	2	22	50
Carrot	31	15	30	0	11	0	8

Table 5.6: Attributes on which Himachal/ Hill vegetables are preferred by Consumers in Punjab Market

(Percent)

Vegetables	Attributes						
	Freshness	Colour	Taste	Price	Organic produce	Disease free	Not cold stored
Cauliflower	48	15	63	0	0	8	0
Cabbage	50	11	54	0	0	15	0
Peas	64	9	60	0	12	19	0
Tomato	52	22	18	0	9	27	0
Capsicum	50	31	46	0	10	11	0
Beans	31	0	30	0	8	0	0
Potato	62	0	86	0	15	24	71
Broccoli	53	31	42	0	40	40	0
Carrot	40	40	32	0	15	0	0

Table 5.7: Attributes on which Himachal/ Hill vegetables are preferred by Consumers in Haryana Market

(Percent)

Vegetables	Attributes						
	Freshness	Colour	Taste	Price	Organic produce	Disease free	Not cold stored
Cauliflower	61	17	53	0	8	15	0
Cabbage	70	8	62	0	11	18	0
Peas	63	0	80	0	25	10	0
Tomato	53	28	40	0	0	21	0
Capsicum	50	30	45	0	10	17	0
Beans	34	4	60	0	15	15	0
Potato	55	0	80	0	10	20	85
Broccoli	50	30	70	0	25	20	0
Carrot	30	25	50	0	20	5	0

Chapter VI

Conclusions and Recommendations

During the course of study, it was observed that during summer and rainy season, though the prices of vegetables remain high but the consumers are forced to purchase even at these prices. After the mid of November there seems a glut of vegetable arrival in the market especially from West Bengal, Maharashtra, Gujarat, Punjab and Haryana. Summer and Rainy season are the major periods for off-season vegetables of Himachal Pradesh. Hence, by increasing the area under cultivation of vegetables or by increasing their productivity the vegetable growers of Himachal can reap the benefits of growing demand of neighbouring markets.

Himachal Pradesh has a potential of becoming vegetable bowl of the country because the State has diverse agro-climatic conditions and scope of growing off-season vegetables is also very high. Most of the farmers of Himachal Pradesh are marginal and many of them recognize that the potential income from growing vegetables is higher than that of growing cereals. They also recognise that since vegetables are perishable, risks associated with growing vegetables are also very high.

Demand of exotic vegetables like lettuce, asparagus, celery, swiss chard, parsley, Brussels's sprouts, broccoli, red cabbage, etc. among the mid and high income population of Delhi is also very high. Presently, the supply of these vegetables is very limited. Majority of these vegetables are imported from other countries and sold at a very high price. Thus these vegetables are affordable to five star hotels and large restaurants. Changing life style of mid and high income class tends to include continental cuisine in their daily diet. Hence, demand for these vegetables would increase in near future.

To achieve the desired results following steps should be taken:

1. Area under vegetable cultivation should be increased in the State.

2. Though the demand of exotic vegetables like, Broccoli, Brussels Sprouts, Celery, Parsley, Red Cabbage, Yellow and Red Capsicum etc. is not very high in the market, but it is mainly due to lack of awareness to the consumers and their very high prices. Hence area under these vegetables must be increased immediately to bridge the gap between demand and supply.

3. There should be an advertising campaign for Himachal vegetables especially exotic vegetables to get due share in the market.

4. Vegetable growers should organize themselves into farmers' cooperatives and link themselves with the district cooperatives or State cooperatives.

5. MIS should be strengthened for the timely availability of information to the farmers so that they can plan their schedule for growing vegetables.

6. To avoid crises and risks, early warning systems and risk relief measures need to be in place to ensure economic security.

ANNEXURE I

Yield of different vegetables taken to project the Area

Vegetable	Yield (MT/ha)
Cauliflower	18.846
Cabbage	28.29
Peas	9.918
Tomato	30.734
Beans	10.382
Carrot	17.5
Garlic	9.83
Capsicum	10.416
Broccoli	15.0
Potato	11.82

ANNEXURE II

Exotic vegetables of Himachal Pradesh

Vegetables	Time of Growing			Time of Availability
	High Hills	Mid Hills	Low Hills	
Asparagus	March, November	March-April (seeds) Oct-November	-	March –June
Celery	March-April	August-September	September-October	September-October March-April
Parsley	March-April	August-September	October	May-June Nov.-January
Broccoli	March-April	August-September	September-October	September-October February-March
Brussel's Sprouts	February-April	August-September	October	September-October February-March
Red Cabbage	April- May	August-September	October-November	September-October February-March
Globe Artichoke	-	March-May	June-July August-October	April-May September-October
Leek	March- April	August-October	-	March-April
Swiss Chard	March-June	September	October	February, August- September

Source: Glimpses of Agriculture in Himachal Pradesh, Dept. of Agriculture, HP

ANNEXURE III

Table: Share of Himachal Vegetables in different Consuming Markets

Percent

Market→	Delhi			Chandigarh			Haryana			Punjab			Overall		
Season→ Vegetable↓	Summer	Rainy	Winter	Summer	Rainy	Winter	Summer	Rainy	Winter	Summer	Rainy	Winter	Summer	Rainy	Winter
Cauliflower	20	70	-	30	85	-	30	75	-	35	85	-	28.75	78.75	-
Cabbage	20	70	5	25	85	5	20	70	-	20	75	-	21.25	75.0	2.5
Peas	30	80	5	35	90	5	20	80	-	25	80	-	27.5	82.5	2.5
Tomato	20	80	-	30	90	5	20	80	-	25	85	-	23.75	83.75	-
Capsicum	-	80	-	-	90	5	-	75	5	-	80	5	-	81.25	3.75
Garlic	75	-	-	80	-	-	70	-	-	65	-	-	72.5	-	-
Beans	10	70	5	20	90	5	10	80	5	20	80	5	15.0	80.0	5.0
Potato	20	60	5	25	80	-	15	60	-	10	50	-	17.5	62.5	1.25
Broccoli	40	80	10	-	-	-	-	-	30	-	-	20	10.0	20.0	15.0
Carrot	50	60	-	75	75	2	-	-	-	50	65	-	43.75	50.0	0.5

Note: Season wise projections made for summer, rainy and winter season depend upon the availability of these vegetables in the Markets and not on the basis of their sowing season. Span of these seasons are different for different vegetables and demand projections for these vegetables are estimated accordingly

ANNEXURE IV

Table 1 (A): Demand projections for Delhi

Season: Summer (Qty:MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	12751.2	13326	13922.4	14541.2	15184	15850.8	16543.2	17262	18008	18782.4	19586
Cabbage	11709.6	12252.8	12816.4	13402	14009.6	14640.4	15295.2	15974.8	16680.4	17412.8	18173.2
Peas	19139.2	20224	21350.8	22521.6	23737.2	25000.4	26312	27674.8	29090	30559.6	32086
Tomato	50226.8	51948.8	53734	55585.2	57504.4	59494.8	61558.4	63698.4	65917.2	68218.4	70604.8
Capsicum	22824.8	23843.2	24900	25996.8	27135.6	28317.2	29544	30817.2	32138.8	33510.8	34934.4
Garlic	7001.6	6990	6976.8	6961.6	6944.8	6926	6905.2	6882	6857.2	6829.6	6800
Beans	7396	7313.2	7225.6	7133.6	7036	6933.2	6824.8	6710.8	6590.8	6464.8	6332
Potato	135347.6	139529.2	143862.8	148354	153008	157831.6	162830.8	168012.4	173383.2	178950.4	184721.2
Broccoli	5358.8	5709.2	6073.2	6451.6	6844.8	7253.2	7678	8118.8	8577.2	9053.2	9547.6
Raddish	10865.2	11253.2	11655.2	12072.4	12505.2	12953.6	13418.8	13901.6	14402	14920.8	15459.2
Carrot	12436	12912.4	13406.8	13920	14452	15004	15576.4	16170.4	16786.4	17426	18089.2
Onion	45192	46636.8	48134	49686	51294.8	52962.4	54690.8	56482.8	58340.4	60266	62262.8
Pumpkin	53855.6	55426.4	57054	58740	60486.8	62296.8	64172	66115.2	68128.8	70215.2	72377.6
Gourd	54565.6	56298.4	58094	59955.2	61884.4	63884	65956.8	68105.2	70332.8	72641.6	75035.6
B. Gourd	23765.6	24429.2	25116.4	25828.4	26566	27330	28121.2	28940.8	29790	30670	31581.6
Cucumber	124410	128926.4	133610.8	138468.8	143506.8	148732.4	154152.4	159773.6	165604.4	171652	177924.4
Brinjal	26876	27698.8	28551.2	29434.8	30350	31298.8	32282	33301.2	34357.6	35452	36586.8
L. Finger	49540.4	51182	52883.6	54647.6	56476.4	58372.4	60338.4	62376.4	64489.6	66680.4	68952.4
Palak	6732.8	6787.2	6842.4	6899.2	6956.8	7016	7076.4	7137.6	7200.8	7265.2	7330.8
Ginger	4409.2	4129.2	3836.8	3531.6	3212.8	2880	2532.8	2170.4	1792	1398	986.8

Table 1 (B): Demand projections for Delhi

Season: Rainy **(Qty:MT)**

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	10894.8	11437.6	12000.8	12586	13193.6	13824.4	14479.6	15159.6	15866	16599.2	17360.4
Cabbage	9845.2	10400	10976.4	11574.8	12196.8	12842.4	13513.2	14210	14933.6	15685.2	16465.6
Peas	19692	20692.4	21731.6	22810.4	23930.8	25094.4	26302.4	27556.8	28859.2	30211.6	31615.6
Tomato	48823.6	50621.6	52486.4	54420.4	56426.8	58507.6	60665.6	62904.4	65226.4	67635.2	70133.6
Capsicum	20363.6	21351.2	22376.4	23440.8	24546.4	25693.6	26885.2	28122	29406	30739.2	32123.2
Garlic	9072	8961.6	8845.2	8722	8592.4	8455.6	8312	8160.4	8001.2	7834	7658
Beans	10132.8	10044	9949.6	9849.2	9743.2	9631.2	9512.8	9387.6	9255.6	9116	8969.6
Potato	143388.8	147730.4	152229.2	156890.4	161720.8	166726.4	171914	177290.4	182862.4	188637.6	194623.2
Broccoli	2263.2	2382.8	2506.8	2635.6	2769.6	2908.4	3052.4	3202.4	3358	3519.6	3687.2
Raddish	9393.2	9792	10205.6	10635.2	11080.8	11543.2	12023.2	12521.6	13038.4	13574.8	14131.6
Carrot	6634	6974.8	7329.2	7696.8	8078.4	8474.8	8886.4	9314	9758	10218.8	10697.2
Onion	47324.4	49103.2	50948.4	52862	54847.2	56906.8	59042.8	61258.8	63557.2	65942	68415.6
Pumpkin	60949.6	62991.2	65107.6	67302	69576.8	71935.2	74380.8	76916.4	79545.2	82271.2	85098
Gourd	56440.8	58345.2	60319.2	62366	64488	66688	68969.2	71334.4	73787.2	76330.4	78967.6
B. Gourd	21721.2	22332	22964.4	23619.6	24298	25000.8	25728.8	26483.2	27264.8	28074.4	28913.6
Cucumber	116907.2	121812.8	126904	132187.2	137669.6	143359.2	149263.2	155390.4	161748.4	168346.8	175193.6
Brinjal	26070.8	26879.6	27718	28586.4	29486.8	30419.6	31386.8	32388.8	33428	34504.8	35621.2
L. Finger	47484	49199.6	50979.2	52824.8	54738.8	56724	58782.8	60918	63132.8	65430	67812.8
Palak	9528.4	10058.4	10608.8	11180.8	11774.8	12391.6	13032.4	13698	14389.2	15106.8	15852.4
Ginger	2601.6	2475.6	2344.4	2207.2	2063.6	1914	1757.2	1594	1423.6	1245.6	1060

Table 1 (C): Demand projections for Delhi

Season: Winter (Qty:MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	38504.4	39481.6	40493.6	41540.8	42624.8	43747.2	44909.2	46112	47358	48648	49984
Cabbage	36780	37653.6	38556.8	39491.6	40459.2	41460	42496	43568.4	44678	45826.8	47016.4
Peas	32477.2	33262.4	34074.8	34915.6	35785.6	36686	37618.4	38583.2	39581.6	40615.6	41686.4
Tomato	48998	50571.6	52202.8	53893.2	55645.2	57461.6	59344.8	61296.8	63320	65418	67592.8
Capsicum	2100.4	2234.4	2373.2	2518	2668	2824	2986.4	3154.8	3329.6	3511.2	3700
Garlic	9136	9377.6	9627.6	9886.4	10154.4	10432	10719.6	11017.2	11325.6	11645.2	11976
Beans	10772.8	10812.4	10852.4	10891.6	10931.2	10970	11008.8	11047.2	11085.6	11123.2	11160.8
Potato	153738.8	157246.8	160874.8	164627.6	168509.6	172526	176681.6	180981.6	185431.2	190036.4	194802.8
Broccoli	633.2	679.6	728.4	778.8	831.2	885.6	942.4	1001.2	1062.4	1125.6	1192
Raddish	36410	37574.8	38782	40033.2	41330	42674.4	44068	45512.4	47010	48562.4	50172
Carrot	40154.4	41208.8	42300.8	43431.2	44602	45814	47069.2	48368.8	49715.2	51109.6	52554
Onion	44685.2	46262	47896.8	49592.4	51350.4	53174	55064.8	57025.6	59059.6	61168.4	63356
Pumpkin	6602.4	6895.2	7199.2	7514.4	7841.6	8181.6	8534	8900	9280	9674	10083.2
B. Gourd	397.2	370	341.6	312.4	281.6	249.6	216	181.2	144.8	106.8	67.2
Cucumber	987.6	1014	1041.6	1070.4	1099.6	1130.4	1162	1194.8	1228.8	1264	1300.4
Brinjal	19346.4	19692.4	20049.6	20418	20798.8	21192	21598	22017.2	22450.4	22898	23360.4
L. Finger	5180.4	4914	4635.2	4344.4	4040.4	3722.8	3391.2	3045.2	2684	2307.2	1914
Palak	49003.2	50680.4	52419.6	54222.8	56092.4	58031.2	60041.2	62125.6	64287.2	66528.4	68852.8
Ginger	10654.4	10932.4	11220.4	11518.4	11826.8	12146.4	12477.2	12819.6	13174.4	13542	13922.8

Table 2 (A): Demand projections for CHANDIGARH

Season: Summer (Qty:MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	2302	2308	2313.6	2319.6	2325.2	2330.8	2336	2341.6	2346.8	2351.6	2356.4
Cabbage	1962.8	1961.6	1960	1958	1956	1953.2	1950.4	1946.8	1942.8	1938.4	1933.6
Peas	1954.4	1958	1961.2	1964.4	1967.6	1970.4	1973.2	1975.6	1978	1980	1982
Tomato	3928.8	3907.2	3884	3859.2	3832.8	3804.8	3774.8	3742.8	3708.8	3673.2	3634.8
Capsicum	1807.6	1790	1771.6	1752	1731.2	1709.2	1686	1661.6	1636	1608.8	1580.4
Garlic	655.6	646.8	638	628.4	618.4	608	596.8	585.2	572.8	560	546.4
Beans	1917.2	1892	1865.6	1837.2	1807.6	1776.4	1743.6	1709.2	1672.8	1634.8	1594.4
Potato	6722	6637.2	6547.2	6452.4	6352.4	6247.2	6136	6019.2	5896.4	5767.6	5631.6
Raddish	3338.8	3358	3378	3398.4	3418.8	3440	3461.2	3483.2	3505.2	3528	3551.2
Carrot	1939.6	1967.2	1995.6	2025.2	2055.6	2087.2	2119.6	2153.6	2188.4	2224.4	2261.6
Onion	4598.4	4607.2	4615.2	4622.8	4630.4	4637.6	4644	4650.4	4656	4661.6	4666.4
Pumpkin	2209.2	2237.2	2266	2296	2326.8	2358.8	2391.6	2425.6	2460.8	2497.2	2534.8
Gourd	2130	2160.8	2192.8	2226	2260	2295.2	2331.6	2369.6	2408.4	2448.8	2490.8
B. Gourd	1793.6	1814.8	1836.4	1859.2	1882	1906	1930.8	1956.4	1982.4	2009.6	2037.6
Cucumber	3028	3148.8	3274.4	3405.2	3540.8	3682.4	3829.2	3982	4141.2	4306.4	4478.4
Brinjal	1671.2	1673.6	1676	1678	1680	1682	1683.6	1685.2	1686.4	1687.6	1688.8
L. Finger	1768.4	1802	1836.8	1872.8	1910.4	1949.2	1989.6	2031.2	2074.4	2119.2	2165.6
Palak	1975.2	1991.2	2007.6	2024.4	2042	2059.6	2078	2096.8	2116	2135.6	2156
Ginger	550.8	563.2	576	589.6	603.2	617.6	632.8	648.4	664.4	681.2	698.4

Table 2 (B): Demand projections for CHANDIGARH

Season: RAINY (Qty:MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	1974	1989.6	2006	2022.4	2039.6	2056.8	2074.8	2093.2	2112	2131.6	2151.2
Cabbage	1939.2	1966	1994	2023.2	2053.2	2084	2116	2149.2	2183.2	2218.4	2255.2
Peas	2055.6	2072	2088.4	2105.6	2123.2	2140.8	2159.2	2178	2197.6	2217.2	2237.6
Tomato	4283.2	4268	4251.6	4233.6	4214.4	4194	4171.6	4147.6	4122.4	4094.8	4066
Capsicum	1814	1808.8	1802.8	1796.4	1789.6	1782	1774	1765.2	1756	1746	1735.2
Garlic	486.4	481.6	476.8	471.6	466	460	454	447.2	440.4	433.2	425.2
Beans	1644.8	1642	1638.8	1635.6	1631.6	1627.2	1622.4	1617.2	1611.6	1605.6	1598.8
Potato	8304.8	8220.8	8131.6	8037.2	7937.6	7832.4	7721.2	7604	7480.4	7350.4	7213.6
Broccoli	54.8	62	70	78	86.4	94.8	104	113.6	123.2	133.6	144.4
Raddish	3847.6	3804	3758	3709.6	3658	3604	3546.8	3486.8	3423.2	3356.8	3286.4
Carrot	1927.2	1941.2	1955.6	1970	1985.2	2000.4	2016	2032	2048.8	2065.6	2082.8
Onion	4234.4	4214.4	4192.8	4169.6	4145.2	4118.4	4090	4060	4028	3993.6	3957.6
Pumpkin	1991.6	1983.6	1974.8	1965.6	1955.2	1944.4	1932.8	1920.4	1907.2	1892.8	1878
Gourd	2709.2	2718.4	2728	2737.2	2746.4	2756	2765.2	2774.4	2784	2793.2	2802.4
B. Gourd	1455.6	1460	1464.4	1468.8	1473.2	1477.6	1482	1486	1490.4	1494.4	1498.4
Cucumber	1974.4	2017.6	2062.4	2109.2	2157.6	2207.6	2259.6	2313.6	2369.6	2427.6	2488
Brinjal	1918.8	1930	1941.2	1953.2	1964.8	1977.2	1989.2	2002	2014.8	2028	2041.2
L. Finger	1660.8	1676	1692	1708	1724.4	1741.6	1759.2	1777.2	1795.6	1814.8	1834.4
Palak	1642.8	1656	1670	1684	1698.8	1713.6	1728.8	1744.8	1760.8	1777.2	1794.4
Ginger	533.2	536.4	540	543.6	547.6	551.2	555.2	559.2	563.2	567.2	571.6

Table 2 (C): Demand projections for CHANDIGARH

Season: WINTER (Qty:MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	2034	2035.6	2036.8	2038	2038.8	2039.6	2040	2040	2039.6	2039.2	2038
Cabbage	2033.2	2058.8	2084.8	2112	2140.4	2169.2	2199.2	2230	2262	2294.8	2328.8
Peas	1789.2	1804.4	1820.4	1836.8	1853.2	1870.4	1888	1906	1924.8	1944	1963.6
Tomato	3500.4	3510	3519.6	3529.2	3538.4	3547.6	3556.8	3565.6	3574.4	3583.2	3591.6
Capsicum	853.2	826.4	798.4	769.2	738.4	706.4	672.8	637.6	600.8	562	521.6
Garlic	318	322	326	330	334.4	339.2	343.6	348.4	353.6	358.8	364
Beans	894.4	864	832.4	799.2	764.4	727.6	689.6	649.6	607.6	564	518
Potato	8136.4	8025.6	7908.4	7785.2	7654.8	7518	7374	7222.4	7062.8	6895.6	6719.6
Raddish	3643.2	3635.6	3627.2	3617.6	3607.2	3596	3583.6	3570	3555.2	3539.2	3522.4
Carrot	1772.8	1793.2	1813.6	1835.2	1857.2	1879.6	1903.2	1927.2	1952.4	1978	2004.4
Onion	1475.6	1523.2	1572.4	1623.6	1676.8	1732	1789.6	1849.2	1911.2	1976	2042.8
Pumpkin	1718.8	1712.8	1705.6	1698.4	1690	1681.6	1672	1662	1651.6	1640	1628
Gourd	1222.8	1183.2	1142	1098.8	1053.6	1006.4	956.8	904.8	850.4	793.2	733.6
B. Gourd	848.8	822	794	764.4	733.6	700.8	667.2	631.6	594.4	555.2	514.4
Cucumber	2530	2549.6	2569.6	2590	2611.2	2632.8	2654.8	2677.6	2700.8	2724.8	2749.6
Brinjal	1448.4	1405.2	1360	1312.8	1263.2	1211.2	1156.8	1099.6	1040	977.2	912
L. Finger	1114.8	1082.4	1048.8	1013.2	976	937.2	896.4	853.6	808.8	762	712.8
Palak	1521.6	1487.2	1451.2	1413.6	1374	1332	1288.4	1242.4	1194.4	1144.4	1091.6
Ginger	570.8	567.6	564	560	556	552	547.2	542.4	537.2	532	526

Table 3 (A): Demand projections for HARYANA

Season: SUMMER (Qty:MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	21968	22265.6	22573.2	22891.2	23219.6	23559.2	23910	24272.4	24647.2	25034.8	25435.2
Cabbage	27245.2	27593.6	27953.2	28324.8	28708.8	29105.2	29514.8	29938.4	30375.6	30828	31295.2
Peas	24357.6	25074	25816	26584.4	27380.4	28205.2	29059.6	29944.4	30861.6	31811.2	32795.6
Tomato	104706.8	105725.2	106775.2	107858.4	108975.6	110127.6	111316.4	112542.8	113808.8	115114.8	116463.2
Capsicum	17760	18094	18439.2	18796.8	19166.8	19549.6	19945.2	20355.2	20779.2	21218	21672.4
Garlic	7099.6	7157.2	7216	7277.2	7340	7404.4	7471.2	7539.6	7610.4	7683.2	7758.4
Beans	13452.4	13789.2	14138	14499.2	14873.2	15260.4	15661.6	16076.8	16507.2	16952.4	17414
Potato	112079.2	112648	113230.4	113827.6	114439.6	115067.2	115710.8	116370.8	117048.4	117743.2	118456.8
Onion	60866	61757.6	62678.8	63631.2	64615.6	65633.2	66684.8	67772.8	68897.2	70060	71262.8
Pumpkin	53755.6	53547.6	53327.6	53095.6	52850.8	52593.2	52322	52036.8	51737.2	51422.4	51092
Gourd	49854.8	49751.6	49640.8	49522.4	49396	49261.2	49118	48965.6	48804	48633.2	48452
B. Gourd	45662.8	45920.4	46184.8	46456	46734.4	47020	47313.6	47614.8	47924.4	48242.4	48569.6
Cucumber	392957.2	397955.6	403118	408450	413957.6	419647.6	425526.8	431601.2	437878.4	444366	451071.2
Brinjal	31844	31787.2	31725.6	31659.6	31588.8	31513.2	31432.4	31346	31254.8	31157.6	31054.4
L. Finger	37614.8	37487.6	37353.6	37211.2	37061.2	36902.8	36735.6	36559.6	36374.4	36179.2	35974.4
Palak	11411.6	11599.6	11793.6	11994.4	12202.4	12417.2	12639.2	12869.2	13106.8	13352.8	13607.2
Ginger	1245.6	1252.4	1259.6	1267.2	1274.4	1282	1290	1298	1306.4	1315.2	1324

Table 3 (B): Demand projections for HARYANA

Season: RAINY (Qty:MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	15542	15940.8	16354	16781.6	17224.8	17683.6	18158.8	18650.8	19160.4	19688.4	20235.2
Cabbage	17751.2	18003.2	18264	18533.2	18811.2	19098.8	19396.4	19703.6	20021.2	20350	20689.6
Peas	17958.8	18672.4	19411.6	20178	20972.4	21795.6	22648.8	23533.2	24450	25400	26384.8
Tomato	106060	108158	110329.2	112576	114900.8	117306.8	119796.8	122373.6	125041.2	127802	130659.6
Capsicum	8698	9043.2	9400.8	9771.6	10156	10554.4	10967.6	11395.2	11838.8	12298.8	12775.2
Garlic	7752	7806.8	7863.2	7921.2	7980.8	8042.4	8105.6	8170.4	8237.6	8306.4	8377.6
Beans	14453.2	14788	15134.8	15494	15865.6	16250.8	16649.2	17061.6	17488.8	17931.2	18389.6
Potato	152012	154360.8	156788.8	159298.8	161894.4	164577.6	167352.4	170222	173189.6	176258.8	179433.6
Onion	94716.8	96118	97566	99062.8	100610	102209.6	103863.2	105572.8	107340.8	109169.2	111060
Pumpkin	32689.6	32626.8	32560	32488	32410.8	32328.8	32241.2	32148	32049.2	31944	31832.8
Gourd	40630	40393.2	40144.8	39884	39610.4	39323.6	39022.8	38708	38378.4	38033.6	37672.8
B. Gourd	36055.6	35695.6	35319.2	34926.4	34515.6	34086.8	33639.2	33172.4	32685.2	32176.8	31646.8
Cucumber	265114.8	267494.8	269947.6	272476	275082	277768.4	280538.8	283396	286342.4	289382.4	292518.4
Brinjal	30605.6	30734	30865.2	30999.2	31136	31276	31383.2	31565.6	31715.6	31869.2	32026.4
L. Finger	20696.4	21000.8	21315.6	21640.8	21976.8	22324.4	22683.6	23054.8	23438.8	23836	24246.8
Palak	11708	11630	11548.8	11463.2	11374	11280.4	11182.4	11079.6	10972.4	10860.4	10743.2
Ginger	10287.6	10291.2	10294.4	10296.8	10298.4	10299.6	10300	10299.6	10298.4	10296.8	10294

Table 3 (C): Demand projections for HARYANA

Season: WINTER (Qty:MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	39008	39106.4	39205.6	39306	39407.2	39510	39613.6	39718.8	39825.2	39932.8	40041.6
Cabbage	39237.6	39524	39818.8	40122.4	40434.8	40756	41086.8	41427.6	41778.4	42140	42512.4
Peas	43920.8	44813.6	45737.2	46693.2	47682.4	48706.4	49766	50862.8	51998	53173.6	54390
Tomato	50857.2	52244.4	53680.8	55168.8	56710	58306.4	59959.6	61672	63446	65283.2	67186.8
Capsicum	5040.8	5261.2	5489.6	5726	5971.6	6226	6489.6	6762.8	7046	7339.6	7644
Garlic	12943.2	12860.8	12774	12683.2	12587.6	12488	12383.6	12274	12159.6	12040	11914.8
Beans	15150.8	15309.2	15472	15640.4	15814	15993.2	16178.4	16369.2	16566.4	16769.6	16980
Potato	183711.2	187643.2	191712.8	195925.2	200285.2	204798	209470	214306	219312.8	224496	229862.4
Broccoli	1784.8	1853.2	1924.4	1998	2074.4	2153.6	2235.6	2320.4	2408.4	2499.6	2594.4
Raddish	55050.8	56671.2	58350	60089.2	61890.8	63756.8	65690.4	67693.2	69768	71917.6	74144.4
Carrot	60473.2	62481.2	64561.6	66717.2	68950.8	71264.8	73662.8	76147.6	78722.4	81390.4	84154.8
Onion	48993.6	50498.8	52058.4	53673.6	55347.2	57081.2	58877.6	60738.8	62667.2	64664.8	66734.8
Pumpkin	18967.2	19899.6	20866.4	21868.4	23051.6	23985.2	25102.4	26260.4	27460.8	28705.6	29996
Brinjal	24319.6	24718.8	25131.2	25558	25999.2	26455.6	26927.2	27415.6	27920.4	28442.8	28983.2
L. Finger	12534.4	12392.8	12245.6	12091.2	11930.4	11762.8	11587.6	11404.8	11214.8	11016	10809.2
Palak	49437.2	51230	53088	55013.2	57008.4	59076	61218.8	63439.6	65740.8	68126	70597.6
Ginger	18922	19374.8	19843.6	20329.2	20831.6	21352.4	21891.2	22449.2	23027.2	23625.6	24245.2
Mustard	12434	12929.2	13442	13974	14525.2	15096.4	15688.4	16302	16938	17597.6	18280.8
Methi	9974	10357.6	10755.2	11167.2	11594.4	12037.2	12496	12971.6	13464.4	13975.2	14504.4
Soya	12391.2	12455.2	12520.4	12587.6	12656	12726.8	12798.8	12873.2	12949.2	13027.6	13107.6

Table 4 (A): Demand projections for PUNJAB

Season: SUMMER (Qty:MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	38880.4	39113.2	39352	39597.2	39848.8	40107.2	40372.4	40644.8	40924.4	41212	41507.6
Cabbage	51497.6	52067.2	52654.8	53260.8	53886.4	54531.6	55197.6	55884.8	56594.4	57326.4	58082.8
Peas	33202	34035.2	34897.6	35790.4	36714.8	37672	38662.4	39688.4	40750	41849.6	42988
Tomato	112552.4	114674.4	116869.2	119139.2	121486.8	123915.6	126427.6	129026.4	156915.2	134496.8	137374.8
Capsicum	24079.6	24554.4	25045.2	25553.2	26078.8	26622.4	27184.8	27766.8	28369.2	28992	29636.8
Garlic	6120	6264.8	6414.4	6569.2	6729.2	6895.2	7067.2	7244.8	7428.8	7619.2	7816.4
Beans	15555.2	16122	16708.8	17316.8	17946.8	18599.6	19276	19976.8	20702.8	21455.2	22234.8
Potato	113206.8	116649.2	120214	123906.4	127730.4	131691.2	135793.6	140042.4	144443.2	149001.6	153723.2
Raddish	30374	30216.4	30050.8	29876.8	29693.6	29501.6	29299.6	29088.4	28866.4	28634	28390.8
Carrot	5163.2	5168	5172.8	5177.2	5181.6	5185.6	5189.6	5193.2	5196.4	5199.6	5202.4
Onion	60982.4	62675.6	64429.2	66244.8	68125.2	70072	72088	74175.6	76194	78576.8	80895.6
Pumpkin	43546	44544.4	45577.6	46647.2	47754	48899.6	50085.6	51312.8	52583.2	53898.4	55260
Gourd	45191.6	46006.8	46850	47721.6	48623.2	49555.6	50520	51517.6	52549.2	53616.8	54720.8
B. Gourd	35182.4	36132	37115.2	38133.2	39187.2	40278.8	41408.8	42579.2	43790.8	45046	46345.6
Cucumber	256553.2	268278.8	280432.4	293028.8	306084.8	319616.8	333642	348178	363244	378858.4	395041.6
Brinjal	39247.2	39944.4	40665.2	41410.4	42180.8	42978	43802	44654.4	45536.4	46448.4	47392
L. Finger	27280	27856.4	28452.4	29069.2	29707.2	30367.6	31051.2	31758.4	32490.4	33247.6	34031.6
Palak	11413.6	11666.8	11929.2	12200.8	12481.6	12772.4	13073.2	13384.4	13706.8	14040.4	14385.6
Ginger	5466.8	5472.8	5478.8	5484.4	5490	5495.2	5500.4	5505.2	5509.6	5514.4	5518.4

Table 4 (B): Demand projections for PUNJAB

Season: RAINY (Qty:MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	30730.8	31216.8	31718.8	32237.6	32774	33328.4	33901.6	34494	35106.8	35740	36395.2
Cabbage	38899.6	39076	39256.4	39440.8	39629.2	39822	40019.2	40221.2	40427.6	40639.2	40855.6
Peas	26766.4	27241.6	27732.8	28241.2	28766.4	29310	29872	30453.2	31054.4	31676	32319.6
Tomato	60946	61778	62637.2	63524.4	64440.8	65387.6	66365.6	67376	68420.4	69499.2	70614.4
Capsicum	22437.2	22626.4	22821.2	23022	23228.8	23441.6	23660.8	23886.8	24119.6	24359.6	24606.8
Garlic	19202	18942.8	18672.8	18390.8	18096.8	17790.4	17470.8	17137.6	16790.8	16429.2	16052.4
Beans	16677.2	17060.4	17457.2	17868	18292.8	18732.4	19188	19659.2	20146.8	20651.6	21174.4
Potato	88435.6	89486.4	90570.8	91690	92844.8	94037.6	95268.4	96539.6	97852	99207.6	100607.6
Raddish	38532	38822.8	39122	39429.6	39746	40071.6	40406.8	40752	41107.2	41472.8	41849.2
Carrot	19357.6	19265.6	19168.4	19066	18958.8	18845.6	18727.2	18602.4	18472	18334.8	18191.2
Onion	61702.8	62234.4	62781.6	63345.2	63925.2	64523.2	65139.2	65774	66428	67102	67797.2
Pumpkin	22566.8	23008.8	23466	23938.8	24428	24934.4	25458	25999.6	26560	27140	27740.4
Gourd	48266.4	48966.8	49690.4	50438	51210.4	52008.8	52833.6	53686	54567.2	55477.6	56419.2
B. Gourd	23423.6	24052.8	24704	25378.4	26076.4	26799.2	27548	28322.8	29125.6	29956.4	30817.2
Cucumber	38980.8	39901.2	40854	41840.4	42861.2	43917.6	45011.6	46143.6	47315.6	48528.8	49785.2
Brinjal	29429.2	29523.2	29618.4	29715.2	29813.6	29913.2	30014.8	30118	30222.8	30329.6	30438
L. Finger	16160.4	16212	16264.4	16317.6	16371.6	16426	16482	16538.4	16596	16654.4	16714
Palak	15142.4	15252.4	15366	15482.4	15602.4	15726	15852.8	15983.2	16117.6	16256	16398.4
Ginger	3218.4	3269.6	3322.8	3377.6	3434.4	3493.2	3553.6	3616.4	3681.2	3748	3817.2

Table 4 (C): Demand projections for PUNJAB

Season: WINTER

(Qty:MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	50567.6	50805.2	51048	51296	51550	51810	52076	52348	52627.2	52912.8	53205.2
Cabbage	45463.6	46230.8	47023.6	47843.6	48691.6	49568	50474.4	51411.6	52380.8	53383.2	54420
Peas	35306.8	36149.6	37021.6	37924.4	38858.8	39826	40827.6	41864	42936.8	44047.6	45197.6
Tomato	72216.8	74395.6	76652	78989.2	81409.6	83916.4	86512.8	89202	91987.2	94872	97860.4
Capsicum	12311.6	12462.8	12619.2	12780.4	12946.8	13118.8	13296	13479.6	13668.8	13864.4	14066
Garlic	7535.6	8022	8526	9048.4	9590.4	10152.4	10735.2	11339.2	11965.6	12614.8	13288.4
Beans	4728.8	4983.6	5248	5522.4	5806.4	6101.2	6406.4	6723.2	7051.2	7391.2	7744
Potato	134509.2	139962	145612.4	151468	157535.6	163823.6	170339.6	177092	184089.2	191340	198853.6
Broccoli	809.2	851.2	894.8	940	987.2	1035.6	1086	1138.4	1192.8	1248.8	1307.2
Raddish	35057.2	36446.4	37886	39377.6	40923.2	42524.8	44184.8	45904.4	47686.8	49533.2	51447.2
Carrot	56413.6	58115.6	59878.4	61704	63594.8	65553.2	67581.6	69682.4	71858.4	74112	76446.4
Onion	64002.8	66108.4	68289.2	70548.4	72888.4	75312.8	77824	80425.2	83120.4	85912	88804
Pumpkin	17744.8	18005.6	18274.8	18553.2	18840.8	19138	19445.2	19762.8	20090.8	20430.4	20780.8
B. Gourd	3010	3064	3120	3177.6	3237.2	3298.8	3362.8	3428.8	3496.8	3567.6	3640.4
Cucumber	7312	7216.8	7117.6	7014	6906	6793.2	6675.6	6553.2	6425.6	6292.8	6154.4
Brinjal	6532.4	7598.8	8705.2	9853.2	11044	12279.6	13561.6	14891.6	16271.2	17702	19186.8
L. Finger	2093.6	2209.2	2329.2	2453.2	2582	2715.6	2854	2997.6	3146.4	3300.4	3460.4
Palak	23814.4	26180.4	28634.8	31181.2	33822	36561.2	39402.4	42349.2	45405.6	48575.2	51862.4
Ginger	10794.8	11452.4	12134.4	12841.2	13574.4	14334.4	15122	15939.2	16786	17664	18574.4
Mustard	17108.8	17520.8	17947.6	18389.2	18846.4	19319.6	19809.6	20316.4	20841.6	21385.2	21947.6
Methi	3940	4533.2	5148.8	5787.2	6450	7137.2	7850.4	8590	9357.6	10153.6	10979.2
Soya	19189.6	19348.8	19512.8	19682	19856	20035.2	20219.6	20409.6	20605.6	20807.2	21015.2

Table 5 (A): Demand projections OVERALL

Season: Summer (Qty. MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	75901.6	77012.8	78161.2	79349.2	80577.6	81848	83161.6	84520.8	85926.4	87380.8	88885.2
Cabbage	92415.2	93875.2	95384.4	96945.6	98560.8	100230.4	101958	103744.8	105593.2	107505.6	109484.8
Peas	78653.2	81291.2	84025.6	86860.8	89800	92848	96007.2	99283.2	102679.6	106200.4	109851.6
Tomato	271414.8	276255.6	281262.4	286442	291799.6	297342.8	303077.2	309010.4	340350	321503.2	328077.6
Capsicum	66472	68281.6	70156	72098.8	74112.4	76198.4	78360	80600.8	82923.2	85329.6	87824
Garlic	20876.8	21058.8	21245.2	21436.4	21632.4	21833.6	22040.4	22251.6	22469.2	22692	22921.2
Beans	38320.8	39116.4	39938	40786.8	41663.6	42569.6	43506	44473.6	45473.6	46507.2	47575.2
Potato	367355.6	375463.6	383854.4	392540.4	401530.4	410837.2	420471.2	430444.8	440771.2	451462.8	462532.8
Broccoli	5358.8	5709.2	6073.2	6451.6	6844.8	7253.2	7678	8118.8	8577.2	9053.2	9547.6
Raddish	44578	44827.6	45084	45347.6	45617.6	45895.2	46179.6	46473.2	46773.6	47082.8	47401.2
Carrot	19538.8	20047.6	20575.2	21122.4	21689.2	22276.8	22885.6	23517.2	24171.2	24850	25553.2
Onion	171638.8	175677.2	179857.2	184184.8	188666	193305.2	198107.6	203081.6	208087.6	213564.4	219087.6
Pumpkin	153366.4	155755.6	158225.2	160778.8	163418.4	166148.4	168971.2	171890.4	174910	178033.2	181264.4
Gourd	151742	154217.6	156777.6	159425.2	162163.6	164996	167926.4	170958	174094.4	177340.4	180699.2
B. Gourd	106404.4	108296.4	110252.8	112276.8	114369.6	116534.8	118774.4	121091.2	123487.6	125968	128534.4
Cucumber	776948.4	798309.6	820435.6	843352.8	867090	891679.2	917150.4	943534.8	970868	999182.8	1028516
Brinjal	99638.4	101104	102618	104182.8	105799.6	107472	109200	110986.8	112835.2	114745.6	116722
L. Finger	116203.6	118328	120526.4	122800.8	125155.2	127592	130114.8	132725.6	135428.8	138226.4	141124
Palak	31533.2	32044.8	32572.8	33118.8	33682.8	34265.2	34866.8	35488	36130.4	36794	37479.6
Ginger	11672.4	11417.6	11151.2	10872.8	10580.4	10274.8	9956	9622	9272.4	8908.8	8527.6

Table 5 (B): OVERALL Demand projections

Season: Rainy (Qty. MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	59141.6	60584.8	62079.6	63627.6	65232	66893.2	68614.8	70397.6	72245.2	74159.2	76142
Cabbage	68435.2	69445.2	70490.8	71572	72690.4	73847.2	75044.8	76284	77565.6	78892.8	80266
Peas	66472.8	68678.4	70964.4	73335.2	75792.8	78340.8	80982.4	83721.2	86561.2	89504.8	92557.6
Tomato	220112.8	224825.6	229704.4	234754.4	239982.8	245396	250999.6	256801.6	262810.4	269031.2	275473.6
Capsicum	53312.8	54829.6	56401.2	58030.8	59720.8	61471.6	63287.6	65169.2	67120.4	69143.6	71240.4
Garlic	36512.4	36192.8	35858	35505.6	35136	34748.4	34342.4	33915.6	33470	33002.8	32513.2
Beans	42908	43534.4	44180.4	44846.8	45533.2	46241.6	46972.4	47725.6	48502.8	49304.4	50132.4
Potato	392141.2	399798.4	407720.4	415916.4	424397.6	433174	442256	451656	461384.4	471454.4	481878
Broccoli	2318	2444.8	2576.8	2713.6	2856	3003.2	3156.4	3316	3481.2	3653.2	3831.6
Raddish	51772.8	52418.8	53085.6	53774.4	54484.8	55218.8	55976.8	56760.4	57568.8	58404.4	59267.2
Carrot	27918.8	28181.6	28453.2	28732.8	29022.4	29320.8	29629.6	29948.4	30278.8	30619.2	30971.2
Onion	207978.4	211670	215488.8	219439.6	223527.6	227758	232135.2	236665.6	241354	246206.8	251230.4
Pumpkin	118197.6	120610.4	123108.4	125694.4	128370.8	131142.8	134012.8	136984.4	140061.6	143248	146549.2
Gourd	148046.4	150423.6	152882.4	155425.2	158055.2	160776.4	163590.8	166502.8	169516.8	172634.8	175862
B. Gourd	82656	83540.4	84452	85393.2	86363.2	87364.4	88398	89464.4	90566	91702	92876
Cucumber	422977.2	431226.4	439768	448612.8	457770.4	467252.8	477073.2	487243.6	497776	508685.6	519985.2
Brinjal	88024.4	89066.8	90142.8	91254	92401.2	93586	94774	96074.4	97381.2	98731.6	100126.8
L. Finger	86001.6	88088.4	90251.2	92491.2	94811.6	97216	99707.6	102288.4	104963.2	107735.2	110608
Palak	38021.6	38596.8	39193.6	39810.4	40450	41111.6	41796.4	42505.6	43240	44000.4	44788.4
Ginger	16640.8	16572.8	16501.6	16425.2	16344	16258	16166	16069.2	15966.4	15857.6	15742.8

Table 5 (C): Overall Demand projections

Season: Winter

(Qty. MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	130114	131428.8	132784	134180.8	135620.8	137106.8	138638.8	140218.8	141850	143532.8	145268.8
Cabbage	123514.4	125467.2	127484	129569.6	131726	133953.2	136256.4	138637.6	141099.2	143644.8	146277.6
Peas	113494	116030	118654	121370	124180	127088.8	130100	133216	136441.2	139780.8	143237.6
Tomato	175572.4	180721.6	186055.2	191580.4	197303.2	203232	209374	215736.4	222327.6	229156.4	236231.6
Capsicum	20306	20784.8	21280.4	21793.6	22324.8	22875.2	23444.8	24034.8	24645.2	25277.2	25931.6
Garlic	29932.8	30582.4	31253.6	31948	32666.8	33411.6	34182	34978.8	35804.4	36658.8	37543.2
Beans	31546.8	31969.2	32404.8	32853.6	33316	33792	34283.2	34789.2	35310.8	35848	36402.8
Potato	480095.6	492877.6	506108.4	519806	533985.2	548665.6	563865.2	579602	595896	612768	630238.4
Broccoli	3227.2	3384	3547.6	3716.8	3892.8	4074.8	4264	4460	4663.6	4874	5093.6
Raddish	130161.2	134328	138645.2	143117.6	147751.2	152552	157526.8	162680	168020	173552.4	179286
Carrot	158814	163598.8	168554.4	173687.6	179004.8	184511.6	190216.8	196126	202248.4	208590	215159.6
Onion	159157.2	164392.4	169816.8	175438	181262.8	187300	193556	200038.8	206758.4	213721.2	220937.6
Pumpkin	45033.2	46513.2	48046	49634.4	51424	52986.4	54753.6	56585.2	58483.2	60450	62488
Gourd	1222.8	1183.2	1142	1098.8	1053.6	1006.4	956.8	904.8	850.4	793.2	733.6
B. Gourd	4256	4256	4255.6	4254.4	4252.4	4249.2	4246	4241.6	4236	4229.6	4222
Cucumber	10829.6	10780.4	10728.8	10674.4	10616.8	10556.4	10492.4	10425.6	10355.2	10281.6	10204.4
Brinjal	51646.8	53415.2	55246	57142	59105.2	61138.4	63243.6	65424	67682	70020	72442.4
L. Finger	20923.2	20598.4	20258.8	19902	19528.8	19138.4	18729.2	18301.2	17854	17385.6	16896.4
Palak	123776.4	129578	135593.6	141830.8	148296.8	155000.4	161950.8	169156.8	176628	184374	192404.4
Ginger	40942	42327.2	43762.4	45248.8	46788.8	48385.2	50037.6	51750.4	53524.8	55363.6	57268.4
Mustard	29542.8	30450	31389.6	32363.2	33371.6	34416	35498	36618.4	37779.6	38982.8	40228.4
Methi	13914	14890.8	15904	16954.4	18044.4	19174.4	20346.4	21561.6	22822	24128.8	25483.6
Soya	31580.8	31804	32033.2	32269.6	32512	32762	33018.4	33282.8	33554.8	33834.8	34122.8

Table 6 (A): Share of Himachal Vegetables in Delhi Market

Season: Summer (Qty:MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	2550.24	2665.2	2784.48	2908.24	3036.8	3170.16	3308.64	3452.4	3601.6	3756.48	3917.2
Cabbage	2341.92	2450.56	2563.28	2680.4	2801.92	2928.08	3059.04	3194.96	3336.08	3482.56	3634.64
Peas	5741.76	6067.2	6405.24	6756.48	7121.16	7500.12	7893.6	8302.44	8727	9167.88	9625.8
Tomato	10045.36	10389.76	10746.8	11117.04	11500.88	11898.96	12311.68	12739.68	13183.44	13643.68	14120.96
Garlic	5251.2	5242.5	5232.6	5221.2	5208.6	5194.5	5178.9	5161.5	5142.9	5122.2	5100
Beans	739.6	731.32	722.56	713.36	703.6	693.32	682.48	671.08	659.08	646.48	633.2
Potato	27069.52	27905.84	28772.56	29670.8	30601.6	31566.32	32566.16	33602.48	34676.64	35790.08	36944.24
Broccoli	2143.52	2283.68	2429.28	2580.64	2737.92	2901.28	3071.2	3247.52	3430.88	3621.28	3819.04
Carrot	6218	6456.2	6703.4	6960	7226	7502	7788.2	8085.2	8393.2	8713	9044.6

Table 6 (B): Share of Himachal Vegetables in Delhi Market

Season: Rainy Qty: MT

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	7626.36	8006.32	8400.56	8810.2	9235.52	9677.08	10135.72	10611.72	11106.2	11619.44	12152.28
Cabbage	6891.64	7280	7683.48	8102.36	8537.76	8989.68	9459.24	9947	10453.52	10979.64	11525.92
Peas	15753.6	16553.92	17385.28	18248.32	19144.64	20075.52	21041.92	22045.44	23087.36	24169.28	25292.48
Tomato	39058.88	40497.28	41989.12	43536.32	45141.44	46806.08	48532.48	50323.52	52181.12	54108.16	56106.88
Capsicum	16290.88	17080.96	17901.12	18752.64	19637.12	20554.88	21508.16	22497.6	23524.8	24591.36	25698.56
Beans	7092.96	7030.8	6964.72	6894.44	6820.24	6741.84	6658.96	6571.32	6478.92	6381.2	6278.72
Potato	86033.28	88638.24	91337.52	94134.24	97032.48	100035.8	103148.4	106374.2	109717.4	113182.6	116773.9
Broccoli	1810.56	1906.24	2005.44	2108.48	2215.68	2326.72	2441.92	2561.92	2686.4	2815.68	2949.76
Carrot	3980.4	4184.88	4397.52	4618.08	4847.04	5084.88	5331.84	5588.4	5854.8	6131.28	6418.32

Table 6 (C): Share of Himachal Vegetables in Delhi Market

Season: Winter Qty: MT

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cabbage	1839	1882.68	1927.84	1974.58	2022.96	2073	2124.8	2178.42	2233.9	2291.34	2350.82
Peas	1623.86	1663.12	1703.74	1745.78	1789.28	1834.3	1880.92	1929.16	1979.08	2030.78	2084.32
Tomato	4899.8	5057.16	5220.28	5389.32	5564.52	5746.16	5934.48	6129.68	6332	6541.8	6759.28
Beans	538.64	540.62	542.62	544.58	546.56	548.5	550.44	552.36	554.28	556.16	558.04
Potato	7686.94	7862.34	8043.74	8231.38	8425.48	8626.3	8834.08	9049.08	9271.56	9501.82	9740.14
Broccoli	63.32	67.96	72.84	77.88	83.12	88.56	94.24	100.12	106.24	112.56	119.2

Table 7 (A): Share of Himachal Vegetables in Chandigarh Market

Season: Summer (Qty: MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	690.6	692.4	694.08	695.88	697.56	699.24	700.8	702.48	704.04	705.48	706.92
Cabbage	490.7	490.4	490	489.5	489	488.3	487.6	486.7	485.7	484.6	483.4
Peas	684.04	685.3	686.42	687.54	688.66	689.64	690.62	691.46	692.3	693	693.7
Tomato	1178.64	1172.16	1165.2	1157.76	1149.84	1141.44	1132.44	1122.84	1112.64	1101.96	1090.44
Garlic	524.48	517.44	510.4	502.72	494.72	486.4	477.44	468.16	458.24	448	437.12
Beans	383.44	378.4	373.12	367.44	361.52	355.28	348.72	341.84	334.56	326.96	318.88
Potato	1680.5	1659.3	1636.8	1613.1	1588.1	1561.8	1534	1504.8	1474.1	1441.9	1407.9
Carrot	1454.7	1475.4	1496.7	1518.9	1541.7	1565.4	1589.7	1615.2	1641.3	1668.3	1696.2

Table 7 (B): Share of Himachal Vegetables in Chandigarh Market

Season: RAINY (Qty. MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	1677.9	1691.16	1705.1	1719.04	1733.66	1748.28	1763.58	1779.22	1795.2	1811.86	1828.52
Cabbage	1648.32	1671.1	1694.9	1719.72	1745.22	1771.4	1798.6	1826.82	1855.72	1885.64	1916.92
Peas	1850.04	1864.8	1879.56	1895.04	1910.88	1926.72	1943.28	1960.2	1977.84	1995.48	2013.84
Tomato	3854.88	3841.2	3826.44	3810.24	3792.96	3774.6	3754.44	3732.84	3710.16	3685.32	3659.4
Capsicum	1632.6	1627.92	1622.52	1616.76	1610.64	1603.8	1596.6	1588.68	1580.4	1571.4	1561.68
Beans	1480.32	1477.8	1474.92	1472.04	1468.44	1464.48	1460.16	1455.48	1450.44	1445.04	1438.92
Potato	6643.84	6576.64	6505.28	6429.76	6350.08	6265.92	6176.96	6083.2	5984.32	5880.32	5770.88
Carrot	1445.4	1455.9	1466.7	1477.5	1488.9	1500.3	1512	1524	1536.6	1549.2	1562.1

Table 7 (C): Share of Himachal Vegetables in Chandigarh Market

Season: WINTER (Qty: MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cabbage	101.66	102.94	104.24	105.6	107.02	108.46	109.96	111.5	113.1	114.74	116.44
Peas	89.46	90.22	91.02	91.84	92.66	93.52	94.4	95.3	96.24	97.2	98.18
Tomato	350.04	351	351.96	352.92	353.84	354.76	355.68	356.56	357.44	358.32	359.16
Capsicum	42.66	41.32	39.92	38.46	36.92	35.32	33.64	31.88	30.04	28.1	26.08
Beans	44.72	43.2	41.62	39.96	38.22	36.38	34.48	32.48	30.38	28.2	25.9

Table 8 (A): Share of Himachal Vegetables in HARYANA Market

Season: SUMMER (Qty: MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	6590.4	6679.68	6771.96	6867.36	6965.88	7067.76	7173	7281.72	7394.16	7510.44	7630.56
Cabbage	5449.04	5518.72	5590.64	5664.96	5741.76	5821.04	5902.96	5987.68	6075.12	6165.6	6259.04
Peas	4871.52	5014.8	5163.2	5316.88	5476.08	5641.04	5811.92	5988.88	6172.32	6362.24	6559.12
Tomato	20941.36	21145.04	21355.04	21571.68	21795.12	22025.52	22263.28	22508.56	22761.76	23022.96	23292.64
Garlic	4969.72	5010.04	5051.2	5094.04	5138	5183.08	5229.84	5277.72	5327.28	5378.24	5430.88
Beans	1345.24	1378.92	1413.8	1449.92	1487.32	1526.04	1566.16	1607.68	1650.72	1695.24	1741.4
Potato	16811.88	16897.2	16984.56	17074.14	17165.94	17260.08	17356.62	17455.62	17557.26	17661.48	17768.52

Table 8 (B): Share of Himachal Vegetables in HARYANA Market

Season: RAINY (Qty:MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	11656.5	11955.6	12265.5	12586.2	12918.6	13262.7	13619.1	13988.1	14370.3	14766.3	15176.4
Cabbage	12425.84	12602.24	12784.8	12973.24	13167.84	13369.16	13577.48	13792.52	14014.84	14245	14482.72
Peas	14367.04	14937.92	15529.28	16142.4	16777.92	17436.48	18119.04	18826.56	19560	20320	21107.84
Tomato	84848	86526.4	88263.36	90060.8	91920.64	93845.44	95837.44	97898.88	100033	102241.6	104527.7
Capsicum	6523.5	6782.4	7050.6	7328.7	7617	7915.8	8225.7	8546.4	8879.1	9224.1	9581.4
Beans	11562.56	11830.4	12107.84	12395.2	12692.48	13000.64	13319.36	13649.28	13991.04	14344.96	14711.68
Potato	91207.2	92616.48	94073.28	95579.28	97136.64	98746.56	100411.4	102133.2	103913.8	105755.3	107660.2

Table 8 (C): Share of Himachal Vegetables in HARYANA Market

Season: WINTER (Qty: MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Tomato	2542.86	2612.22	2684.04	2758.44	2835.5	2915.32	2997.98	3083.6	3172.3	3264.16	3359.34
Capsicum	252.04	263.06	274.48	286.3	298.58	311.3	324.48	338.14	352.3	366.98	382.2
Beans	757.54	765.46	773.6	782.02	790.7	799.66	808.92	818.46	828.32	838.48	849
Broccoli	535.44	555.96	577.32	599.4	622.32	646.08	670.68	696.12	722.52	749.88	778.32

Table 9 (A): Share of Himachal Vegetables in PUNJAB Market

Season: SUMMER (Qty: MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	13608.14	13689.62	13773.2	13859.02	13947.08	14037.52	14130.34	14225.68	14323.54	14424.2	14527.66
Cabbage	10299.52	10413.44	10530.96	10652.16	10777.28	10906.32	11039.52	11176.96	11318.88	11465.28	11616.56
Peas	8300.5	8508.8	8724.4	8947.6	9178.7	9418	9665.6	9922.1	10187.5	10462.4	10747
Tomato	28138.1	28668.6	29217.3	29784.8	30371.7	30978.9	31606.9	32256.6	39228.8	33624.2	34343.7
Garlic	3978	4072.12	4169.36	4269.98	4373.98	4481.88	4593.68	4709.12	4828.72	4952.48	5080.66
Beans	3111.04	3224.4	3341.76	3463.36	3589.36	3719.92	3855.2	3995.36	4140.56	4291.04	4446.96
Potato	11320.68	11664.92	12021.4	12390.64	12773.04	13169.12	13579.36	14004.24	14444.32	14900.16	15372.32
Carrot	2581.6	2584	2586.4	2588.6	2590.8	2592.8	2594.8	2596.6	2598.2	2599.8	2601.2

Table 9 (B): Share of Himachal Vegetables in PUNJAB Market

Season: RAINY (Qty: MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	26121.18	26534.28	26960.98	27401.96	27857.9	28329.14	28816.36	29319.9	29840.78	30379	30935.92
Cabbage	29174.7	29307	29442.3	29580.6	29721.9	29866.5	30014.4	30165.9	30320.7	30479.4	30641.7
Peas	21413.12	21793.28	22186.24	22592.96	23013.12	23448	23897.6	24362.56	24843.52	25340.8	25855.68
Tomato	51804.1	52511.3	53241.62	53995.74	54774.68	55579.46	56410.76	57269.6	58157.34	59074.32	60022.24
Capsicum	17949.76	18101.12	18256.96	18417.6	18583.04	18753.28	18928.64	19109.44	19295.68	19487.68	19685.44
Beans	13341.76	13648.32	13965.76	14294.4	14634.24	14985.92	15350.4	15727.36	16117.44	16521.28	16939.52
Potato	44217.8	44743.2	45285.4	45845	46422.4	47018.8	47634.2	48269.8	48926	49603.8	50303.8
Carrot	12582.44	12522.64	12459.46	12392.9	12323.22	12249.64	12172.68	12091.56	12006.8	11917.62	11824.28

Table 9 (C): Share of Himachal Vegetables in PUNJAB Market

Season: WINTER (Qty: MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Capsicum	615.58	623.14	630.96	639.02	647.34	655.94	664.8	673.98	683.44	693.22	703.3
Beans	236.44	249.18	262.4	276.12	290.32	305.06	320.32	336.16	352.56	369.56	387.2
Broccoli	161.84	170.24	178.96	188	197.44	207.12	217.2	227.68	238.56	249.76	261.44

Table 10 (A) : Overall Share of Himachal Vegetables

Season: Summer (Qty: MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	21821.71	22141.18	22471.35	22812.9	23166.06	23531.3	23908.96	24299.73	24703.84	25121.98	25554.5
Cabbage	19638.23	19948.48	20269.19	20600.94	20944.17	21298.96	21666.08	22045.77	22438.56	22844.94	23265.52
Peas	21629.63	22355.08	23107.04	23886.72	24695	25533.2	26401.98	27302.88	28236.89	29205.11	30209.19
Tomato	64461.02	65610.71	66799.82	68029.98	69302.41	70618.92	71980.84	73389.97	80833.13	76357.01	77918.43
Garlic	15135.68	15267.63	15402.77	15541.39	15683.49	15829.36	15979.29	16132.41	16290.17	16451.7	16617.87
Beans	5748.12	5867.46	5990.7	6118.02	6249.54	6385.44	6525.9	6671.04	6821.04	6976.08	7136.28
Potato	64287.23	65706.13	67174.52	68694.57	70267.82	71896.51	73582.46	75327.84	77134.96	79005.99	80943.24
Broccoli	535.88	570.92	607.32	645.16	684.48	725.32	767.8	811.88	857.72	905.32	954.76

Table 10 (B) : Overall Share of Himachal Vegetables

Season: Rainy (Qty: MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cauliflower	46574.01	47710.53	48887.69	50106.74	51370.2	52678.4	54034.16	55438.11	56893.1	58400.37	59961.83
Cabbage	51326.4	52083.9	52868.1	53679	54517.8	55385.4	56283.6	57213	58174.2	59169.6	60199.5
Peas	54840.06	56659.68	58545.63	60501.54	62529.06	64631.16	66810.48	69069.99	71412.99	73841.46	76360.02
Tomato	184344.5	188291.4	192377.4	196606.8	200985.6	205519.2	210212.2	215071.3	220103.7	225313.6	230709.1
Capsicum	43316.65	44549.05	45825.98	47150.03	48523.15	49945.68	51421.18	52949.98	54535.33	56179.18	57882.83
Beans	34326.4	34827.52	35344.32	35877.44	36426.56	36993.28	37577.92	38180.48	38802.24	39443.52	40105.92
Potato	245088.3	249874	254825.3	259947.8	265248.5	270733.8	276410	282285	288365.3	294659	301173.8
Broccoli	463.6	488.96	515.36	542.72	571.2	600.64	631.28	663.2	696.24	730.64	766.32
Carrot	13959.4	14090.8	14226.6	14366.4	14511.2	14660.4	14814.8	14974.2	15139.4	15309.6	15485.6

Table 10 (C) : Share of Himachal Vegetables

Season: Winter (Qty: MT)

Vegetable	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Cabbage	3087.86	3136.68	3187.1	3239.24	3293.15	3348.83	3406.41	3465.94	3527.48	3591.12	3656.94
Peas	2837.35	2900.75	2966.35	3034.25	3104.5	3177.22	3252.5	3330.4	3411.03	3494.52	3580.94
Tomato	10973.28	11295.1	11628.45	11973.78	12331.45	12702	13085.88	13483.53	13895.48	14322.28	14764.48
Capsicum	761.475	779.43	798.015	817.26	837.18	857.82	879.18	901.305	924.195	947.895	972.435
Beans	1577.34	1598.46	1620.24	1642.68	1665.8	1689.6	1714.16	1739.46	1765.54	1792.4	1820.14
Potato	6001.195	6160.97	6326.355	6497.575	6674.815	6858.32	7048.315	7245.025	7448.7	7659.6	7877.98
Broccoli	484.08	507.6	532.14	557.52	583.92	611.22	639.6	669	699.54	731.1	764.04

ANNEXURE V

Estimated model coefficients (kg/capita/month)

DELHI

Vegetable	a	b*100	Sig	R^2
SUMMER				
Cauliflower	-0.0570	0.0212	H	27.10
Cabbage	-0.0608	0.0201	H	17.16
Peas	-0.2073	0.0410	H	36.60
Tomato	0.0719	0.0612	H	31.69
Capsicum	-0.0964	0.0375	H	33.02
Garlic	0.1478	-0.0018	N	0.59
Beans	0.1947	-0.0048	N	1.89
Potato	0.4446	0.1461	H	41.37
Broccoli	-0.0836	0.0134	H	21.18
Raddish	0.0071	0.0139	N	1.34
Carrot	-0.0097	0.0172	N	1.43
Onion	0.1220	0.0508	H	38.38
Pumpkin	0.2278	0.0543	H	24.69
Gourd	0.1537	0.0608	H	25.95
B. Gourd	0.1167	0.0227	H	17.54
Cucumber	0.0404	0.1620	H	41.95
Brinjal	0.0925	0.0287	H	30.11
L. Finger	0.1020	0.0580	H	33.91
Palak	0.1063	0.0009	N	0.01
Ginger	0.2424	-0.0124	S	4.24
RAINY				
Cauliflower	-0.0770	0.0203	H	26.28
Cabbage	-0.1049	0.0210	H	16.32
Peas	-0.1500	0.0374	N	3.10
Tomato	0.0019	0.0646	H	40.46
Capsicum	-0.1293	0.0367	H	36.81
Garlic	0.2437	-0.0063	N	1.84
Beans	0.2534	-0.0056	N	0.95
Potato	0.5196	0.1511	H	32.06
Broccoli	-0.0197	0.0045	S	5.07
Raddish	-0.0286	0.0146	N	1.53
Carrot	-0.0526	0.0128	N	2.06
Onion	-0.0179	0.0641	H	33.09
Pumpkin	0.1135	0.0723	H	35.86
Gourd	0.0977	0.0675	H	27.11
B. Gourd	0.1045	0.0210	H	10.29
Cucumber	-0.3243	0.1795	H	38.25
Brinjal	0.838	0.0283	H	19.71

L. Finger	0.0198	0.0615	H	35.32
Palak	-0.0977	0.0200	S	6.13
Ginger	0.1213	-0.0057	H	16.67
WINTER				
Cauliflower	0.2427	0.0328	H	38.47
Cabbage	0.2649	0.0289	H	37.33
Peas	0.2262	0.0261	H	20.51
Tomato	0.1283	0.0554	H	34.59
Capsicum	-0.0308	0.0051	S	4.02
Garlic	0.0523	0.0082	N	2.76
Beans	0.1958	-0.0004	N	0.00
Potato	1.1852	0.1148	H	34.77
Broccoli	-0.0128	0.0018	N	2.18
Raddish	0.0979	0.0409	H	11.11
Carrot	0.2337	0.0357	H	12.57
Onion	0.0394	0.0563	H	47.44
Pumpkin	-0.0269	0.0108	N	1.65
B. Gourd	0.0228	-0.0012	N	2.15
Cucumber	0.0054	0.0009	N	0.12
Brinjal	0.2014	0.0105	H	7.26
L. Finger	0.2505	-0.0120	H	22.19
Palak	0.0716	0.0596	H	33.68
Ginger	0.0630	0.0094	N	2.65

CHANDIGARH

Vegetable	a	b*100	Sig	R^2
SUMMER				
Cauliflower	0.6480	-0.0008	N	0.02
Cabbage	0.5989	-0.0025	N	1.44
Peas	0.5617	-0.0011	N	0.41
Tomato	1.3440	-0.0105	N	4.64
Capsicum	0.6750	-0.0070	H	9.05
Garlic	0.2611	-0.0032	S	8.11
Beans	0.7663	-0.0094	H	11.59
Potato	2.6610	-0.0319	S	8.29
Raddish	0.8578	0.0020	N	0.31
Carrot	0.3760	0.0059	N	1.42
Onion	1.3198	-0.0026	N	0.28
Pumpkin	0.4538	0.0057	S	8.54
Gourd	0.4088	0.0066	H	14.64
B. Gourd	0.3810	0.0041	N	1.55
Cucumber	0.0043	0.0316	H	52.03
Brinjal	0.4839	-0.0011	N	0.31
L. Finger	0.2791	0.0078	H	20.08
Palak	0.4735	0.0025	N	1.49

Ginger	0.0722	0.0030	H	22.75
RAINY				
Cauliflower	0.4754	0.0024	N	2.73
Cabbage	0.3797	0.0057	H	11.52
Peas	0.4967	0.0024	N	1.33
Tomato	1.4017	-0.0090	N	3.55
Capsicum	0.5855	-0.0035	N	2.98
Garlic	0.1817	-0.0019	S	6.94
Beans	0.5154	-0.0026	N	1.69
Potato	3.1301	-0.0334	H	11.19
Broccoli	-0.0389	0.0021	N	4.78
Raddish	1.4844	-0.0168	H	12.53
Carrot	0.4750	0.0019	N	0.86
Onion	1.4242	-0.0104	N	4.54
Pumpkin	0.6597	-0.0045	N	4.70
B. Gourd	0.4046	-0.0003	N	0.03
Cucumber	0.2686	0.0104	H	24.61
Brinjal	0.4927	0.0012	N	0.47
L. Finger	0.3851	0.0026	N	2.74
Palak	0.3930	0.0021	N	2.24
Ginger	0.1341	0.0004	N	0.58
WINTER				
Cauliflower	0.5996	-0.0018	N	0.92
Cabbage	0.4201	0.0051	S	6.92
Peas	0.4225	0.0025	N	2.55
Tomato	0.9802	-0.0010	N	0.06
Capsicum	0.4564	-0.0086	H	19.92
Garlic	0.0657	0.0008	N	1.20
Beans	0.4961	-0.0097	H	22.49
Potato	3.2807	-0.0410	H	12.28
Raddish	1.1532	-0.0062	N	2.52
Carrot	0.3824	0.0039	N	4.53
Onion	0.0882	0.0121	H	22.10
Pumpkin	0.5650	-0.0037	N	3.14
Gourd	0.6628	-0.0127	H	18.33
B. Gourd	0.4571	-0.0087	H	22.17
Cucumber	0.6141	0.0029	N	1.81
Brinjal	0.7587	-0.0140	H	11.68
L. Finger	0.5772	-0.0105	H	18.68
Palak	0.7152	-0.0116	S	7.58
Ginger	0.1965	-0.0016	H	9.03

HARYANA

Vegetable	a	b*100	Sig	R^2
SUMMER				
Cauliflower	0.1699	0.0052	H	10.17
Cabbage	0.2179	0.0060	H	7.05
Peas	0.0563	0.0136	H	27.61
Tomato	0.9471	0.0166	H	12.41
Capsicum	0.1055	0.0061	H	9.90
Garlic	0.0682	0.0009	N	3.14
Beans	0.0512	0.0063	H	18.47
Potato	1.1923	0.0071	N	1.38
Onion	0.4481	0.0157	H	14.87
Pumpkin	0.7365	-0.0064	N	1.98
Gourd	0.6523	-0.0041	N	1.19
B. Gourd	0.4769	0.0034	N	0.31
Cucumber	3.1518	0.0860	H	15.51
Brinjal	0.4136	-0.0024	N	1.32
L. Finger	0.5089	-0.0041	N	2.04
Palak	0.0769	0.0034	N	2.24
Ginger	0.0130	0.0001	N	0.09
RAINY				
Cauliflower	0.0558	0.0075	H	35.65
Cabbage	0.1334	0.0044	H	9.23
Peas	-0.0220	0.0138	H	50.97
Tomato	0.5942	0.0384	H	33.24
Capsicum	-0.0105	0.0067	H	41.99
Garlic	0.0772	0.0008	N	3.52
Beans	0.0642	0.0062	H	25.73
Potato	1.0771	0.0417	H	15.44
Onion	0.6925	0.0247	H	23.33
Pumpkin	0.4259	-0.0026	N	1.02
Gourd	0.5838	-0.0064	N	3.46
B. Gourd	0.5694	-0.0087	H	12.18
Cucumber	2.4660	0.0379	H	6.98
Brinjal	0.3348	0.0014	N	0.46
L. Finger	0.1519	0.0054	H	7.90
Palak	0.1715	-0.0020	N	0.57
Ginger	0.1261	-0.0003	N	0.11
WINTER				
Cauliflower	0.4491	0.0005	N	0.04
Cabbage	0.3874	0.0043	N	2.97
Peas	0.2380	0.0164	H	20.53
Tomato	0.1545	0.0262	H	27.45
Capsicum	-0.0130	0.0043	N	3.28
Garlic	0.1885	-0.0022	N	1.10
Beans	0.1334	0.0026	N	1.08

Potato	0.9274	0.0726	H	42.24
Broccoli	-0.0014	0.0013	N	1.49
Raddish	0.1265	0.0307	H	9.05
Carrot	0.0610	0.0384	H	12.42
Onion	0.0910	0.0286	H	32.34
Pumpkin	-0.0845	0.0182	S	4.75
Brinjal	0.1644	0.0071	H	8.64
L. Finger	0.2035	-0.0034	N	3.53
Palak	-0.0019	0.0345	H	30.24
Ginger	0.0791	0.0085	N	2.21
Mustard	-0.0156	0.0096	H	8.53
Methi	-0.0079	0.0074	H	8.98
Soya	0.1315	0.0008	N	0.13

PUNJAB

Vegetable	a	b*100	Sig	R^2
SUMMER				
Cauliflower	0.3491	0.0028	N	1.68
Cabbage	0.3840	0.0085	H	8.29
Peas	0.1076	0.0140	H	27.18
Tomato	0.5757	0.0346	H	23.09
Capsicum	0.1169	0.0078	H	16.97
Garlic	0.0225	0.0024	H	19.77
Beans	-0.0025	0.0098	H	28.46
Potato	0.1861	0.0588	H	38.30
Raddish	0.3747	-0.0040	N	1.39
Carrot	0.0542	-0.0001	N	0.01
Onion	0.1486	0.0287	H	47.60
Pumpkin	0.1694	0.0166	H	11.36
Gourd	0.2422	0.0132	S	4.88
B. Gourd	0.0939	0.0161	H	8.20
Cucumber	-0.7574	0.2051	H	27.48
Brinjal	0.2137	0.0113	H	16.75
L. Finger	0.1210	0.0095	H	12.91
Palak	0.0469	0.0042	S	5.52
Ginger	0.0571	-0.0001	N	0.04
RAINY				
Cauliflower	0.1853	0.0077	H	21.98
Cabbage	0.3663	0.0018	N	0.76
Peas	0.1457	0.0077	H	24.63

Tomato	0.4070	0.0129	H	7.86
Capsicum	0.1850	0.0026	N	0.96
Garlic	0.2848	-0.0055	S	6.13
Beans	0.0646	0.0064	H	15.03
Potato	0.6376	0.0159	H	13.60
Raddish	0.3280	0.0039	N	2.38
Carrot	0.2363	-0.0024	N	1.39
Onion	0.5054	0.0074	S	5.68
Pumpkin	0.1105	0.0072	H	8.35
Gourd	0.3098	0.0110	H	15.69
B. Gourd	0.0635	0.0106	H	38.19
Cucumber	0.1436	0.0154	H	34.84
Brinjal	0.2890	0.0006	N	0.05
L. Finger	0.1587	0.0003	N	0.04
Palak	0.1301	0.0014	N	0.61
Ginger	0.0193	0.0008	S	3.91
WINTER				
Cauliflower	0.4738	0.0024	N	0.81
Cabbage	0.2596	0.0123	H	16.93
Peas	0.1274	0.0141	H	26.87
Tomato	0.1239	0.0372	H	45.90
Capsicum	0.0872	0.0023	N	1.23
Garlic	-0.0648	0.0086	H	10.18
Beans	-0.0257	0.0045	H	7.64
Potato	-0.1883	0.0948	H	59.67
Broccoli	-0.0039	0.0007	N	1.46
Raddish	-0.0395	0.0241	H	13.64
Carrot	0.0967	0.0290	H	19.41
Onion	0.0574	0.0361	H	38.86
Pumpkin	0.1129	0.0041	N	0.69
B. Gourd	0.0162	0.0009	N	0.78
Cucumber	0.1074	-0.0020	N	1.67
Brinjal	-0.2499	0.0193	H	44.24
L. Finger	-0.0122	0.0020	S	3.94
Palak	-0.4542	0.0424	H	51.68
Ginger	-0.0812	0.0116	H	11.75
Mustard	0.0606	0.0069	N	2.68
Methi	-0.1358	0.0107	H	25.41
Soya	0.1589	0.0022	N	0.24

H, S refer to Significance at 1 and 5 %
N refers to Non-significance at 5 %

ANNEXURE VI

Table : Area and Production of different Vegetables in Haryana

Area: Hectares; Production: Tonnes

Year→	2000-01		2001-02		2002-03			2003-04			2004-05		
Vegetable	**Area**	**Prod.**	**Area**	**Prod.**	**Area**	**Prod.**	**Yield**	**Area**	**Prod.**	**Yield**	**Area**	**Prod.**	**Yield**
Potato	-	-	-	-	16880 (10.36)	402259 (17.92)	23.8	17911 (8.79)	440091 (16.29)	24.6	18425 (8.87)	441711 (14.82)	24.0
Onion	-	-	-	-	15900 (9.75)	340161 (15.15)	21.4	19897 (9.77)	294650 (10.91)	14.8	17179 (8.27)	352957 (11.84)	20.5
Tomato	-	-	-	-	13060 (8.01)	158810 (7.07)	12.2	14036 (6.89)	222815 (8.25)	15.9	13760 (6.62)	219701 (7.37)	16.0
Radish	-	-	-	-	11140 (6.83)	165150 (7.36)	14.8	13885 (6.81)	162845 (6.03)	11.7	14281 (6.87)	218572 (7.33)	15.3
Carrot	-	-	-	-	8410 (5.16)	147180 (6.55)	17.5	11613 (5.70)	194837 (7.21)	16.8	14795 (7.12)	232225 (7.79)	15.7
Cabbage	-	-	-	-	6660 (4.09)	95670 (4.26)	14.4	9069 (4.45)	118025 (4.37)	13.0	10398 (5.01)	165311 (5.56)	15.9
Cauliflower	-	-	-	-	14750 (9.06)	239700 (10.68)	16.2	17780 (8.73)	281310 (10.42)	15.8	16977 (8.17)	268812 (9.02)	15.8
Chillies	-	-	-	-	6410 (3.93)	50130 (2.24)	7.8	7958 (3.91)	61014 (2.26)	7.7	7949 (3.83)	66728 (2.24)	8.4
Lady Finger	-	-	-	-	11220 (6.88)	70300 (3.13)	6.3	12751 (6.26)	85576 (3.17)	6.7	12650 (6.09)	99963 (3.35)	7.9
Brinjal	-	-	-	-	8430 (5.17)	132250 (5.89)	15.7	10490 (5.15)	166000 (6.14)	15.8	10707 (5.15)	174559 (5.86)	16.3
Cucurbits	-	-	-	-	29200 (17.92)	224800 (10.01)	7.7	30483 (14.96)	309811 (11.47)	10.2	32162 (15.48)	350532 (11.76)	10.9
Leafy Vegetables	-	-	-	-	12230 (7.50)	146460 (6.52)	12.0	16402 (8.05)	170109 (6.30)	10.3	16445 (7.92)	164947 (5.53)	10.0
Peas	-	-	-	-	5860 (3.59)	50290 (2.24)	8.6	7247 (3.56)	69794 (2.58)	9.6	8700 (4.19)	80947 (2.72)	9.3
Arbi	-	-	-	-	-	-	-	658 (0.32)	10891 (0.40)	16.5	340 (0.16)	6365 (0.21)	18.7
Others	-	-	-	-	2850 (1.75)	22040 (0.98)	7.7	13560 (6.65)	113532 (4.20)	8.4	12982 (6.25)	137070 (4.60)	10.6
Total	133000	2100000	150200	2150000	163000 (100.00)	2245200 (100.00)	-	203740 (100.00)	2701300 (100.00)	-	207750 (100.00)	2980400 (100.00)	-

Figures in Parenthesis are percentages of total

Table : Area and Production of different Vegetables in Punjab

Area: Hectares; Production: M. Tonnes; Yield: MT/ha

Year→	2000-01			2001-02			2002-03			2003-04			2004-05		
Vegetable	**Area**	**Prod.**	**Yield**	**Area**	**Prod.**	**Yield**	**Area**	**Prod.**	**Yield**	**Area**	**Prod.**	**Yield**	**Area**	**Prod.**	**Yield**
Potato	70123 (49.86)	1371816 (58.69)	19.6	70500 (48.64)	1413876 (58.00)	20.0	71015 (47.87)	1427046 (57.13)	20.1	71900 (46.81)	1439654 (55.63)	20.0	72854 (45.92)	1470194 (56.82)	20.2
Onion	6040 (4.29)	129316 (5.53)	21.4	6855 (4.73)	147108 (6.04)	21.5	7030 (4.74)	151426 (6.06)	21.5	7060 (4.60)	152084 (5.88)	21.5	7413 (4.67)	159780 (6.13)	21.5
Garlic	1180 (0.84)	14337 (0.61)	12.1	1220 (0.84)	15320 (0.63)	12.6	1225 (0.83)	14976 (0.60)	12.2	1245 (0.81)	15223 (0.59)	12.2	1307 (0.82)	15810 (0.61)	12.1
Tomato	6850 (4.87)	165353 (7.07)	24.1	7282 (5.02)	175892 (7.22)	24.1	7286 (4.91)	175076 (7.01)	24.0	7382 (4.81)	179117 (6.92)	24.3	7751 (4.89)	187314 (7.24)	24.2
Brinjal	2350 (1.67)	33201 (1.42)	14.1	2453 (1.69)	34694 (1.42)	14.1	2460 (1.66)	34858 (1.40)	14.2	2485 (1.62)	35212 (1.36)	14.2	2609 (1.64)	37003 (1.43)	14.2
Cauliflower	3240 (2.30)	78041 (3.34)	24.1	3665 (2.53)	84951 (3.49)	23.2	4667 (3.15)	107088 (4.29)	22.9	5190 (3.38)	121866 (4.71)	23.5	5450 (3.44)	128092 (4.95)	23.5
Cabbage	1210 (0.86)	25184 (1.08)	20.8	1340 (0.92)	32894 (1.35)	24.5	2547 (1.72)	55811 (2.23)	21.9	2990 (1.95)	65536 (2.53)	21.9	3139 (1.98)	68802 (2.66)	21.9
Okra	1520 (1.08)	11418 (0.49)	7.5	1675 (1.16)	11839 (0.49)	7.1	1680 (1.13)	12644 (0.51)	7.5	1745 (1.14)	13136 (0.51)	7.5	1832 (1.15)	13790 (0.53)	7.5
Chillies	8250 (5.87)	13068 (0.56)	1.6	8895 (6.14)	14125 (0.58)	1.6	8990 (6.06)	14306 (0.57)	1.6	9150 (5.96)	14621 (0.56)	1.6	9608 (6.06)	15411 (0.60)	1.6
Peas	13640 (9.70)	80693 (3.45)	5.9	14385 (9.92)	86281 (3.54)	6.0	14500 (9.78)	86870 (3.48)	6.0	15950 (10.38)	95645 (3.70)	6.0	16748 (10.56)	100505 (3.88)	6.0
Musk-Melon	950 (0.68)	18713 (0.80)	19.7	980 (0.68)	19253 (0.79)	19.6	985 (0.66)	19043 (0.76)	19.3	995 (0.65)	19237 (0.74)	19.3	1045 (0.66)	20215 (0.78)	19.3
Water-Melon	150 (0.11)	3252 (0.14)	21.7	220 (0.15)	4771 (0.20)	21.7	228 (0.15)	4504 (0.18)	19.7	268 (0.17)	5321 (0.21)	19.8	281 (0.18)	5594 (0.22)	19.9
Vine crops	9640 (6.85)	127383 (5.45)	13.2	9830 (6.78)	130178 (5.34)	13.2	9955 (6.71)	143143 (5.73)	14.4	10250 (6.67)	147644 (5.70)	14.4	10763 (6.78)	154922 (5.99)	14.4
Root Crops	13410 (9.53)	262550 (11.23)	19.6	13450 (9.28)	263218 (10.80)	19.6	13595 (9.17)	248004 (9.93)	18.2	14065 (9.16)	279192 (10.79)	19.8	14769 (9.31)	205084 (7.93)	13.9
Other vegetables	2080 (1.48)	3020 (0.13)	1.4	2185 (1.51)	3179 (0.13)	1.4	2173 (1.46)	3255 (0.13)	1.5	2926 (1.90)	4623 (0.18)	1.5	3072 (1.94)	4863 (0.19)	1.3
Total	140633 (100.0)	2337345 (100.0)	-	144935 (100.0)	2437579 (100.0)	-	148336 (100.0)	2498050 (100.0)	-	153601 (100.0)	2588111 (100.0)	-	158641 (100.0)	2587379 (100.0)	-

Figures in Parenthesis are percentages of total

ANNEXURE VII

Table: Monthly Average Wholesale Price of some important Vegetables in Delhi Market

(Rs/q)

POTATO	January	February	March	April	May	June	July	August	Sept.	October	November	December
2001	168	214	297	455	547	605	632	732	752	818	748	440
2002	394	353	381	375	470	562	851	910	953	941	685	291
2003	228	218	215	210	254	350	552	642	671	601	378	252
2004	221	228	327	434	543	647	722	774	797	920	548	239
2005	262	281	311	482	487	530	524	526	770	819	866	573

CABBAGE	January	February	March	April	May	June	July	August	Sept.	October	November	December
2001	236	194	156	149	181	280	612	795	731	852	592	270
2002	269	262	226	246	256	309	962	855	546	617	509	325
2003	287	249	280	234	236	506	581	639	611	687	431	406
2004	344	306	292	264	251	306	360	456	422	579	622	284
2005	337	290	234	302	422	689	997	904	798	792	459	385

CAULIFLOWER	January	February	March	April	May	June	July	August	Sept.	October	November	December
2001	170	160	334	374	1466	1862	3064	2083	1107	874	594	245
2002	231	386	302	411	1564	2091	2994	1706	1125	617	360	283
2003	435	348	619	396	1055	1399	1651	1637	1436	1094	333	356
2004	412	362	414	885	1258	NA	2554	3323	1161	769	544	358
2005	631	308	251	629	839	1258	1515	1942	1552	973	344	504

(Rs/q)

PEAS	January	February	March	April	May	June	July	August	Sept.	October	November	December
2001	985	714	636	1621	2054	2137	2136	2225	3105	2337	2364	850
2002	574	485	720	1075	1966	2978	2627	2289	2973	2529	1859	746
2003	606	594	562	995	1615	1935	2653	2009	2360	2448	1601	887
2004	587	548	622	1202	1800	3112	1971	2790	2984	3013	1754	965
2005	828	663	797	1318	1619	2331	2564	2598	3058	3577	2648	1149

TOMATO	January	February	March	April	May	June	July	August	Sept.	October	November	December
2001	667	637	501	460	216	747	1085	1154	692	810	1084	816
2002	518	587	812	727	589	699	957	934	712	652	469	363
2003	485	518	672	575	512	402	1242	526	592	818	728	565
2004	504	580	550	488	284	709	1104	1286	735	1002	890	648
2005	569	543	620	608	388	210	909	1198	844	780	816	374

GARLIC	January	February	March	April	May	June	July	August	Sept.	October	November	December
2001	739	688	678	1192	2054	2280	2556	3003	3560	3415	4739	5456
2002	3944	3441	2284	1626	1988	1986	2181	2773	3766	3616	3227	2810
2003	2651	1987	1610	1250	1319	1294	1356	1136	1096	1196	1070	1316
2004	1770	1420	1660	1398	1494	1541	1325	1395	1656	1778	1705	1207
2005	1423	1302	942	1094	1278	1173	1522	1667	2248	1853	1912	2842

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