AGRICULTURAL INPUT SUBSIDIES IN INDIA: QUANTUM OF SUBSIDIES TO SC/ST FRMERS- A STUDY IN HIMACHAL PRADESH

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Executive Summary

Abstract *Subsidies are an integral part of fiscal policy in India. The total quantum of subsidies in India arose from Rs. 2028 crores in 1980-81 to Rs. 22800 crore in 2000-2001. Out of this amount agricultural subsidies constitute the major portion. The subsidies to agriculture sector provided by the government, have recorded phenomenal rise during the past two decades. Considering the present position of fiscal deficit of the central and state governments, states must focus on better targeting of agricultural subsidies. Recently, their role as an incentive to promote agricultural development has been a subject of debate among economists, policy makers and academia. This matter assumes greater significance in the context of on going economic reforms in India. Those favouring view the subsidies as an instrument of stimulating agricultural production and in attaining self-sufficiency. On the contrary, opponents view subsidies as an unnecessary government intervention, which impairs the efficiency of pricing by the market forces. The state government provides lot of subsidies to develop agricultural sector in the state. Keeping this fact in view, Govt. of India assigned a study to the States on " Agricultural Input Subsidies in India: Quantum of Subsidies to SC/ST Farmers". In Himachal Pradesh study reveals that, the total amount of subsidy on various item is Rs. 200.41 per farm at aggregate land, which vary into Rs. 304.87 in Solan district and Rs. 95.95 per farm in Mandi district. The category wise distribution of subsidy reveals that the maximum benefits have been availed by the large farmers followed by medium, small and marginal farms.*

Objectives of the Study: The present study has been conducted with the following objectives:

1. To examine the utilization patter of subsidies by different categories of farmers;
2. To assess the share of SC/ST farmers in total amount of subsidies used;
3. To analyse the overall effect of differences in the levels of input subsidy used by various categories of farmers on crop pattern, cropping intensity, adoption of improved technology, input use, crop productivity and returns.

Methodology

Because of higher concentration of SC/ST farmers in mid and high hill zones of Himachal Pradesh district Solan and Mandi where percentage of SC/ST farmers was highest with in the zone as well as state were selected fro the detailed study. Similarly one tehsil with higher percentage of SC/ST farmers was selected in district. Further from each tehsil one panchayat with similar criteria was chosen from where 50 households belonging to SC/ST and 50 from general category of farms were selected for final sample. The selected sample further was divided into four categories of farms i.e. marginal, small, medium and large (above 4.01 hectare). In all 200 households (100 belong to SC/ST and 100 to general category of farms) were selected for detailed study. The required field data was collected in pre-tested schedules through personal interview method.

The secondary data was collected from various Directorates i.e. Directorate of Land Records, Animal Husbandry, Horticulture, Agriculture, Food and Supplies and Rural Development and Panchayati Raj of Himachal Pradesh.

For calculating the quantum of subsidy used by particular farmers each respondent, was asked about the form (physical or financial benefit) of subsidy granted, its purpose, access, cost and benefits realized. Regarding food subsidy the respondents were asked about the access and the amount of wheat, rice, sugar, kerosene and other items bought from P.D.S. shop during the past two month and the problem faced by them. The study pertains to the calendar year 2000.

Main Findings

The following findings emerge out the study:

Agricultural Subsidies in the State In Himachal Pradesh food crops grown are found to be insufficient to meet the total food requirement of the region. Also, in the hilly areas, there is serious land degradation due to over grazing deforestation etc. Under these conditions to enhance the production as well as productivity the subsidies are essential to protect the interest of farmers. In Himachal all concerned department of agriculture

supplying subsidies either reimbursement of part of the cost of availability of input at lower price of supply of input at free of cost. The Directorate of Agriculture, Directorate of Horticulture, Directorate of Civil Supply, Directorate of Animal Husbandry and Directorate of Rural Development and Panchayati Raj are directly concerned with rural people and offered some subsidy in different form to rural poor. In Himachal Pradesh a subsidy of Rs. 4198.59 lakhs was dispersed through above-mentioned directorates. Directorate of Agriculture accounted for 47.88 per cent of the total subsidy followed by Directorate of Horticulture 26.91 per cent, Rural Development and Pnachayati Raj 14.77 per cent, Directorate of Food and Civil Suply 7.52 per cent and Animal Husbandry 2.92 per cent. On an average Rs. 764.19 were granted as per hectare subsidy on net area sown. Per worker Rs. 233.26 were granted as subsidy.

Disbursement of Subsidy in Solan District Subsidy granted by various departments in Solan district shows that Rs. 171.64 lakhs were dispersed in the district. Directorate of Agriculture was the main contributor which accounted 69.71 per cent of the total subsidy followed by Directorate of Rural Development and Pnachayati Raj (15.33 per cent) and Directorate of Horticulture (5.87 per cent). On net area sown Rs. 432.89 per hectare were granted as subsidy by govt., which is Rs. 262.27 per hectare on gross cropped area. As far as subsidy to per worker is concerned Rs. 128.09 were granted as subsidy whereas for agricultural worker the figure was Rs. 224.71 per head.

Disbursement of Subsidy in Mandi District Subsidy disbursement in Mandi district reflects that Rs. 375.79 lakh were granted as subsidy by various departments in which Directorate of Agriculture played a major role. Availability of subsidy on per hectare of net area sown was Rs. 438, which was reduced to Rs. 233.26 at per hectare of gross cropped area. As far as per worker availability of subsidy is concerned it was Rs. 129.19 in the district, which boiled down to Rs. 171.90 at the level of per agriculture worker.

Indirect Subsidy on Fertilizers The indirect subsidy on fertilizers was Rs. 41.47, Rs. 93.22 and Rs. 843.03 lakhs in district Solan, Mandi and Himachal Pradesh as a whole respectively. The per hectare and per worker subsidy was more in Himachal Pradesh as a

whole in comparison to Solan and Mandi District because decontrolled fertilizer use is lower in these districts on comparison to Himachal Pradesh as a whole.

Scenario of Total Subsidies (Direct & Indirect) Granted by Govt. to Farmers

A total subsidy of Rs. 213.11, Rs. 469.01 and Rs. 5041.62 lacs was distributed in Solan, Mandi and Himachal Pradesh respectively. Comparatively the share of direct subsidy was higher and was 80.54 per cent, 80.12 per cent and 83.28 per cent respectively in Solan and Mandi and Himachal Pradesh. The share of indirect subsidies was higher in Solan and Mandi district in comparison to state as a whole. The subsidy on per hectare net-cropped area, per hectare gross cropped area per worker in all streams and per agriculture worker, remained higher in Himachal Pradesh in comparison to Solan and Mandi districts.

An Overview of the Regions Under Study

Population There has been an increase in number of rural and urban male and female population of Solan and Mandi districts as well as in Himachal Pradesh. Density of population has increased from 51 in 1961 to 109 during 2001 in Himachal Pradesh. Like wise in Mandi District the density of population increased from 57 in 1961 to 228 during 2001 and in Solan district it increased from 123 in 1971 to 258 in 2001. Population growth in Solan has been observed to be higher than Mandi and Himachal Pradesh. The rural population was observed higher in Mandi district when compared to Solan and the state as a whole. The highest urbanization was in Solan district, which was about 20 per cent and was just double than the rest of the state. This is because of establishment of industries and diversification towards cultivation of cash crops. Population of male was higher in rural and urban areas of Solan district as well in Himachal Pradesh. In case of Mandi district the situation was quite different the lower sex ratio is popular in urban areas, which is similar to the situation generally observed in other urban areas of the country where males come from their rural areas to work and live alone. In education both male and female of Solan and Mandi district are advanced when compared to the state as a whole.

Workers Percentage of workers in the total population increased during 1991 as compared to 1981 in both the study districts and state as a whole and registering a growth

rate of 2.60, 1.92 and 2.07 per cent in Solan, Mandi and Himachal Pradesh respectively. The proportion of agricultural workers during 1981 to 1991 decreased constantly from 67.8 to 57.00 per cent, 77.75 to 75.16 per cent and 70.89 to 66.55 per cent in districts Solan, Mandi and Himachal Pradesh respectively.

Land Utilization The forest area has increased gradually and this increase has been observed highest in the state 30.61 per cent followed by Mandi district 14.49 percent and Solan district 3.09 per cent. The permanent pastures and grazing land is the most important single category of land utilization in Solan and Mandi district as well as Himachal Pradesh. Land put to non-agricultural uses has increased at a faster rate 34.36 per cent over 1982-83 to 1995-96 followed by Himachal Pradesh 17.50 per cent and Mandi 4.47 per cent. The net area sown during 1982-83 was 25.14, 23.37 and 18.35 per cent of the total geographical area, which decreased to 22.27 per cent, 23.68 per cent and 16.42 per cent during 1995-96 in Solan, Mandi and Himachal Pradesh respectively.

Cropping Pattern The area under food crops in State as a whole and study districts and account 94.18 per cent, 98.48 per cent and 96.39 per cent respectively during 1980-81 and remained almost stagnant after one and half a decade. Out of this 90 per cent accounts for food grains i.e. 85 per cent under cereals and 5 per cent under pulses in Himachal Pradesh.

Productivity The productivity data of important crops does not indicate any trends. The yield rates of all the crops are much below than the average yield of the country and hence there is vast scope for improvement in this direction.

Basic Features of Sample Farms Families & Working Force The average family size of sample is 4.85 persons per household. At overall level 65.89 per cent male and 66.26 per cent of female are workers. Higher number of workers has been observed in SC/ST population. In general category of farm agriculture alone absorb 60.71 and 54.55 of male workers in Solan and Mandi districts respectively whereas, this percentage for SC/ST is 66 and51.52 per cent of workers in Solan and Mandi district respectively.

Agriculture is the main secondary occupation for service and business class in the study areas.

Literacy At overall level among general category of household 91.53 per cent male and 75.68 per cent of female population is literate. Literacy among SC/ST farms families shows that it is 83.33 per cent among male and 60.96 per cent in female.

Holding Size About 92 per cent of the total farmers among SC/ST and 84 per cent in general category are marginal and small. Whereas 6 and 13 percent medium and 2 and 3 per cent are large land holder on SC/ST and general category of farms respectively. On an average at overall level average farm size of land is 1.27 hectare, whereas it is 1.83 hectare in Solan and 0.70 hectare in Mandi district. The average size of land holding of SC/ST category of farms is 0.75 hectare which is 1.26 and 0.25 hectare in Solan and Mandi district respectively.

Land Use Pattern In Solan district double crop use to be grown in all size of farms at overall level. Cropping intensity was 200 per cent in the district. At over all level cropping intensity in Mandi district has been worked out to be 190 per cent.

Cropping Pattern of Solan District Wheat and maize are the major important crops of the farmers and these two crops occupied more than 90% of G.C.A. on different size of farms. The other important crops are barley and tomato. The selected area is rainfed and H.Y.V. seeds of all crops area most popular in the study area, which covered more than 92% of G.C.A.

Cropping Pattern of Mandi District At overall level 88% irrigated area was found on general category of farms. Whereas these was no irrigated land with SC/ST households. About 10% of G.C.A. was irrigated which was below the state average irrigated area. At overall level the proportion of total area under H.Y.V. seeds was 93.8 per cent in wheat crop and 100 per cent in pea and paddy and 96.5 per cent in maize.

Cropping Patter of Solan and Mandi Districts At overall level 45.62 per cent of the area in G.C.A. was under wheat and maize respectively. The other important crops were barley pea, paddy and tomato. The 1.71 per cent area under wheat, 27.97 per cent of pea, 1.11 per cent of maize and 44.61 per cent of paddy was under irrigation.

Productivity of Important Crops in Selected Households of Solan and Mandi districts The productivity of selected farmers of all crops are much below the state average productivity as well as the district average productivity.

Utilization of Subsidies Agricultural subsidies to farmers in Himachal Pradesh is mainly of two types i.e. input subsidies and output subsidies. Input subsidies have been categorized as fertilizer, seeds, plant protection material etc. On the other hand output subsidies are given mainly on food grains. The present study is concerned with all type of subsidies. The per farm and per hectare subsidies availed on these items is as follows:

Per Farm Subsidy Availed on Fertilizers In Solan district per farm subsidy on fertilizer has been worked out to be Rs. 84.99 on general category of farms and Rs. 58.49 on SC/ST category of farms. While in Mandi district per farm subsidy on fertilizer for general category has been worked out to be Rs. 52.58 per farm whereas in case of SC./ST farms it is Rs. 23.23 per farm. The higher subsidy on general category of farms is mainly due to large size of holding in both the districts.

Per Hectare Subsidy Availed on Fertilizers In Solan district the level of subsidy availed on general and SC/ST category of farms is almost equal because fertilizer use is limited in the area. In Mandi district, the level of subsidy on all fertilizers availed by SC/ST categories is much higher than general category of farmers. This is because of the reason that SC/ST farmer are much aware, conscious and interested about farming and applying higher dozen of fertilizer than general category of farms.

Per Farm Subsidy Availed on Seed Subsidy on seed distribution has been worked out to be Rs. 175.68 on general category and Rs. 186.00 on SC/ST category of farms in Solan

district, which shows that SC/ST category of farmers using higher quantities of purchased seed in comparison to general category of farm. In Mandi district per farm subsidy on seed has been worked out to be Rs. 56.55 at over all level, which increased with the increase in size of farm. The level of seed subsidy on farm is almost equal on SC/ST and general category of farms.

Per Hectare Subsidy Availed on Seed In Solan district at overall level per hectare subsidy availed by farmer has been worked out to be Rs. 130.00. Marginal and small size of farms of general and SC/ST category availed higher subsidy as compared to medium and large category of farms. Per hectare subsidy at overall level in Mandi district has been worked out to be 61.62 which was Rs. 84.81 on marginal farms and Rs. 38.15 on small farms. The level of seed subsidy availed by SC/ST category was higher than that of general category of farms.

Per Farm Subsidy Availed on Plant protection Material In Solan district at overall per farm subsidy has been worked out to be Rs. 52.49, which was Rs. 64.32 on general category of farms and Rs. 40.66 on SC/ST category of farms. The higher subsidy on general category of farm was because of higher area under commercial crops in comparison to SC/ST farmers of respective category. In Mandi district the use of plant protection material was very limited on all size of farm as well as in general and SC/ST farmers. This is mainly due to negligible area under vegetable and other commercial crops. At overall level subsidy on plant protection material has been worked out to be Rs. 1.48 in Mandi district.

Per Hectare Subsidy Availed on Plant Protection Material In Solan districts per hectare subsidy at overall level has been worked out to be Rs. 37.76 on plant protection material. Analysis shows that per hectare subsidy has inverse relation with farm size. The similar trend is followed in general and SC/ST category of farms. But in Mandi district per hectare trend had direct relation with farm size.

Per Farm Total Amount of Subsidy At overall of both the districts together, per farm value of subsidies availed by a farmers is Rs. 200.41 which was Rs. 217.46 on general category and Rs. 182.66 on SC/ST category of farms. The maximum benefits of subsidy are availed by large size class in both the categories. General category of farmers were availing subsidy at the rate of Rs. 625.23 whereas, it is Rs. 1151.52 on SC/ST category of farms. The farm size have positive relation with subsidy in both the categories because of the reason that subsidy has been distributed on the basis on land. In Solan district subsidy availed by general category of farm was higher (Rs. 324.99) in comparison of Rs. 285.15 to SC/ST farms. In Mandi district per farm total subsidy at overall level was Rs. 95.95. The subsidy availed by SC/ST farmer was higher than general category of farmers.

Per Hectare Total Amount of Subsidy At overall level per hectare subsidy was higher in SC/ST category of farms (Rs. 248.99) in comparison to general category (Rs. 198.55) per hectare subsidy was higher on marginal farms at both the categories. In Mandi district per hectare subsidy availed by SC/ST farmers was more than double as compared to general category of farmers.

Per Farm Cost and Returns with and Without Subsidy in Solan District At overall level cost of cultivation without subsidy increased by 1.88 per cent. This increase was 1.19 per cent on large farm to 3.31 per cent on small farm. On the other hand the net returns decreased by 3.05 per cent.

Per Hectare Cost and Returns with and Without Subsidy in Mandi District For general category of farm the production cost has increased by 1.13 per cent at overall level and net returns have been decreased by minus 1.59 per cent. Like wise the same for SC/ST, production cost increased by 2.34 per cent and net returns decreased by minus 3.65 per cent. Study shows that the affect of withdrawing subsidy is more on SC/ST farms than general category of farms.

Per Hectare Costs and Returns with and without Subsidies in Solan and Mandi Districts In general category cost of cultivation increased by 1.69 per cent without

subsidy and net returns decreased by 2.52 per cent. In case of SC/ST the cost has increased by 2.51 per cent and net returns decreased by 3.97 per cent. The analysis shows that SC/ST farmers are more affected severely by withdrawing subsidies as compared with general category of farms.

Share of Subsidies Among SC/ST Farms in Solan District More than half (52.96 per cent) of the subsidies have been utilized by general category of farm. In all general category of farms have utilized higher proportion of subsidies except large size of farm.

Share of Subsidies Among SC/ST Farms in Mandi District 57.83 percent subsidies is utilized by SC/ST farmers

Share of subsidy Among SC/ST Farmers in Solan and Mandi Districts A total subsidies of Rs. 39810 has been granted by Govt. to farmers out of which Rs. 21545 and Rs. 10265 have been utilized by general and SC/ST category respectively.

Quantity of Sugar Purchased The quantity sugar allowed to a family depends upon number of family member in a household. A limit of seven hundred gram per unit of sugar is allowed per month in both the study areas.

Quantity of Wheat Purchased At overall level in both the districts 22.76 kg. of wheat has been purchased by a family within two months. The wheat purchased by SC/ST is higher than general category of farm.

Quantity of Kerosene Purchased None of the households in both the districts prepare food on Kerosene. They purchased about 1 liter of Kerosene per month to burn chulha only.

Cropping Pattern In Solan and Mandi districts wheat and maize are the most important field crops and covers about 85 to 90 per cent of the gross cropped area. Oil seeds and pulses are totally absent and not grown by any type of sample farmer. The cropping

pattern its almost the same for high and low subsidy groups for both general and SC/ST farmers.

Effect of Subsidies of Fertilizer Consumption Among various agricultural subsidies, fertilizer subsidy is the next largest to food subsidy. The level of fertilizer consumption on general and SC/ST category of farm is almost equal because fertilizer use is limited due to rainfed conditions. But in Mandi district SC/ST category of farmers were using more fertilizer in comparison to general category of farm in all crops.

Proportion of Fertilizer on Important Crops In Solan and Mandi district about more than 90 per cent of the total fertilizer used is shared by wheat and maize.

Crop wise Input Use In both the study areas subsistence farming is practiced where human labour and bullock labour are the import out inputs in all crops except ginger.

Share of Different Crops in Total Input Utilization on Farm Though general category wheat and maize are the important crops but other crops like in cereals, tomato, other vegetables and ginger are also grown. In SC/ST category about 80 per cent inputs are shared by maize and wheat and rest about 20 per cent shared by all other crops in both the study areas.

Cost and Returns From Maize Cost and returns are higher on higher subsidy group of farms. The returns are positive on all costs in both the study areas as well as in general and SC/ST farms as well as for with and without subsidy conditions.

Costs and Returns From Wheat Returns over cost are positive on all type of farm i.e. SC/ST and general category of farms as well as for with and without subsidy position which shows that this crop is viable in both the study districts.

Problems in Availing subsidy In Himachal Pradesh, the use of fertilizers, HYV, seeds and plant protection material is limited. These inputs have significant gap between recommended and existing doze of inputs in various crops.

1. High Prices Most of the respondent in both general and SC/ST category of farms complaint that fertilizers, HYV seeds and plant protection material are costly. At overall level of district Solan and Mandi together 85.50 per cent are complaining about high prices.

2. Long Distance About 50.44 percent of the farmers at overall level complaint regarding long distance. This problem is more in Solan district in comparison to Mandi district.

3. Low capacity to Buy At overall level 79 per cent farmers complaint regarding low purchasing power. This problem is more in SC/ST than general category of farms in both the study districts.

4. **Scarcity of Credit** At overall level 68 per cent replied that there is a scarcity of credit and it is higher in Mandi district than that of Solan district.

5. Distance of P.D.S. Shops From Residence of Respondents A very few farmers walk more than 2 km. in both the district to purchase household goods.

6. Response Regarding Supply of P.D.S. Goods About 60 per cent of respondents thought the supply to be regular.

7. Response Regarding Assessment of Quality of P.D.S. Generally normal quality of goods is supplied by P.D.S. shops.

8. Response Regarding Quantity of P.D.S. Goods At overall level in both the districts together 27, 46,27 present of respondents are in view that quantity is sufficient, low and normal respectively.

9. Response Regarding Prices of P.D.S. Goods At overall level in both the districts half of the respondents are of the views that prices are high.

Suggestions

The following suggestions are forwarded to make the input subsidy programme more effective and meaningful.

1. Presently subsidized input is supplied at block headquarter in the producing areas. In this connection the beneficiaries have to visit block head quarter many times to get the inputs. It is therefore, suggested that the sale centres of subsidized inputs should be located at panchayats level.

Attention Directorate of Agriculture, Directorate of Horticulture, Directorate of Animal Husbandry and all Directorate of State Government related rural people.

2. The inputs like fertilizers, fungicide, insecticide and seeds are distributed through Government/Cooperatives and through a very few private traders supplying these inputs in the producing areas. This encourages monopoly in input market leading to exploitation of marginal and small farmers particularly of SC/ST. It is therefore, suggested that the licensing procedure may be liberalized. The license for trading in these inputs should be given to unemployed agricultural graduates in the producing areas.

Attention Directorate of Agriculture Government of Himachal Pradesh.

3. The pattern of fertilizer subsidy is uniform among all the farmers irrespective of their size of holding. Moreover, there is no limit imposed for the quantities, which can be purchased under this programme. This leads to large farmers cornering the higher amount of subsidy (in absolute term). This is contrary to the main aim of the programme to provide more benefits to the marginal/small and socially backward farmers. Therefore, input should be provided on higher subsidy to these farmers than large farmers on there should be restriction on the quantities, which can be purchased under this programme so that the basic aim is not defeated.

Attention Directorate of Agriculture Government of Himachal Pradesh.

4. It was reported by the farmers that the material supplied under subsidy programme particularly insecticide pesticide is of sub-standard quantity. It is therefore, suggested that the special wing for quality control of material supplied should be set up.

   Attention Directorate of Agriculture, Directorate of Horticulture Government of Himachal Pradesh.

5. The total cropped area under cash crops should be increased not only because these crops as compared to food grain crops are economically more viable, but it also takes care of the problem of surplus labour as well as raising of cash crops needs intensive agricultural operations as well as subsidized inputs during the crop period.

   Attention Directorate of Agriculture, Government of Himachal Pradesh.

6. Since small and marginal farmers plight a very pathetic and most of them live in the lowest range of poverty particularly SC/ST, which ultimately affects the farm productivity. The purchased input utilization of these farmers is megre. Therefore, the state government should impart a large-scale financial package with training to several individual farmers to enhance their knowledge of arm management as well as to some ancillary occupation. It is probably reasonable to assume that the present credit institutions have the financial ability to serve the need to the group. This matter would be subject to review after the training programme has progressed to a certain extent to ascertain that the farmers make proper use of credit and subsidy facilities for increasing their farm family income.

   Attention Government of Himachal Pradesh.

7. The farm size of marginal farmers is very small in both the study areas and these tiny holdings are highly unviable. Therefore, a liberal subsidy should be offered to these farmers to enhance the production & productivity. Attention Government of Himachal Pradesh.

CHAPTER – I

INTRODUCTION AND METHODOLOGY

1.1 Introduction Subsidies are an integral part of fiscal policy in India. The total quantum of subsidies in India rose from Rs.2028 crores in 1980-81 to Rs.22800 crores in 2000-2001. Out of this amount, agricultural subsidies constitute the major portion. The subsidies to agriculture sector provided by the Government, have recorded phenomenal rise during the past two decades. Considering the present position of fiscal deficit of the central and State Governments, states must focus on better targeting of agricultural subsidies. Recently, their role as an incentive to promote agricultural development has been a subject of debate among economists, policy makers and academia. This matter assumes greater significance in the context of on going economic reforms in India. Those in favour of this policy view, subsidies as an instrument of stimulating agricultural production and in attaining self sufficiency. On the contrary, opponents view subsidies as an unnecessary government intervention, which impairs the efficiency of pricing by the market forces. Not only this, they emphasize that the government should improve the efficiency of supply system through investment in irrigation and other support services. Given the high fiscal deficit situation, there is no escape in the long run from cost pricing the supplies of the inputs, keeping subsidies selective, limited and specifically targeted for weaker sections only rather than enmass.

Subsidies to Indian agriculture are provided directly and indirectly. The former type of subsidies are operated under various schemes for promoting the adoption of new technology and to make available essential factors of production at lower costs. These have formed only a small fraction of the total subsidies granted to agriculture. The major objective of these subsidies is to induce the farmers to adopt new technology. These are usually made available to small, marginal and SC/ST farmers. Here the transfer payments under subsidy are direct and reach the ultimate beneficiary through a formal pre determined route. The success of direct subsidies is linked to availability of irrigation, fertilizer and power in the form of factors, which are conductive for such policy initiatives. There is a general complaint that a major portion of these subsidies is going to irrigated areas of those who own large share of land. Apart from irrigation, fertilizer and power credit is also subsidized. Output prices are kept higher than those that would have prevailed in the

absence of restrictions on trade. Along these, farmers as consumers are also supplied wheat, rice, sugar and kerosene at lower prices through food subsidy under PDS.

The analyses of subsidies presented in macro studies (Acharya, 2000; Srivastva and Sen, 1997, Mundle Sudipto and Gobind Rao, 1991; Gulati, 1989; Subbarao, 1986) at the all India and state levels fail to address a number of subsidy related issues which come into focus only when detailed data are analysed at the level of the farm households. Realising this, some scholars have undertaken micro studies (Deshpande, 1998; Ray, 1987; Joshi and Agnihotri, 1982; Jagannathrao and Pawar, etc. 1982; Mohan, Elango and Manoharan, 1982; Ray and Maji, 1982). These micro studies are focused on a particular subsidy and hence, do not give an idea about the overall impact of important agricultural subsidies on different categories of farmers. The SC/ST farmers are, by and large, ignored and their problems are overlooked. This is also important from the point of view of resource inadequacy of the small, marginal and SC/ST farmers. This underlines the urgency of ensuring subsidies of the intended groups and making adequate cost recoveries from those with higher purchasing power so that the prevailing levels of social and economic services, which are abysmally low, can be expanded to satisfactory levels.

Against the backdrop of growing budgetary allocation of providing subsidies to agriculture, an analysis of their implications for different classes of farmers is of crucial importance in order to assess the extent to which they are consistent with the attainment of set objective of attaining equity and stimulating growth. For this, there is a need to know the quantum of subsidies used and the differential effect of subsidies across different groups of households at the micro level. The adverse effect of such policy, if any, on the small, marginal, SC/ST groups could then be corrected by designing proper compensatory programmes. The non-availability of data pertaining to the pattern of agriculture subsidies used by different socio-economic groups at micro level constrains researchers and policy makers to have a clear understanding of the effect of these policies. In Indian agriculture the hilly regions are some of the most economically backward areas of India. In this hill track the Himalayan regions cover more than one-eighth of the total land area of the country, and makes up the entire northern boundary running from Jammu and Kashmir in the west to Arunachal Pradesh in the east. These hills are sparsely populated and are away from the main stream. In these

hilly regions, land holdings are small, being less than 0.15 hectare per capita and have limited irrigation facilities.

Among these hilly regions, Himachal Pradesh has made gigantic strides in the production of agriculture crops including commercial crops during the past. This has resulted in increased farm income and ultimately a better level of living of the masses. With this realization a number of new programmes have been launched in the state with a view to accelerate the pace of development. The State Government provides lot of subsidies to develop this sector in the State. This has further encouraged the farmers of the state to take up agriculture as a vocation. Subsidies provided to agricultural development have direct impact on the adoption of new technology and increased farm production, employment and investment.

With a view to ascertain the ground reality in the context of agricultural subsidies and its effects on SC/ST farmers, the present study has been undertaken with the guidelines provided by the Ministry of Agriculture, Govt. of India.

1.2 Objectives

The broad objectives of the study are:

1. To examine the utilization pattern of subsidies by different categories of farmers.
2. To assess the share of SC/ST farmers in total amount of subsidies used
3. To analyze the overall effect of differences in the levels of input subsidy used by various categories of farmers on crop pattern, cropping intensity, adoption of improved technology, input use, crop productivity and returns.

1.3 Methodology

In Himachal Pradesh agriculture is practiced between 400 meters to 4000 meters above mean sea level. The Directorate of Land Records of Himachal Pradesh has divided the state into three zones i.e. low, mid and high hill zone according to alleviation above mean sea level.

Among above mentioned zones the number of SC/ST was observed higher in mid and high hill zone from where two districts Solan and Mandi respectively were selected for detailed study. On similar consideration i.e. density of SC/ST population one tehsil in each district was purposely selected. This was Chachiot in Mandi and Krishan garh in Solan were selected. Further, one panchayats in each tehsil was selected again on high density of SC/ST. From selected panchayats 50 households belonging to SC/ST and 50 from general category were selected for the final sample. The selected sample was divided into four categories of farms i.e. marginal (land holding up to 1 hectare), small (land holding from 1.01 to 2 hectare), medium (land holding from 2.01 to 4 hectare) and large (above 4.01 hectare). The details of the distribution of sample households among different category of farms is given in Table No.1. In all 200 households i.e. 100 belonging to SC/ST and 100 to general category were selected for detailed study.

Table: 1 Distribution of Sample Respondents.

Farm Size	SC/ST category		General category		All	
	No	%	No	%	No	%
Solan District						
1. Marginal (up to 1 hect.)	30	60.00	21	42.00	51	51.00
2. Small (1.01 to 2 hect.)	12	24.00	13	26.00	25	25.00
3. Medium ((2.01to 4 hect.)	6	12.00	13	26.00	19	19.00
4.Large (above 4.01 hect.)	2	4.00	3	6.00	5	5.00
Total	50	100.00	50	100.00	100	100.00
Mandi District						
1. Marginal (up to 1 hect.)	49	98.00	33.00	66.00	82	82.00
2. Small (1.01 to 2 hect.)	1	2.00	17.00	34.00	18	18.00
3.Medium (2.01to 4 hect.)	-	-	-	-	-	-
4.Large (above 4.01 hect.)	-	-	-	-	-	-
Total	50	100.00	50	100.00	100	100.00
Solan and Mandi district						
1. Marginal (up to 1 hect.)	79	79.00	54	54.00	133	66.50
2. Small (1.01 to 2 hect.)	13	13.00	30	30.00	43	21.50
3. Medium (2.01 to 4 hact.)	6	6.00	13	13.00	19	9.50
4.Large (above 4.01 hect.)	2	2.00	3	3.00	5	2.50
Total	100	100.00	100	100.00	200	100.00

The required field data was collected from the selected households in pre-tested schedule through personal interview method. In addition to primary data, the secondary data was collected from various Directorates i.e. Directorates of Land Records, Animal Husbandry, Horticulture,

Agriculture, Food and Civil Supplies and Rural Development and Panchayati Raj of Himachal Pradesh. Since, the data on subsidy distributed to various categories of farm is not available at above mentioned Directorates hence, the information on subsidies have been presented at state as well as selected district level. For calculating the quantum of subsidy used by particular farmer the following procedure was adopted.

1.3.1 Direct Subsidies

Direct subsidies are implemented through various schemes to agricultural sector by the government. A list of schemes, their coverage, amount spent and number of beneficiaries in each class (SC and non SC) obtained from the State Department of Agriculture so that share of each schemes in total expenditure could be made. It includes direct subsidies for different crops, animal husbandry, irrigation equipment, poultry, etc.

Often, some of these schemes are crop specific, some are machinery specific, some are for drip and sprinkler irrigation and some are specifically for weaker sections. These subsidies are granted on improved or high yielding variety seeds, plant protection chemicals, improved agricultural implements, supply of minikits containing seeds, fertilizers and plant protection chemicals for certain specific crops. At farm level, each respondent was asked about the form (physical or financial benefit) of subsidy granted, purpose, access, cost and benefits derived.

1.3.2 Indirect subsidies

It was proposed by coordinator to confine the study to the study of three major indirect input subsidies, viz., fertilizer, irrigation and power in present study. In Himachal Pradesh indirect subsidy is given only on fertilizer hence, only this aspect has been studied in detail. In case of irrigation and power its use on subsidy is significant in state.

Fertilizer

The Govt. of India has provided special concession (amount) on decontrolled NPK fertilizer. These concessions are provided to the farmers through manufactures as they supply fertilizer directly to these farmers on reduced retail prices. After the verification of bills/claim of the quantity supplied, the GOI releases this concession directly to the manufacturer.

Table:1 .2 The Indirect Subsidy in Case of Fertilizers.

Name of Fertilizer	Rate of Concession Rs/MT			
	1st quarter	2nd quarter	3rd quarter	4th quarter
N.P.K. 12:32:16	3831	3356	3535	3672
N.P.K. 15:15:15	2810	2456	2628	2722
Single super phosphate	800	800	800	800
Murate of potash	2900	2900	3200	3200
Diammonium phosphate DAP	4450	4450	3900	4100

1.3.3 Food Subsidy

In this case, a respondent was asked about the access and the amount of wheat, rice, sugar, and any other item bought through PDS during the past two months and the problems faced by him.

For studying the effect of input subsidies on SC/ST farmers, non SC/ST farm households have been classified into two categories (low and high) on the basis of amount of input subsidies granted by the Govt. The different parameters indicating the effect (crop pattern, crop intensity, adoption of improved technology, input use, cost of production and productivity, returns per hectare) have been compared across these groups.

1.4 Cost Concept Used (Farm Management Criterion)

The analysis of data pertaining to the cost of cultivation of important crops has been carried out by using different cost concepts i.e. Cost A, Cost B and Cost C. These costs include the following items.

Cost A, it included the item such as:

i. Wages of hired human labour
ii. Charges of owned and hired bullock labour
iii. Value of seeds (farm produced and purchased)

iv. Value of manure, fertilizers, plant protection chemicals

v. Expenditure on irrigation

vi. Depreciation of implements, machinery, farm building etc. and hiring charges of implements

vii. Land revenue and other Cesses

viii. Interest on working capital

Cost B, the cost B is derived by including the rental value of land and interest on fixed capital to Cost A

Cost C, this cost includes cost B plus imputed value of family human labour

1.5 Reference Year

The reference year for the study is calendar year 2000.

CHAPTER – II

AGRICULTURAL SUBSIDIES IN THE STATE – AN OVERVIEW

2.1 Subsidies

Taxation and subsidies are vehicles for inter-personal and/or inter-sectoral transfer of resources and/or income. The social justification of the subsidy is that it would eventually result in more equitable distribution of income. The justification gets strengthened if the subsidies promote agricultural development besides equitable distribution of income. Barker and Hayami (year) argued that to attain the goal of food self-sufficiency, government adopts short-term policies such as support prices of products and input subsidy to stimulate the producers to increase their food production along existing production functions.

The use of subsidies for agricultural development has been in vogue in India since independence. Subsidies are no doubt among the most important non-price incentives for inducing the individual cultivators to adopt certain improved agricultural practices and make increased investment in farming. Subsidy implies a limited amount of assistance which has to be supplemented by the beneficiary. Grant of subsidies renders the price of new inputs or the cost of new development activity to beneficiaries/individuals/institutions as more attractive, thereby overcoming resistance to or initiation towards the new inputs/programmes on account of the risk and uncertainty associated with these programmes. Subsidy generally places the price of new inputs or the cost of new development activity within reach of farmers of small means and thus helps to remove the limitation imposed by their low investment capacity. Thus, the beneficiaries are induced to undertake medium and long-term investments needed for achieving larger production. In other words, subsidies are designed either to compensate for the high cost or are in the nature of a promotional measure (India, 1976).

In Himachal Pradesh food crops are grown where the terrain permits. The production of these crops is insufficient, except fruit and vegetables, to meet the total food requirement of this region. Also, in the hilly areas, there is serious land degradation due to over grazing, deforestation etc.

Under these conditions to enhance the production as well as productivity the subsidies play an important role. The subsidy granted by different departments is presented in Table 2.1, 2.2 and 2.3 in respect of state as a whole along with study districts i.e. Solan and Mandi respectively.

2.2 Subsidies Granted by Directorate of Agriculture

The major proportion of subsidies granted by the department of agriculture is on seed, fertilizer, plant protection, implements, construction of tank, small irrigation and biogas plants. The amount of subsidy on these items was Rs.2009.83 lakhs during 2000-2001 which is 47.88 percent of the total subsidy distributed by all departments. The selected details of each subsidy is as follows:

2.2.1 Subsidies on Seeds: Directorate of agricultural offered 50 per cent subsidy on all important crop seeds purchased through department for distribution to the schedule cast, schedule tribe, backward area and members of IRDP family alongwith small and marginal farm families. For this purpose a subsidy of Rs. 670.64 lakh was granted during 2000-2001 which is 15.97 per cent of total subsidies granted during the period.

2.2.2 Fertilizer Subsidy: During the year 2000-01 the cost of fertilizer and subsidy on transport born by Govt. was on the following pattern.

1. The subsidy on Can, Urea and Ammonium Sulphate fertilizers was @ Rs.405 per MT. or (Rs. 20.25 per bag of 50 kg).
2. On complex fertilizer NPK (12:32:16) @ Rs.740 per MT or Rs.37/- per bag.
3. On complex fertilizer NPK (15:15:15) @ Rs. 620 per MT or Rs. 31/ per bag.
4. 50 per cent cost subsidies provided to tea planters on ammonium sulphate, SSP and murate of potash fertilizers but supply is restricted up to 3 bags per farmers.
5. 100 per cent transport subsidy provided for ex-ware house/rail head or factory to block head quarter and Himfed Godown to retail sale point on all type of fertilizers except urea which is controlled fertilizer.
6. On urea 100 per cent transport subsidies provided from Block head quarters (Himfed Godown to retail point). These subsidies were provided to all the farmers irrespective of cost and size of holding. A subsidy of Rs.72.37 lakh was provided to the farmers in the state which is 20.79 percent of the total subsidies granted to farmers by all departments.

2.2.3 Subsidies on Plant Protection

Directorate of Agriculture bears 50 per cent cost of plant protection material purchased for distribution to schedule cast, schedule tribes and farmers belonging to back ward area. Similar system for distribution of subsidy is followed to marginal and small farmers. Similarly for medium and large farmers department bears 30% cost of the plant protection material. By this criteria Rs.81.32 lacs distributed to different size of farmers which accounts for 1.54 per cent of the total subsidy granted by all departments.

2.2.4 Subsidy on Implements

Directorate of Agriculture bears 50 per cent cost of agriculture implements purchased by the farmers through agriculture department. During 2000-2001 Rs.102.65 lacs were distributed through this programme which amounts to 2.44 percent of the total subsidy granted to farmers by various departments.

2.2.5 Construction of Tank

A subsidy of Rs.8000/- provided to construction of a tank which use to be constructed under departmental common guidelines on a minimum water capacity of tank as per norms fixed by the department. At the same time the state is spending 10 to 20 lacs of rupees for the construction of small irrigation scheme under Rural Infrastructure Development Funds to a group of farmers. Such small irrigation schemes are generally constructed by P.W.D. on public demand. For construction of tank a sum of Rs.88.10 lacs were spent during 2000-2001 which is 2.10 percent of the total subsidy. On the other hand for small irrigation Rs.167.02 lacs were sanctioned which accounts 4 per cent of the total subsidy granted by various departments of the state.

For construction of biogas plant Rs.51.40 and Rs.101.60 lacs were distributed during 2000-2001 by central and state govt. During this period rupees 27.73 lacs were distributed to the beneficiaries which accounts 0.66 per cent of the total subsidy.

2.3 Subsidies Granted by Directorate of Horticulture

The major portion of subsidies granted by Directorate of Horticulture goes to fungicide/insecticide, drip irrigation, corrugated fiber board cartons, plastic crates, transportation of

eucalyptus and poplar boxes, flouriculture and plant protection equipments etc. Among these items the subsidy on corrugated fiber board cartons was Rs. 735.78 lacs during 2000-2001 and were distributed to different size of orchards which accounts for17.52 per cent of the total subsidy given by various departments of the state. The fungicide/insecticide accounted for 8 per cent of the total subsidy. The subsidies on carton was provided at the following rates:

Telescopic carton 20 kg. – Rs. 8 to Rs.10 per carton
Telescopic carton 10 kg. Kullu – Rs. 4 to Rs.5 per carton
Strawberry carton -- Rs. 3.00 per carton
Plum carton -- Rs. 1.50 per carton
Almond carton -- Rs. 1.00 per carton

2.4 Subsidies Granted by Food and Supplies Department

The food and supply department distributed subsidy on wheat & levy sugar which amounted to Rs.315.96 lacs during 2000-2001 and was 7.52 per cent of the total subsidies granted by various concerned departments of the state. Item-wise subsidy granted by various departments has been presented in Table 2.1.

Per month scale of various essential commodities that will be available for sale to the Public through fair price shops to the entitled card holders are as follows.

Targeted Public Distribution System:

Sr. No.	Category	Name of Commodity	Scale of issue per month
1.	APL	Wheat/Wheat flour	12 kg. per head
		Rice	12 kg per head
		Levy sugar	700 grams per head
		Edible oil	2 kg. upto 5 member family and 3 kg above 5 member family
		Kerosene oil	(i) 5 Litres per ration card for a family having DBC in subsldized areas. 10 litres per card for a family having Single Barrel LPG Connection in subsidized areas and 3 litres in non-subsidized areas, 25 litres per ration card for a family having no LPG connection in subsidized areas and 20 litres in non-subsidized areas.
2	BPL	Wheat	10 kg. per family
		Rice	10 kg. per family
2. Antodaya Anna Yojna:			
		Wheat	10 kg. per family
		Rice	15 kg. per family
3. Annapurna Scheme			
		Wheat	10 kg. per head

Note: Intimation regarding enhanced supply of any of the items during festival Seasons etc. will be given wide publicity.
- APL = Above poverty line, - BPL – Below poverty line.

2.5 Subsidies Granted By Directorate of Animal Husbandry

The department provides 50 per cent subsidy on foot and mouth disease, vaccine given to the animals. The medicines worth of Rs. 1 crore for animal husbandry was supplied whereas 96 thousand rupees were spent on poultry during 2000-2001 which is completely a subsidy.

2.6 Subsidies Granted by Directorate of Rural Development & Panchayati Raj :

Under Swarn Jayanti Swaraj Yojna a budget of Rs.903.95 lacs was allocated during 2000-2001 out of which Rs.620.03 lacs were granted under subsidy and accounts 15 per cent of total subsidy granted by concerned departments of the state.

Table 2.1: Item-wise Subsidies Granted by Various Departments to Farmers in Himachal Pradesh During 2000-2001.

Item of subsidy	Total Expenditure in lakhs			Subsidy Granted	
	Central Govt.	State Govt.	Total	In Rs. lakhs	Percentage
1. **Subsidies Granted by Directorate of Agriculture**					
Seed	298.56	960.53	1249.09	670.64	15.97
Fertilizer	3.00	1106.15	1109.15	872.37	20.79
Plant protection	11.00	100.19	111.19	81.32	1.94
Implements	13.50	157.65	171.15	102.65	2.44
Construction of tank etc.	-	88.10	88.10	88.10	2.10
Small irrigation	22.53	144.19	167.02	167.02	3.98
Bio gas plant	51.40	101.60	153.00	27.73	0.66
Total	399.99	2648.71	3048.70	2009.83	47.88
2. Subsidies Granted by Directorate of Horticulture					
Fungicide/insecticide	90.00	257.35	347.35	335.90	8.00
Drip irrigation	15.10	-	15.10	1.66	0.04
Corrugated fiber box	-	735.78	735.78	735.78	17.52
Plastic crates	31.41	-	31.41	31.41	0.75
Transport subsidies on Imports of eucalyptus/ poplar box	-	2.10	2.10	2.10	0.05
Floriculture	6.89	-	6.89	5.59	0.13
Plant protection equipment/mushroom	20.97	-	20.97	17.37	0.42
Total	164.37	995.23	1159.60	1129.81	26.91
3. Subsidies Granted by Directorate of Food & Supplies					
Wheat/wheat flour	-	146.96	146.96	146.96	3.50
Levy sugar	-	169.00	169.00	169.00	4.02
Total	-	315.96	315.96	315.96	7.52
4. Subsidies Granted by Directorate of Animal Husbandry					
Foot and mouth Disease vaccine	9.00	9.00	18.00	18.00	0.43
Fodder seed	-	4.00	4.00	4.00	0.09
Medicine of animal	-	100.00	100.00	100.00	2.38
Poultry	-	0.96	0.96	0.96	0.02
Total	9.00	113.96	122.96	122.96	2.92
5. Subsidies Granted by Directorate of Rural Development & Panchayati Raj					
Total under Swarn Jayanti Gram Swarj Yoga	245.91	658.04	903.95	620.03	14.77
Grand total 1+2+3+4+5	819.27	4731.90	5551.17	4198.59	100.00

Source: Various mentioned Directorates of Himachal Pradesh

2.7 The Disbursement of Subsidies in Solan District:

The subsidy granted by various departments in district Solan (Table 2.2) was to the tune of Rs. 171.64 lacs. The Directorate of Agriculture accounted for a subsidy of Rs.119.63 which was 69.71 per cent of the total subsidy dispersed. Due to limited horticultural activities the Directorate of Horticulture granted a subsidy of only Rs. 10.08 lacs which was Rs.5.87 per cent of the total subsidy disbursed. The data on levy sugar was not available because its distribution is through Swarn Jayanti Gram Swarojggar Yojna under which subsidy of Rs.. 26.32 lacs during 2000-2001 was distributed under different schemes which accounted for 15.33 per cent of the total subsidy.

Table 2.2: Item-wise Subsidies Granted by Various Departments to Farmers in Solan District During 2000-2001.

Item of subsidy	Total Expenditure in lacs			Subsidy Granted	
	Central Govt.	State Govt.	Total	In Rs. lakhs	Percentage
1. **Subsidies Granted by Directorate of Agriculture**					
Seed	18.96	27.11	46.07	23.59	13.75
Fertilizer	-	67.76	67.76	43.63	25.42
Plant protection	2.31	6.14	8.45	6.37	3.71
Implements	0.63	2.95	3.58	3.41	1.99
Construction of tank etc.	-	24.75	24.75	21.50	12.54
Small irrigation	11.99	10.38	22.37	19.61	11.42
Bio gas plants	2.95	4.70	7.65	1.52	0.88
Total	36.84	143.79	180.63	119.63	69.71
2. Subsidies Granted by Directorate of Horticulture					
Fungicide/insecticide	-	1.35	1.35	1.35	0.79
Drip irrigation	0.38	-	0.38	0.38	0.22
Corrugated fiber box	-	1.34	1.34	1.34	0.78
Plastic crates	0/75	-	0.75	0.75	0.44
Transport subsidies on Imports of eucalyptus/ popular box	-	0.86	0.86	0.86	0.50
Floriculture	0.40	-	0.40	0.40	0.23
Plant protection equipment/mushroom	5.00	-	5.00	5.00	2.91
Total	6.53	3.35	10.08	10.08	5.87
3. Subsidies Granted by Directorate of Food & Supplies					
Wheat/wheat flour	N.A.	3.09	3.09	3.09	1.80
Levy sugar	N.A.	N.A.	N.A.	N.A.	N.A.
Total	-	3.09	3.09	3.09	1.80
4. Subsidies Granted by Directorate of Animal Husbandry					
Foot and mouth Disease vaccine	-	2.22	2.22	2.22	1.29
Fodder seed	-	0.30	0.30	0.30	0.17
Medicine of animal	-	10.00	10.00	10.00	5.83
Poultry	-	-	-	-	-
Total	-	12.52	12.52	12.52	7.29
5. Subsidies Granted by Directorate of Rural Development & Panchayati Raj					
Total under Swarn Jayanti Gram Swarj Yojna	15.49	53.94	69.43	26.32	15.33
Grand total 1+2+3+4+5	58.86	216.89	275.75	171.64	100.00

Source: Various Directorate Govt. of Himachal Pradesh.

2.8 The Disbursement of Subsidy in Mandi District:

The Table 2.3 presents the subsidy granted by various departments in Mandi district during the year 2000-01 which amounted to Rs.375.79 lacs. The Directorate of Agriculture played a major role in distribution of subsidy accounting for 67.47 percent. Fertilizer, seed and small irrigation schemes remained the main subsidized items. Directorate of Rural Development and Panchayati Raj, Directorate of Horticulture, Directorate of Animal Husbandry and department of Food and Civil Supplies provided subsidy for various purposes as detailed in the table..

Table 2.3: Item-wise Subsidies Granted by Various Departments to Farmers in Mandi District During 2000-2001.

Item of subsidy	Total Expenditure in lakhs			Subsidy Granted	
	Central Govt.	State Govt.	Total	In Rs. lakhs	Percentage
1. **Subsidies Granted by Directorate of Agriculture**					
Seed	50.57	63.43	114.00	76.74	20.42
Fertilizer	-	141.65	141.65	117.42	31.25
Plant protection	0.60	13.56	14.16	13.97	3.72
Implements	1.19	5.47	6.66	1.89	0.50
Construction of tank etc.	-	11.15	11.15	6.85	1.82
Small irrigation	15.26	15.38	30.64	30.64	8.15
Bio gas plants	7.75	11.97	19.72	6.04	1.61
Total	75.37	262.61	337.98	253.55	67.47
2. Subsidies Granted by Directorate of Horticulture					
Fungicide/insecticide	-	10.19	10.19	10.19	2.72
Drip irrigation	0.27	-	0.27	0.27	0.07
Corrugated fiber box	-	3.55	3.55	3.55	0.95
Plastic crates	2.34	-	2.34	2.34	0.62
Transport subsidies on Imports of eucalyptus/ popular box	-	0.25	0.25	0.15	0.04
Floriculture	1.80	0.20	2.00	1.86	0.49
Plant protection Equipment/mushroom	3.47	1.00	4.47	3.95	1.05
Total	7.88	15.19	23.07	22.31	5.94
3. Subsidies Granted by Directorate of Food & Supplies					
Wheat/wheat flour	-	7.54	7.54	7.54	2.01
Levy sugar	-	N.A.	N.A.	N.A.	N.A
Total	-	7.54	7.54	7.54	2.01
4. Subsidies Granted by Directorate of Animal Husbandry					
Foot and mouth Disease vaccine	-	1.98	1.98	1.98	0.52
Fodder seed	-	0.60	0.60	0.60	0.16
Medicine of animal	-	20.00	20.00	20.00	5.32
Poultry	-	-	-	-	-
Total	-	22.58	22.58	22.58	6.02
5. Subsidies Granted by Directorate of Rural Development & Panchayati Raj					
Total under Swarn Jayanti Gram Swarj Yojna	36.26	68.41	104.67	69.81	18.58
Grand total 1+2+3+4+5	119.51	376.33	495.84	375.79	100.00

Source: Mentioned Directorates Govt. of Himachal Pradesh

2.9 Per Hectare Subsidy Granted by Various Department:

Table 2.4 presents the details of per hectare subsidy granted on net and gross cropped area by various departments in Solan and Mandi district of Himachal Pradesh. In Himachal Pradesh a subsidy of Rs. 764.19 was provided on per hectare of net area sown by all departments in which Department of Agriculture alone shared highest Rs.365.81 followed by horticulture (Rs.205.64), of rural development (Rs.112.85), food and supply (Rs.57.51) and Directorate of Animal Husbandry (Rs.22.38). It is clear that the subsidies provided to Solan and Mandi districts are lower to the state average.

Table 2.4: Per Hectare Subsidy Granted by Various Departments in Solan & Mandi Districts and Himachal Pradesh During 2000-2001.

(Rs./hectare)

Department & item of subsidy	Subsidy on net area sown			Subsidy on gross cropped area		
	Solan	Mandi	Himachal Pradesh	Solan	Mandi	Himachal Pradesh
1. **Subsidies Granted by Directorate of Agriculture**						
Seed	59.50	89.46	122.06	36.05	47.64	69.13
Fertilizer	110.04	136.88	158.79	66.68	72.88	89.93
Plant protection	16.06	16.28	14.80	9.73	8.67	8.38
Implements	8.60	2.20	18.68	5.21	1.17	10.58
Construction of tank etc.	54.22	7.98	16.03	32.85	4.26	9.08
Small irrigation	49.46	35.72	30.40	29.96	19.02	17.22
Bio gas plants	3.82	7.04	5.05	2.32	3.75	2.85
Total	301.71	295.56	365.81	182.80	157.39	207.17
2. Subsidies Granted by Directorate of Horticulture						
Fungicide/insecticide	3.40	11.80	61.14	2.06	6.33	34.62
Drip irrigation	0.96	0.31	0.30	0.58	0.17	0.17
Corrugated fiber box	3.38	4.41	133.92	2.04	2.20	75.85
Plastic crates	1.89	2.73	5.72	1.15	1.45	3.24
Transport subsidies On Imports of eucalyptus/popular box	2.17	0.17	0.38	1.31	0.09	0.21
Floriculture	1.01	2.17	1.02	0.61	1.15	0.58
Plant protection equipment/ Mushroom	12.61	4.60	3.16	7.65	2.45	1.79
Total	25.42	26.00	205.64	15.40	13.84	116.46
3. Subsidies Granted by Directorate of Food & Supplies205.64						
Wheat/wheat flour	7.79	8.79	26.75	4.72	4.68	15.15
Levy sugar	-	-	30.76	-	-	17.42
Total	7.79	8.79	57.51	4.72	4.68	32.57
4. Subsidies Granted by Directorate of Animal Husbandry						
Foot and mouth Disease vaccine	5.60	2.31	3.27	3.39	1.23	1.86
Fodder seed	0.76	0.70	0.73	0.46	0.37	0.41
Medicine of animal	25.22	23.31	18.21	15.28	12.42	10.31
Poultry	-	-	0.17	-	-	0.09
Total	31.58	26.32	22.38	19.13	14.02	12.67
5. Subsidies Granted by Directorate of Rural Development & Panchayati Raj						
Total under Swarn Jayanti Gram Swarj Yojna	66.39	81.38	112.85	40.22	43.33	63.91
Grand total 1+2+3+4+5	432.89	438.05	764.19	262.27	233.26	432.78

On per hectare of gross cropped area a subsidy of rupees 432.78 was provided by various departments of the state in which Department of Agriculture accounted for the highest share of Rs.207.17, followed by horticulture Rs.116.46 Rural Development Rs.63.91, Food and Civil Supply

Rs.32.57 and Animal Husbandry Rs.12.67. Almost similar trends was observed in both the study districts Mandi and Solan but the level of subsidy utilization is lower than state in both the districts.

2.10 Per Worker Subsidy Granted by Various Departments

Per worker subsidy granted by various departments in Solan, Mandi and Himachal Pradesh has been presented in table 2.5. In district Solan per worker subsidy granted by different departments stands at Rs.233.26 in which Rs.111.66 were provided Department of Agriculture followed by Department of Horticulture (Rs.62.74); Rural Development and Punchayati Raj (Rs.34.43); Department of Food and Civil Supply (Rs.17.54) and Department of Animal Husbandry (Rs.17.54). The per worker subsidy disbursed in Solan and Mandi districts was lower when compared to the state as a whole.

Further table reveals that per agricultural worker subsidy granted by all the concerned departments in Himachal Pradesh stood at Rs.350.45 in which Rs.167.76 were granted by Department of Agriculture followed by Directorate of Horticulture (Rs.93.40), Department of Rural Development and Panchayati Raj (Rs.51.76), Department of Food and Civil Supply (Rs.26.37) and Department of Animal Husbandry (Rs.10.26). The horticultural activities are limited in both the districts therefore the share of subsidy granted by Department of Horticulture is low but is equal to that of Department of Animal Husbandry. The proportion of agricultural worker was higher in Mandi district in comparison to Solan district therefore, in Solan district disbursement of per worker subsidy was higher i.e. Rs.224.71 in comparison to Mandi district where it was Rs.171.90 per worker.

Table 2.5: Per Worker Subsidy Granted by Various Departments in Solan & Mandi Districts and Himachal as a Whole During 2000-2001.

(Rs. per worker)

Department & item of subsidy	Per worker			Per agriculture worker		
	Solan	Mandi	Himachal Pradesh	Solan	Mandi	Himachal Pradesh
1. **Subsidies Granted by Directorate of Agriculture**						
Seed	17.60	26.38	37.26	30.88	35.10	55.97
Fertilizer	32.57	40.37	48.47	57.12	53.71	72.82
Plant protection	4.76	4.80	4.51	8.35	6.39	6.79
Implements	2.54	0.65	5.70	4.46	0.86	8.57
Construction of tank etc.	16.04	2.35	4.89	28.15	3.13	7.35
Small irrigation	14.64	10.53	9.28	25.67	14.02	13.94
Bio gas	1.13	2.09	1.55	1.99	2.77	2.32
Total	89.28	87.17	111.66	156.62	115.99	167.76
2. Subsidies Granted by Directorate of Horticulture						
Fungicide/insecticide	1.01	3.50	18.66	1.77	4.66	28.04
Drip irrigation	0.28	0.09	0.09	0.50	0.12	0.13
Corrugated fiber box	1.00	1.22	40.87	1.75	1.62	61.43
Plastic crates	0.56	0.80	1.74	0.98	1.07	2.62
Transport subsidies On Imports of Eucalyptus/popular box	0.64	0.05	0.11	1.13	0.07	0.18
Floriculture	0.30	0.65	0.31	0.52	0.85	0.46
Plant protection equipment/ Mushroom	3.73	1.36	0.96	6.55	1.81	1.44
Total	7.52	7.67	62.74	13.20	10.20	94.30
3. Subsidies Granted by Directorate of Food & Supplies205.64						
Wheat/wheat flour	2.31	2.59	8.16	4.04	3.45	12.27
Levy sugar	-	-	9.38	-	-	14.10
Total	2.31	2.59	17.54	4.04	3.45	26.37
4. Subsidies Granted by Directorate of Animal Husbandry						
Foot and mouth Disease vaccine	1.66	0.68	1.00	2.90	0.91	1.50
Fodder seed	0.22	0.20	0.22	0.39	0.27	0.33
Medicine of animal	7.46	6.88	5.56	13.09	9.15	8.35
Poultry	-	-	0.05	-	-	0.08
Total	9.34	7.76	6.83	16.38	10.33	10.26
5. Subsidies Granted by Directorate of Rural Development & Panchayati Raj						
Total under Swarn Jayanti Gram Swarj Yojna	19.64	24.00	34.45	34.47	31.93	51.76
Grand total 1+2+3+4+5	128.09	129.19	233.26	224.71	171.90	350.45

2.11 Indirect Subsidy Granted on Fertilizers

Indirect subsidies were granted on decontrolled fertilizer i.e. mixed or complex fertilizers (12:32:16 & 15:15:15), single super phosphate, murate of potash and diammonuim phosphate.

These fertilizers are supplied on subsidized rates and after verification of supply the subsidies are directly reimbursed to the producers. These Indirect subsidies amounted to Rs.41.47, Rs.93.22 and Rs.843.03 lac in district Solan, Mandi and Himachal Pradesh respectively. Per hectare and per worker subsidy is higher in Himachal Pradesh as a whole in comparison to Solan and Mandi districts because decontrolled fertilizer use is lower in these districts. The position is relatively better in Mandi in comparison to Solan district (Table 2.6).

Table: 2.6 Indirect Subsidies on Fertilizer in Solan and Mandi District and Himachal as a whole.

Particulars	**Solan**	**Mandi**	**H.P.**
1. Indirect subsidies on fertilizer granted by central govt.(Rs. in lacks)	41.47	93.22	843.03
2. Per hectare subsidy on :			
a. Net cropped area (Rs.)	104.59	108.66	153.44
b. Gross cropped area (Rs.)	63.36	57.86	86.89
3. Per worker Subsidy			
a. Per worker (Rs.)	30.94	32.05	46.83
b. Per Agricultural worker (Rs.)	54.29	42.64	70.37

Source: Directorate of Agriculture (Govt. of H.P.)

2.12 Scenario of Total Subsidies (Direct & Indirect) Granted by Govt. to Farmers

A summary of both direct and indirect subsidies granted to farmers has been presented in Table 2.7. A total subsidy of Rs.213.11, Rs.469.01 and Rs.5041.62 lacs was disbursed in district Solan, Mandi and Himachal Pradesh respectively. The share of direct subsidy is higher, 80.54%, 80.12% and 83.28 per cent respectively in Solan, Mandi and Himachal Pradesh. The analysis shows that the share of indirect subsidies is higher in Solan and Mandi district in comparison to state as a whole. The subsidy on per hectare net cropped area, per hectare gross cropped area, per worker in all streams and per agriculture worker remained higher in Himachal Pradesh in comparison to Solan and Mandi district Table 2.7.

Table 2.7: Direct and Indirect Subsidies Granted by Various Departments to Farmers in Himachal Pradesh During 2000-2001.

Subsidies	Solan	Mandi	Himachal Pradesh
1.Direct subsidies (in lacs)	171.64 (80.54)	375.79 (80.12)	4198.59 (83.28)
2.Indirect subsidies(in lacs)	41.47 (19.46)	93.22 (19.88)	843.03 (16.72)
3. Total subsidies(in lacs)	213.11 (100.00)	469.01 (100.00)	5041.62 (100.00)
Per Hectare Subsidy on Net Cropped Area in Rs.			
Direct subsidy	432.89	438.05	764.19
Indirect subsidy	104.59	108.66	153.44
Total subsidy	537.48	546.71	917.63
Per Hectare Subsidy on Gross Cropped Area in Rs.			
Direct subsidies	262.27	233.26	432.78
Indirect subsidies	63.36	57.86	86.89
Total subsidies	325.63	291.12	519.67
Per Worker Subsidy (Workers in All Stream) in Rs.			
Direct subsidies	128.09	129.19	233.26
Indirect subsidies	30.94	32.05	46.83
Total subsidies	159.03	161.24	280.09
Per Agricultural Worker Subsidies in Rs.			
Direct subsidies	224.71	171.90	350.45
Indirect subsidies	54.29	42.64	70.37
Total subsidies	279.00	214.54	420.82

Note: Figures in parenthesis are the percentage to total subsidies

CHAPTER – III
GENERAL FEATURES OF REGION UNDER STUDY
SECTION – I

3.1 An Overview of the Regions Under Study

3.1.1 About The State

Himachal Pradesh, one of the most picturesque regions of the country, land of mighty rivers and snows is situated in the lap of Himalayan ranges in extreme north-west of India, and bordered by Jammu and Kashmir in the north, Punjab in the west and south-west, Haryana in the south, Uttar Pradesh in the south-east and Tibet in the east. It is situated between 32o22'40" to 33o12'40" north latitude and 75o47'55" to 79o04'22" east longitude in altitudes ranging from 350 metre to 6,975 metre above the mean sea level.

This Pradesh came into being as a part 'C' State of the Indian Union on 15th April, 1948 as a result of the merger of 30 Punjab and Shimla Hill States into the Indian Union viz.' Baghat, Bhajji, Baghal, Beja, Balsan, Bushar, Chamba, Darkoti, Delath, Dhadi, Dhami, Ghund, Jubbal, Khaneti, Keonthal, Koti, Kumarsain, Kunihar, Kuthar, Mandi, Madhan, Mahlog, Mangal, Ratesh, Rawinigarh, Sangir, Sirmour, Suket, Tharoch and Theog. At that time the State had four districts viz.; Chamba, Mahasu, Mandi and Sirmour and its area was 27,168 square kilometers. In 1954, the neighbouring 31st State of Bilaspur was integrated with Himachal Pradesh, thereby adding one more district with an area of 1,068 square kilometers. In 1960 a new border district of Kinnaur was carved out of Mahasu district on account of administrative reasons. With the reorganization of Punjab State in 1966; four more hilly districts, namely Kangra, Kullu, Lahaul-Spiti and Shimla, Nalagarh Tehsil of Ambala district, some parts of Una Tehsil of Hoshiarpur district and Dalhousie of Gurdaspur district were merged into this Pradesh, thereby increasing its area by nearly 100 per cent. On 25th January, 1971, this Pradesh was given the status of statehood. On Ist September, 1972 two more districts viz.; Hamirpur and Una were created out of Kangra district and Solan was also named as a district dropping Mahasu district.

According to Surveyor General of India the State occupied 55,673 square kilometers of area. But the cadastrally surveyed area was only 33,495 square kilometers. The State headquarters are located at Shimla, 'the queen of hills'. The State is divided into three divisions. The division are further divided into 12 districts viz.' Bilaspur, Chamba, Hamirpur, Kangra, Kinnaur, Kullu, Lahaul-Spiti, Mandi, Shimla, Sirmour, Solan and Una. There are 45 sub-divisions in the State with 67 tehsils and 36 sub-tehsils.

3.1.2 An Overview of the District Solan

The Solan district of Himachal Pradesh came into existence on September 1972 at the time of re-organization of Shimla and Mahasu districts. To form the present district, Solan, Arki and Nalagarh, Kandaghat tehsils were craved from erstwhile Mahasu and Shimla districts respectively. The Solan district comprises of old Himachal area and area came from Punjab (Nalagarh and Kandaghat tehsils) at the time of reorganization of Himachal Pradesh.

In the southern side, the district is bordering Punjab and Haryana states. In the northern, eastern and western side the district is surrounded by Shimla, Sirmour and Bilaspur districts. On geographical map the district is situated between 76o 42' and 77o 20' longitude and 30o 50o and 31o 15o north latitude. Though the district comprises of plain and hilly areas but the most of the area falls under mountains. The elevation of the district varies from 300 meters to 3000 meters above means sea level. There are several valleys in the district and among those Saproon and Doon are famous for the production of off-season vegetables and fruits. The geographical area of the district is 1936 square kms which is about 3.5 per cent of total geographical area of the State. The district is well connected with other parts of the country through national highway and rail roads. Solan is also called gateway of Himachal Pradesh.

3.1.3 An Overview of District Mandi

Mandi district comprised two erstwhile princely States of Mandi and Suket at the time of formation of Himachal Pradesh on 15th April, 1948. The district consists of seven tehsils viz. Jogindernagar, Sundernagar, Karsog, Mandi Sadar, Sarkaghat, Chachyot and Thunag and four Sub-Tehsils i.e. Sandhol, Lad Bharol, Balichowki and Baldwara. Mandi district is divided into ten

integrated Rural Development Blocks namely Rewalsar, Mandi Sadar, Drang, Chauntra, Gopalpur, Dharampur, Sunder Nagar, Karsog, Chachyot and Seraj. There are 3346 villages among them 2806 are inhabited and 540 are uninhabited villages according to 1991 census. The district is bound by Kangra district on the north-west, Shimla district on the south-west, Kullu district on the east and Hamirpur and Bilaspur districts on the west. The district is mainly mountainous except Balh area which is a wide and fertile valley. The altitude above the mean sea level varies from 505 metres at Dehar to above 4400 metres at Nargu, the highest peak in the district. River Beas enters the district from the north-eastern direction and flows through it. It is the most important river, which serves for hydroelectric generation at Dehar Power House and supplements the waters of Satluj river and Bhakra reservoir. Uhl is an important tributary of Beas, feeding Shanan and Bassi power Houses in the district.

3.1.4 Demographic Profile

The number of persons of each sex in rural and urban part of Solan and Mandi district along with overall figures of H.P. during 1961, 1971, 1981, 1991 and 2001 census periods are presented in Table 3.1. In this table it may be seen that during 1961 to 2001 there has been an increase in numbers of rural and urban/male and female population of Solan and Mandi as well as in Himachal Pradesh. The increase was observed to be higher in Solan district as compared to Mandi and Himachal Pradesh. During 1961 to 1971 urbanization was observed higher in Mandi and Solan district when compared to Himachal Pradesh. The increase in population during all these census period is the evidence for the change in density of population. In Solan and Mandi districts density of population was observed equal up to 1991 but during 2001 density of Solan and Mandi remained higher. This shows that Mandi and Solan are thickly populated when compared to Himachal Pradesh. This fact indicates that in Solan and Mandi districts commercialization has taken place and at the same time industrial activities has increased in comparison to rest of Himachal Pradesh. The density of population increased from 51 persons/sq.km. in 1961 to 109 during 2001 in Himachal Pradesh. Like wise in Mandi the density of population increased from 57 in 1961 to 228 during 2001. Similarly in district Solan it increased from 123 in 1971 to 258 in 2001.

Table: 3.1.1 Sex-wise Rural and Urban Population of Mandi and Solan Districts Along with State as a Whole (During 1961 to 2001).

Census Period	Rural			Urban			Total			Population density
	Male	Female	Persons	Male	Female	Persons	Male	Female	Persons	
Solan District										
1961	-	-	-	-	-	-	102531	90133	192664	
1971	110103	103355	213458	13363	10582	23945	123466	113937	237403	123
1981	138888	131769	270657	18326	14297	32623	157214	146066	303280	157
1991	172110	159922	332032	25970	21318	47288	198080	181240	379320	197
2001	213322	194883	408205	56129	35046	91175	269451	229929	499380	258
Mandi District										
1961	180759	181965	362724	11928	9607	21535	192687	191572	384259	97
1971	233469	233506	466975	28879	19326	48205	262348	252832	515180	128
1981	296274	301296	597570	26223	21034	47257	322497	322330	644827	163
1991	348018	364364	712382	30042	26022	56064	378060	390386	768446	196
2001	415101	424928	840029	32170	28788	60958	447271	453716	900987	228
Himachal Pradesh										
1961	1343271	1290917	2634188	108063	70212	178275	1451334	1361129	2812463	51
1971	1628623	1589921	3218544	138334	103556	241890	1766957	1693477	3460434	62
1981	1988331	1966516	3954847	181600	144371	325971	2169931	2110887	4280818	77
1991	2317601	2348654	4666255	243293	201531	444824	2560894	2550185	5111079	93
2001	2754251	2728116	5482367	331005	263876	594881	3085256	2991992	6077248	109

3.1.5 Population Growth

Sex wise classifications of growth rates of rural and urban population for Solan and Mandi districts have been presented in Table 3.1.2. As per the conclusions drawn from this analysis, population growth in Solan has been higher than Mandi and Himachal Pradesh. The similar trend was observed during 1991-2001 in Solan district. In Solan district general population growth was higher than that of the state because of commercialization of agriculture and better opportunities of earnings in the area. But in Mandi districts general population growth declined over the period when compared to Solan and state as a whole. This is because of higher level of migration from villages to adjoining urban areas as well as lower development opportunities in comparison to Solan district.

Table: 3.1.2 Sex-wise Decennial Growth Rates of Rural and Urban Population Solan and Mandi Districts Along with State as a Whole (During 1961 to 2001).

Census Period	Rural			Urban			Total		
	Male	Female	Persons	Male	Female	Persons	Male	Female	Persons
Solan District									
1961-71	-	-	-	-	-	-	-	-	+23.28
1971-81	+26.14	+27.49	+26.79	37.14	+35.11	+36.24	+27.33	+28.20	+27.74
1981-91	+23.91	+21.36	+22.67	+41.71	+49.10	+44.95	+25.99	+24.08	+25.07
1991-02	+23.95	+21.86	+22.94	+116.13	+64.39	+92.81	+36.03	+26.86	31.65
Mandi District									
1961-71	+29.16	+28.32	+28.74	+142.11	+101.16	123.84	+36.15	+31.98	+34.07
1971-81	+26.90	+29.03	+27.96	-9.19	+8.83	-1.96	+22.93	+27.49	+25.17
1981-91	+17.46	+20.93	+19.21	+14.56	+23.71	+18.63	+19.61	+21.19	+20.40
1991-02	+19.27	+16.62	+17.91	+7.08	+10.63	+8.73	+15.95	+16.15	+16.05
Himachal Pradesh									
1961-71	+21.24	+23.16	+22.18	+28.01	+47.49	+35.68	+21.75	+24.42	+23.0
1971-81	+22.08	+23.68	+22.87	+31.27	+39.41	+34.76	+22.81	+24.65	+23.71
1981-91	+16.56	+19.43	+17.99	+33.97	+39.59	+36.46	+18.02	+20.81	+19.39
1991-02	+18.84	+16.15	+17.49	+36.05	+30.93	+33.73	+20.48	+17.32	+18.90

3.1.6 Rural Urban Population

The proportion of rural and urban population of each sex in Solan and Mandi as well as Himachal Pradesh as a whole during has been presented in Table 3.1.3. The table shows that among these census period the rural population was higher in Mandi district when compared to Solan and as a whole. It varies between 94.40 percent during 1961 to 90.64 percent during 1971. But in 2001 the proportion of rural population was 93.23 per cent which shows that district had about 7 per cent urban population which is below than the state as a whole. In Solan district during 2001 urbanization touched about 20 per cent which was just double than that of state as a whole. This is because of higher increase in industrialization as well as commercialization of agriculture. At the same time national highway and railway line have their routs in these districts. In Solan district urbanization shows an increasing trend but no such trend was observed in district Mandi whereas, state has shown an increasing trends from 1961 to 2001.

Table: 3.1.3 Sex-wise Proportion of Rural and Urban Population of Solan and Mandi Districts Along with State as a Whole (During 1961 to 2001).

Census Period	Rural			Urban			Total		
	Male	Female	Persons	Male	Female	Persons	Male	Female	Persons
Solan District									
1961	-	-	-	-	-	-	-	-	-
1971	89.18	90.71	89.91	10.82	9.29	10.09	100.00	100.00	100.00
1981	88.34	90.21	89.24	11.66	9.79	10.76	100.00	100.00	100.00
1991	86.89	88.24	87.53	13.11	11.76	12.47	100.00	100.00	100.00
2001	79.17	84.76	81.74	20.83	15.24	18.26	100.00	100.00	100.00
Mandi District									
1961	93.81	94.99	94.40	6.19	5.01	5.60	100.00	100.00	100.00
1971	88.99	92.36	90.64	11.01	7.64	9.36	100.00	100.00	100.00
1981	91.87	93.47	92.67	8.13	6.53	7.33	100.00	100.00	100.00
1991	92.05	93.33	92.70	7.95	6.67	7.30	100.00	100.00	100.00
2001	92.81	93.65	93.23	7.19	6.35	6.77	100.00	100.00	100.00
Himachal Pradesh									
1961	92.55	94.84	93.66	7.45	5.16	6.34	100.00	100.00	100.00
1971	92.17	93.88	93.01	7.83	6.12	6.99	100.00	100.00	100.00
1981	91.63	93.16	92.38	8.37	6.84	7.62	100.00	100.00	100.00
1991	90.50	92.10	91.30	9.50	7.90	8.70	100.00	100.00	100.00
2001	89.27	91.18	90.21	10.73	8.82	9.79	100.00	100.00	100.00

3.1.7 Sex Ratio

It has already been seen in Table 3.1.1 that the population of higher in rural and urban population of Solan district as well as in Himachal Pradesh. In case of Mandi district the situation is quite different. The lower sex ratio presented in urban areas which is similar to the situation generally observed in other urban areas of the country where males come from rural areas to work and use to live alone. Table 3.1.4 shows number of females per thousand of males in Solan and Mandi district along with of Himachal as a whole during 1961 to 2001.

Table 3. 1.4: Number of Female per Thousand of Males in Solan and Mandi Districts Along with State as a Whole (During1961 to 2001).

Census Periods	Rural Population	Urban Population	Total Population
Solan District			
1961	-	-	-
1971	938	791	923
1981	948	780	929
1991	929	821	915
2001	914	624	853
Mandi District			
1961	1007	805	994
1971	1000	669	964
1981	1017	802	999
1991	1047	866	1032
2001	1024	895	1014
Himachal Pradesh			
1961	961	650	938
1971	976	749	958
1981	989	794	973
1991	1013	828	995
2001	990	797	970

3.1.8 Literacy

In education both male and female of Solan and Mandi district are advanced when compared to the state as a whole(Table 3.1.5). The low level of literacy in the beginning during 1961 to 1971 could be attributed to is due to hilly terrain with difficult and insufficient transport and communication facilities and difficult location of villages etc. All these factors go a long way in keeping the state backward in literacy.

Table: 3. 1.5 Percentage of Literate Persons of Each Sex in Solan and Mandi Districts Along with State as a Whole (During 1961 to 2001).

Census Periods	All		
	Male	Female	Persons
Solan District			
1961	-	-	-
1971	40.31	17.38	19.31
1981	52.37	28.90	41.07
1991	74.67	50.69	63.30
2001	85.35	67.48	77.16
Mandi District			
1961			
1971	43.73	17.17	30.70
1981	52.96	27.45	40.21
1991	76.65	49.12	62.74
2001	86.67	65.36	75.86
Himachal Pradesh			
1961	32.3	9.5	21.3
1971	42.3	20.0	31.3
1981	53.19	31.46	42.48
1991	75.36	52.13	63.86
2001	86.02	68.08	77.13

3.1.9 Occupational Structure

Working population of study districts and State as a whole has been divided into three categories according to the type of work done by them i.e. (i) Agricultural workers which includes cultivators and Agricultural labourers (ii) allied agricultural activities which includes livestock, forestry, fishing, plantations, orchard and allied activities and (iii) Non-agricultural activities which includes, mining and quarrying, household industry, other industries, construction, trade and commerce, transport, storage and communication and other services. Thus workers classification is adopted through census department and was recorded from 1981 and 1991 census. Abstract of Solan and Mandi district and Himachal Pradesh has been presented in Table 3.1.6.

From this table it may be observed that the percentage of workers in the total population increased during 1991 when compared to 1981 in both the study areas and state as a whole registering a growth rate of 2.60, 1.92 and 2.07 percent in Solan, Mandi and Himachal Pradesh respectively. The proportion of agricultural workers population during 1981 to 1991 decreased

constantly from 67.8 to 57.00 percent, 77.75 to 75.16 per cent and 70.89 to 66.55 per cent in Solan and Mandi district and Himachal Pradesh respectively. But in aggregate level cultivators as well as agricultural labourers increased from of 0.67 to 0.98 per cent in Solan district, 1.56 to 9.59 percent in Mandi district and 1.09 to 4.66 per cent in the state as a whole. Regarding allied agricultural activities there was a marginal increase during 1981 to 1991 in both the study areas. The population of non-agricultural workers has increased in absolute as well as proportionate term which was 30.31 percent, 20.57 percent and 26.66 per cent of total workers during 1981 and 40.61, 23.21 and 30.98 per cent during 1991 in Solan, Mandi and state as a whole respectively. In Himachal Pradesh along with study districts the number of household industry workers was on decline. The major increase was noticed in other industries like construction, trade and commerce, other services and transport communication and storage. Thus, on the whole, it may be concluded that higher number of people are adopting non-agricultural sector as their occupations.

Table: 3.1.6 Percentage Distribution of Main Workers in Solan and Mandi Districts Along with State as a Whole (During 1981 and 1991).

Occupation Category	District Solan			District Mandi			Himachal Pradesh		
	1981	1991	Growth Rate	1981	1991	Growth Rate	1981	1991	Growth Rate
1.Agricultural Workers	67.86	57.00	0.73	77.75	75.16	1.65	70.89	66.55	1.36
Cultivators	65.49	54.96	0.67	76.88	73.74	1.56	68.17	63.25	1.09
Agri. Labours	2.37	2.04	0.98	0.87	1.42	9.59	2.72	3.30	4.66
2.Allied Agri. Activities	1.82	2.39	6.76	1.68	1.63	1.74	2.45	2.47	2.19
3. Non Agri. Workers	30.31	40.61	6.65	20.57	23.21	3.60	26.66	30.98	3.91
Mining & quarrying	0.25	0.19	-0.42	0.10	0.09	2.26	0.26	0.26	1.98
Household Industry	1.90	1.31	-1.17	1.77	1.25	-1.45	1.12	1.43	-0.43
Other Industries	6.38	12.77	15.56	1.96	1.72	0.57	3.51	3.86	3.33
Construction	4.41	5.16	4.94	5.49	4.14	-0.91	5.37	4.85	0.93
Trade & Commerce	3.68	5.15	7.86	2.69	3.25	4.54	3.58	4.40	4.86
Transport, Storage, Communication	2.24	2.62	4.95	1.15	1.52	5.88	1.84	1.93	2.70

Other Services	11.44	13.40	4.96	7.41	11.24	8.27	10.29	14.40	6.94
Total Workers (000)	105	134	2.77	241.34	290.85	2.05	1417	1800	2.10
Total Population (000)	303	382	2.60	644.83	768.45	1.92	4281	5171	2.07
Percentage of Workers to Population	34.52	35.25	-	37.43	37.85	-	33.10	34.81	-

3.1.10 Land Utilization

Land is an important productive factor in agriculture. In the wake of growing population, the scarcity of land will be more severely felt and this shall have to be kept in view by the planners. The stage has now come when land use planning is essential to meet the increasing and changing needs and pressure involving competing uses of the same piece of land. Therefore, analysis of land utilization naturally forms an important part and has direct concern with subsidy for measuring agricultural development. Land resources of a region are not determined by its geographical area alone but the use to which the land is put will be of great significance for planners, Economists and analysts to draw economic and social conclusions. In other words, land utilization is an important indicator of the state of agriculture, its study portrays the extent to which agriculture has developed. In the present era of planning it is highly desirable to study the existing land use pattern and also the changes that have come about through times. The land utilization of Himachal Pradesh, Solan district and Mandi district for the year 1982-83 and 1995-96 years has been presented in Table 3.1.7.

Table 3.1.7 shows that in Solan and Mandi districts along with state as a whole the forest area has increased gradually and this increase was highest in the state 30.61 percent followed by Mandi district 14.49 percent and Solan district 3.09 percent. The permanent pastures and grazing land is the most important single category of land utilization in Solan and Mandi district as well as Himachal Pradesh. Land put to non agricultural uses has increased at a faster rate in Solan district. The net area sown during 1982-83 was 25.14 per cent, 23.37 percent and 18.35 per cent of the total geographical area which decreased to 22.27 percent, 23.68 per cent and 16.42 per cent during 1995-96 in Solan, Mandi and Himachal Pradesh respectively. The cropping intensity has also improved from 144.39 per cent, 170.60 per cent and 167.63 per cent during 1982-83 to 161.73 per cent 171.92

per cent and 170.31 per cent during 1995-96 in Solan, Mandi and Himachal Pradesh respectively. Much is desired to be done in this direction by extending the irrigational resources so that more than one crop can be taken. In the state as well as in Solan and Mandi district proportionally larger area under permanent pastures and grazing lands indicate that Animal Husbandry must be practiced on extensive scale in the study area.

Table: 3.1.7 Land Utilization Pattern in Solan and Mandi Districts Along with State as a Whole (During 1982-83 and 1995-96).

Land Use type	District Solan			District Mandi			Himachal Pradesh		
	1982-83	1995-96	% change	1982-83	1995-96	% change	1982-83	1995-96	% change
1. Total geographical Area in Paper	180223 (hect.) 100.00	180553 (hect) 100.00	0.18	396815 (hect.) 100.00	397062 (hect.) 100.00	0.06	3113429 (hect.) 100.00	3396203 (hect.) 100.00	9.08
2. Forests	10.88	11.19	3.09	38.15	43.65	14.49	25.97	31.10	30.61
3. Barren and Un-cultivable Land	5.72	6.12	7.03	2.72	2.98	9.78	4.61	4.09	3.31
4. Land Put to Non-Agriculture able uses	4.55	6.10	34.36	3.18	3.04	4.47	5.25	5.66	17.50
5. Permanent Pastures and other Grazing Land	42.34	42.72	1.08	30.90	24.54	20.54	34.97	35.44	10.53
6. Land Under Mize. Tree crops and Groups not Included in Area Shown	1.86	1.53	-17.80	0.05	0.02	46.77	1.33	1.35	10.82
7. Culture able Waste	7.15	7.24	1.50	0.98	1.17	18.61	7.67	3.64	48.32
8. Other fellow land	0.28	0.52	84.02	0.10	0.08	12.99	0.45	0.76	85.19
9.Current fellow	2.07	2.91	11.83	0.56	0.84	51.18	1.38	1.55	22.19
10. Net Area Shown	25.14	22.27	-11.27	23.37	23.68	1.40	18.35	16.42	2.39
11.Area Shown more than once (hect.)	20117	24820	23.37	65469	67619	3.28	386454	392146	1.47
12.Total cropped area (hect.)	65434	65028	-0.62	158190	161636	2.18	957862	949888	0.83
13.Cropping intensity	144.39	161.73	-	170.60	171.92	-	167.63	170.31	-

3.1.11 Cropping Pattern

Generally, farmers of any area allocate their land among different crops in accordance with the local climate, soil, knowledge and the availability of other resources and number of other considerations. These may include an attempt to increase income, a desire to minimize the risk of crop failures or to maximize employment for family members. Thus, cropping pattern of any region is the outcome of trials and adjustments in respect of farm enterprises and practices. The same is true for the cropping pattern of Himachal Pradesh and study districts. Table 3.1.8 gives an idea of cropping pattern during 1980-81 and 1995-96 along with growth rates of Himachal Pradesh, Solan and Mandi districts.

The area under food crops in 1980-81 accounted for 94.18 percent 98.48 percent and 96.39 percent in districts Solan, Mandi and Himachal Pradesh respectively and remained almost stagnant during 1995-96. About 90 per cent of area is accounted for by food grains in which 85 percent was under cereals and 5 per cent under pulses in Himachal Pradesh. The similar trend has been observed in Solan and Mandi districts also. The other food crops such as sugarcane, vegetable, oilseeds occupies only about six per cent of the gross cropped area. There is a significant increase in the total cropped area except Solan district where decreased in area under food grains has been observed.

Under individual crops, a significant increase in area was noticed under wheat and maize whereas, there is a significant decrease in proportionate term of area under rice and barley in district Mandi and Himachal Pradesh. A quite different trend was observed in Solan district where except barley all crops have shown decreasing trend. Due to introduction of new technology in agriculture, cropping pattern has also been moved to commercialization farming and this change ultimately affected the millets, barley, rice, pulses and oil seeds crops in the state.

Table: 3.1.8 Area under Important Crops and Crop Groups in Solan and Mandi Districts Along with State as a Whole (During 1980-81 and 1995-96).

(Hectare)

Name of Crop & Crop Groups	District Solan			District Mandi			Himachal Pradesh		
	1980-81	1995-96	% change	1980-81	1995-96	% change	1980-81	1995-96	% change
Maize	35.12	38.37	-1.13	27.27	29.47	9.72	30.21	32.58	8.25
Rice	6.37	5.77	-17.99	16.61	19.35	-20.31	9.86	8.74	-11.03
Wheat	31.86	34.91	-0.83	37.06	41.41	13.44	37.06	3.77	1.97
Barley	2.57	2.99	5.37	3.31	2.76	-15.30	3.87	2.84	-26.29
Total Cereals	75.94	82.05	-2.23	88.34	88.41	1.60	84.63	83.73	-0.71
Total Pulses	14.94	6.51	-60.59	4.16	2.76	-32.61	5.87	3.80	-35.12
Total Oil Seeds	3.49	3.21	-16.77	0.66	0.77	17.90	2.42	2.19	-9.18
Potato	0.26	0.13	-56.15	1.39	1.54	12.52	1.77	1.44	-18.53
Total Vegetables	1.72	3.49	84.12	2.09	3.35	62.38	-	3.15	-
Total Condiments & Spices	0.40	0.40	-8.39	0.14	0.15	9.33	0.36	0.33	-8.10
Total Food Crops	94.18	94.33	-9.46	98.48	98.30	1.34	96.39	96.31	0.27
Total Non-Food Crops	5.82	5.77	-10.17	1.52	1.70	13.43	3.61	3.69	2.26
Total Cropped Area	100.00	100.00	-	100.00	100.00	-	100.00	100.00	-
T.C. Area (hect.)	71861	65028	-9.51	159214	161636	1.52	246514	949886	0.35

3.1.12 Crop Production

Generally agricultural production can be increased either by bringing more area under cultivation or by increasing productivity or by both. The production of most of the crops and crops groups has increased except barley, pulses, condiments and spices (Table 3.1.9). The production of important crops and change in their production pattern during 1980-81 to 1955-95 indicates that in Himachal Pradesh, more than 99 per cent contribution is of food crops.

Table: 3.1.9 Production of Important Crops and crop groups in Solan and Mandi Districts Along with State as a Whole (During 1980-81 and 1995-96).

Name of Crop & Crop Groups	District Solan			District Mandi			Himachal Pradesh		
	1980-81	1995-96	% change	1980-81	1995-96	% change	1980-81	1995-96	% change
Maize	52.80	61.14	9.97	37.03	43.38	55.50	41.18	44.40	28.08
Rice	8.85	6.43	28.85	15.35	9.28	-19.76	8.47	7.48	7.47
Wheat	32.78	22.57	-33.07	38.15	36.79	27.98	36.04	33.60	13.42
Barley	3.25	2.85	-14.91	3.20	2.29	-5.31	4.26	2.29	-34.66
Total Cereals	93.68	92.99	-3.53	95.82	92.32	27.84	92.72	88.19	15.73
Total Pulses	2.86	1.76	-40.30	1.17	0.60	-32.63	1.53	1.25	-1.04
Total Oil Seeds	1.69	1.15	-34.19	0.09	0.06	-15.38	0.15	0.51	315.60
Potato	1.25	0.82	-36.27	2.78	6.97	232.00	4.47	7.88	114.41
Total veg.	-	-	-	-	-	-	-	-	-
Total Condiments & Spices	0.20	0.11	-45.00	Neg.	0.05	276.32	0.20	0.09	-44.43
Total Food Crops	98.23	98.84	-2.21	99.84	99.94	32.87	99.28	99.15	21.52
Total Non-Food Crops	1.77	1.66	-36.06	0.16	0.06	-44.51	0.72	0.85	42.93
Total Production	100.00	100.00	-	100.00	100.00	-	100.00	100.00	-
Total prod. (Tonnes)	89054	86555	-2.81	221115	293504	32.73	1228010	1494126	21.67

3.1.13 Productivity

Productivity of important crops in Solan and Mandi districts and Himachal Pradesh has been presented in Table 3.1.10. There is no definite trend in the productivities over the years but these definitely are below the average of counting as a whole.

Table: 3.1.10 Productivity of Important Crops in Solan and Mandi Districts Along with State as a Whole (During 1966-67, 1980-81 and 1995-96.)

(Kg. per Hectare)

Crops	1966-67	1980-81	1995-96	Percentage Change		
				1966-67 over 1980-81	1980-81 over 1995-96	1966-67 over 1995-96
Solan District						
Maize	2233	1863	2121	-16.57	13.85	-5.02
Rice	1163	943	1508	-18.92	59.91	29.66
Wheat	764	1275	1861	66.88	45.96	143.58
Barley	954	1571	1269	64.67	-19.22	33.02
Potato	5120	5540	8530	16.02	43.60	66.60
Mandi District						
Maize	2017	1886	2673	-6.49	41.73	32.52
Rice	1100	1284	1236	16.73	-3.74	12.36
Wheat	876	1480	1613	68.95	8.99	84.13
Barley	1229	1346	1505	9.52	11.81	22.46
Potato	1792	2786	8220	55.47	195.05	358.70
Himachal Pradesh						
Maize	1689	1812	2143	7.28	18.27	26.88
Rice	927	1114	1346	20.17	20.83	45.20
Wheat	701	1261	1403	79.89	11.26	100.14
Barley	1220	698	1268	-42.79	81.66	3.93
Potato	2024	3275	8620	61.81	163.21	325.89

SECTION II

3.2 BASIC FEATURES OF SAMPLED HOUSEHOLDS

The general features of sampled farmers indicate the conditions in which they consequently the entire population is existing and operating. Such type of information provides valuable feed back regarding the existing set up of the farmers and also reflects the likely changes which can be brought out some of the social and economic characteristics such as demographic profile of sample farm families which includes family size, educational status and distribution of workers etc. coupled with land utilization pattern, size of holding, cropping intensity, cropping pattern, area irrigated and proportion of area under H.Y.V. etc.

3.2.1 Family Size

Family size is important in determining the income and consumption pattern of the family which in turn determines the disposable income for future investment and adoption of new farm economic reforms etc. The average family size of the different size class of farm for general category and SC/ST category in Solan and Mandi district have been presented in Table 3.2.1.

Family size of general category household It may be seen from table 3.2.1 that the average family size in Solan district of general category of farm was 4.14, 6.30, 6.84 and 10 persons per family for marginal, small, medium and large category of farms respectively. Whereas, it was 5.76 persons per family for all the categories taken together in this district. In Mandi district these figures were 4.32 persons per family for all categories of farmers whereas, 4.24 and 4.47 persons per family were found in marginal and small categories respectively. The average family size stands at 5.04 persons per family.

Family size of SC/ST category Table further shows the demographic profile of SC/ST families in Solan and Mandi district. It may be seen from the table that average family size in Solan district was 5.30 persons per family which ranges from 4.76 persons on marginal farm to 7 persons per family on medium size of farm showing positive relation with farm size. This demographic set up shows that joint family system is more prevalent among SC/ST population and proportion of workers is higher when compared to general category. But in counter part the average family size of SC/ST in Mandi district was 4.22 persons per family. The family size had positive relation with

farm size and only joint family had the large holding size. At overall level the average family size of the district is 4.66, which ranged from 4.19 persons from marginal to 7 persons per family on medium size of farm.

Family size of all sample Households

In over all sample of both districts under study the average family size was 4.85 persons, which was 4.17 person per farm in Mandi district and 5.53 persons in Solan. At overall level there were 63.09 per cent workers in total population these figures were 65.46 and 59.95 per cent in Solan and Mandi districts respectively.

Table 3.2.1: Size and Composition of Population of Sample Farmers of Solan and Mandi Districts of Himachal Pradesh.

(Persons per household)

Size of holding	General category				SC/ST category				All sample			
	Male	Female	Children	Total	Male	Female	Children	Total	Male	Female	Children	Tota
Solan District												
Marginal	1.52	1.33	1.29	4.14	1.76	1.50	1.50	4.76	1.66	1.43	1.41	4.50
Small	2.15	2.15	2.0	6.30	2.50	1.83	1.25	5.58	2.32	2.00	1.64	5.96
Medium	3.0	2.15	1.69	6.84	2.66	2.17	2.17	7.00	2.89	2.16	1.84	6.89
Large	4.33	3.0	2.67	10.0	4.50	1.50	0.50	6.50	4.40	2.40	1.80	8.60
All	2.24	1.86	1.66	5.76	2.16	1.66	1.48	5.30	2.20	1.76	1.57	5.53
Mandi District												
Marginal	1.73	1.61	0.91	4.35	1.55	1.29	1.00	3.84	1.62	1.42	0.96	4.00
Small	2.06	1.65	0.76	4.47	5.00	3.00	5.00	13.00	2.22	1.72	1.00	4.94
Medium	-	-	-	-	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-	-	-	-	-
All	1.84	1.62	0.86	4.32	1.62	1.52	1.08	4.22	1.73	1.47	0.97	4.17
Solan and Mandi Districts												
Marginal	1.65	1.50	1.05	4.20	1.63	1.37	1.19	4.19	1.64	1.42	1.13	4.19
Small	2.10	1.87	1.30	5.27	2.69	1.92	1.54	6.15	2.28	1.88	1.37	5.53
Medium	3.0	2.15	1.70	6.85	2.66	2.17	2.17	7.0	2.89	2.16	1.84	6.89
Large	4.33	3.0	2.67	10.0	4.50	1.50	0.50	6.50	4.40	2.40	1.80	8.60
All	2.04	1.74	1.26	5.04	1.89	1.49	1.28	4.66	1.96	1.61	1.28	4.85

3.2.2 Work Force

Availability of work force in the form of owned family labour plays an important role in household economy specially where farming is labour intensive. Table 3.2.2 shows the availability of work force on different size of farms in Solan and Mandi district along with SC/ST and general category of farms. The table indicates that at over level 65.89 per cent male and 66.26 per cent of

female are workers the proportion of workers was higher among SC/ST population. Similar situation may be observed in case of Mandi district and at overall sample. This shows that females were also equally participating in the work.

Table 3.2.2: Proportion of Work Force in Male and Female Population of Solan and Mandi Districts of Himachal Pradesh.

(Proportion of work force to total population)

Category of household	Proportion of workers to total population								
	General category			SC/ST category			All sample		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Solan District									
Marginal	59.57	65.0	62.07	68.92	65.15	65.73	65.28	65.09	64.34
Small	62.79	62.23	65.85	71.05	74.07	70.14	66.66	71.21	67.78
Medium	68.75	63.41	66.29	58.33	66.66	61.90	65.27	64.40	64.88
Large	61.11	58.33	60.0	80.0	66.66	76.92	67.85	60.0	65.11
All	63.46	65.15	64.23	68.49	67.54	68.07	65.89	66.26	66.05
Mandi District									
Marginal	58.67	61.54	60.0	58.49	65.85	61.70	58.56	63.95	60.98
Small	60.58	54.29	57.0	66.67	28.57	46.15	61.70	50.0	56.18
Medium	-	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-	-
All	59.48	59.0	59.26	58.93	62.92	60.70	59.21	60.85	59.95
Solan and Mandi Districts									
Marginal	59.10	62.85	60.79	63.48	64.66	63.44	62.08	63.92	62.36
Small	61.90	62.16	62.02	70.45	64.70	66.25	64.84	62.96	63.44
Medium	68.75	63.41	66.29	58.33	66.66	61.90	65.27	64.40	64.88
Large	61.11	58.33	60.0	80.0	66.66	76.92	67.85	60.0	65.11
All	61.76	62.50	62.10	64.84	64.87	64.16	63.49	63.61	63.09

3.2.3 Occupation Distribution

The distribution of work force engaged in different occupations of general and SC/ST category of farmers has been presented in Table 3.2.3. In general category of households farming is the main occupation of workers in both the districts under study, and agricultural alone absorb 60.71 and 54.55 per cent male workers in Solan and Mandi district respectively. Only marginal category of workers of Mandi district are engaged as wage labour. The other opportunity for workers in the area was Govt. service in which 32.32 per cent and 33.33 per cent workers are engaged in said occupation. It was also observed in the field that a negligible proportion of females is engaged in

government service of the reason that either they are not qualified for service or service is not available to them.

Like general category of farmers the agriculture also is a main stay of SC/ST workers under which 66 and 51.52 per cent of workers of Solan and Mandi district respectively are engaged 12 and 24 per cent of SC/ST workers are engaged as wage labour as their main occupation. These districts respectively. A small fraction of workers engaged in Govt. service and this percentage is much below than general category of households. Business and other jobs are limited in the area and only a small fraction of workers were engaged in this occupation.

The position of work force together in Solan and Mandi district for general and SC/ST workers shows that agriculture is the main sector for workers of these districts. This is mainly due to unqualified and unskilled work force available in both the districts.

Table 3.2.3: Distribution of Work-force According to main Occupation on Sample Farms in Solan and Mandi Districts of Himachal Pradesh.

(Percentage to total workforce)

Category of household	General category				SC/ST category				All sample			
	Agri.	Wage labour	Service	Other	Agri	Wage labour	Service	Other	Agri.	Wage labour	Service	Othe
Solan District												
Marginal	60.71	-	35.71	3.58	70.59	5.89	7.84	15.68	67.08	3.80	17.72	11.4
Small	48.15	-	37.03	14.82	55.56	14.81	29.63	-	51.86	7.41	33.33	7.40
Medium	66.67	-	27.27	6.06	57.14	35.71	-	7.15	63.83	10.64	19.15	6.38
Large	54.55	-	27.27	18.18	87.50	-	12.50	-	68.43	-	21.05	10.5
All	58.59	-	32.32	9.09	66.0	12.0	13.0	2.0	62.31	6.03	22.61	9.05
Mandi District												
Marginal	54.55	4.54	22.73	18.18	51.61	25.81	16.13	6.45	52.83	16.98	18.87	11.3
Small	44.0	-	52.0	4.0	50.0	-	50.0	-	44.83	-	51.72	3.45
Medium	-	-	-	-	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-	-	-	-	-
All	50.72	2.90	33.33	13.05	51.52	24.24	18.18	6.06	51.11	13.33	25.03	9.63
Solan and Mandi District												
Marginal	56.94	2.78	27.78	12.50	68.18	16.81	12.39	10.62	58.92	11.35	18.38	11.3
Small	46.15	-	44.23	9.62	54.84	12.90	32.26	-	49.40	4.82	39.76	6.02
Medium	66.67	-	27.27	6.06	57.14	35.71	-	7.15	63.83	10.64	19.15	6.38
Large	54.55	-	27.27	18.18	87.50	-	12.50	-	68.42	-	21.05	10.5
All	55.36	1.19	32.74	10.78	60.24	16.88	15.06	7.82	57.78	8.98	23.96	9.28

3.2.4 Secondary Occupation

Secondary occupation of workers in Solan and Mandi district for general and SC/ST categories of farm has been presented in Table 3.2.4. The table reveals that again agriculture is mainstay of the secondary occupation adopted by both the categories of Solan district. Those who are engaged in service or business adopt this secondary occupation. The position of secondary occupation was quite different in Mandi district. About 18 per cent workers were wage labour in the district in general category of workers. More than half of the workers in SC/ST adopt wage labour as their secondary occupation. At overall level of Solan and Mandi district agriculture works is the secondary occupation for non-agriculture workers and service class.

Table 3.2.4: Distribution of Work-force According to Secondary Occupation on Sample Farms in Solan and Mandi District of Himachal Pradesh.

(Percentage to total workforce)

Category of household	General category				SC/ST category				All sample			
	Agri.	Wage labour	Service	Others	Agri	Wage labour	Service	Others	Agri.	Wage labour	Service	Others
Solan District												
Marginal	100.0	-	-	-	100.0	-	-	-	100.0	-	-	-
Small	100.0	-	-	-	100.0	-	-	-	100.0	-	-	-
Medium	100.0	-	-	-	100.0	-	-	-	100.0	-	-	-
Large	100.0	-	-	-	100.0	-	-	-	100.0	-	-	-
All	100.0	-	-	-	100.0	-	-	-	100.0	-	-	-
Mandi District												
Marginal	76.92	23.08	-	-	46.88	53.12	-	-	60.35	39.65	-	-
Small	100.0		-	-	50.0	-	-	50.0	88.89	-	-	11.11
Medium	-	-	-	-	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-	-	-	-	-
All	81.82	18.18	-	-	47.06	50.0	-	2.94	64.18	34.33	-	1.49
Solan and Mandi District												
Marginal	83.78	16.21	-	-	63.83	36.17	-	-	72.62	27.38	-	
Small	100.0	-	-	-	92.86	-	-	7.14	97.14	-	-	2.86
Medium	100.0	-	-	-	100.0	-	-	-	100.0	-	-	-
Large	100.0	-	-	-	100.0	-	-	-	100.0	-	-	-
All	91.89	8.11	-	-	73.53	25.0	-	1.47	83.10	16.20	-	0.70

3.2.5 Level of Literacy

The green revolution and post green revolution development in Indian agriculture has been a result of employment of modern technology; consequently, government for the popularization of use of modern inputs is making constant efforts. The Indian farmer is greatly constrained by the traditional agriculture and has not been able to shift to modern agriculture because of lack of future

vision and basic financial assistance. This vicious circle of traditional inputs and low yield can be broken by broadening the perception of farmers. This can be done by their formal as well as informal education.

The male and female literacy in Solan and Mandi districts of general and SC/ST category of farm has been presented in Table 3.2.5. Table reveals that, at overall level among general category of household 91.53 per cent of male and 75.68 per cent of female population was literate. The literacy rate has no relation with size of farm and it depends on the future vision of the family. It was observed that all the youngsters in the family are busy in schooling and only the old age persons are illiterate.

Further table reveals that among SC/ST 83.33 per cent of male and 60.96 per cent female are literate. This percentage is lower than general category of household in the same environment. The literacy percentage was higher in Solan district among males as well as in females. Among SC/ST farms, farm size has no impact on education.

The education status of all sample (SC/ST+General) of Solan and Mandi district shows that, at overall level highest literacy rate was observed in case of small farms. At overall level 12 per cent male and about 29 per cent female were found to be illiterate. This percentage is higher in Mandi district in comparison to Solan.

Table 3.2.5: Level of literacy in male & Female Population of Sample Farm in Solan and Mandi Districts of Himachal Pradesh

(Per cent to total population)

Category of household	General category		SC/ST category		All sample	
	Male	Female	Male	Female	Male	Female
Solan District						
Marginal	90.0	73.68	87.32	60.34	88.28	65.62
Small	94.87	94.59	83.33	62.96	89.33	81.25
Medium	87.23	78.04	86.95	83.33	87.14	79.66
Large	93.33	63.63	66.66	0.00	83.33	50.0
All	90.78	80.31	84.89	63.20	87.85	72.53
Mandi District						
Marginal	86.76	67.79	80.19	56.57	82.63	61.48
Small	100.0	81.25	100.0	80.0	100.0	72.97
Medium	-	-	-	-	-	-
Large	-	-	-	-	-	-
All	91.59	69.23	81.30	58.02	86.44	63.95
Solan and Mandi Districts						
Marginal	87.96	70.10	83.13	58.20	85.0	63.20
Small	97.50	84.05	85.71	65.62	93.44	78.21
Medium	87.23	78.04	86.95	83.33	87.14	79.66
Large	93.33	63.63	66.66	0.00	83.33	50.0
All	91.53	75.68	83.33	60.96	87.29	68.88

3.2.6 Education Status of Head of The Families

There is a great importance of head of the family being educated one. Educated head of the family can take important decisions leading to highest production as well as productivity. The level of education among family heads has been presented in Table 3.2.6. Table reveals that at overall level of general category, 32 per cent head of the families were illiterate. At overall level 38.00 and 26.00 per cent of family head were illiterate in Solan and Mandi district respectively. Most of the family head of general category has attained primary level of education, which accounts for 41 per cent. There is no sign of higher education in general category of farms. For SC/ST category, at overall level 33, 24, 38 and 5 per cent head of the family are illiterate, primary, matric and above matric respectively.

Table 3.2.6: Education Status of Head of the Household on Sample Farms in Solan and Mandi Districts of Himachal Pradesh.

Category of household	General category					SC/ST category				
	Illiterate	Primary	Matric	Above matric	Sample size	Illiterate	Primary	Matric	Above matric	Sample size
Solan District										
Marginal	30.00	53.33	16.67	-	30	19.05	4.76	61.91	14.29	21
Small	14.66	16.67	16.67	25.00	12	15.39	7.69	76.92	-	13
Medium	66.67	16.67	16.67	-	6	23.08	15.38	53.85	7.69	13
Large	50.00	50.00	-	-	2	33.33	33.34	-	33.33	3
All	38.00	38.00	16.00	8.00	50	20.00	10.00	60.00	10.00	50
Mandi District										
Marginal	36.36	30.30	33.33	-	33	46.95	36.73	16.32	-	49
Small	5.88	70.59	23.53	-	17	-	100.00	-	-	1
Medium	-	-	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-	-	-
All	26.00	44.00	30.00	-	50.00	46.00	38.00	16.00	-	50
Solan and Mandi Districts										
Marginal	33.33	41.27	25.40	-	63	38.57	27.14	30.00	4.29	70
Small	20.70	48.28	20.70	10.35	29	14.29	14.28	71.43	-	14
Medium	66.67	-	16.66	16.67	6	23.08	15.38	53.85	7.69	13
Large	50.00	50.00	-	-	2	33.33	33.34	-	33.33	3
All	32.00	41.00	23.00	4.00	100	33.00	24.00	38.00	5.00	100

Contd….

Table 3.2.6 Contd….

Category of household	All sample				
	Illiterate	Primary	Matric	Above matric	Sample size
Solan District					
Marginal	25.49	33.33	35.29	5.88	51
Small	28.00	12.00	48.00	12.00	25
Medium	36.84	10.52	42.11	10.53	19
Large	40.00	40.00	-	20.00	5
All	29.00	24.00	37.00	10.00	100
Mandi District					
Marginal	43.90	32.93	23.17	-	49
Small	5.56	72.22	22.22	-	1
Medium	-	-	-	-	-
Large	-	-	-	-	-
All	48.00	36.00	16.00	-	50
Solan and Mandi Districts					
Marginal	36.09	33.83	27.82	2.26	133
Small	18.60	37.21	32.21	6.98	43
Medium	36.84	10.52	42.10	10.53	19
Large	40.00	40.00	-	20.00	5
All	32.50	32.50	30.50	4.50	200

3.2.7 Size of Land Holding

Land holding in Himachal Pradesh is generally small. As a result 92 per cent of the total farmers among SC/ST and 84 per cent in general category are marginal and small whereas 6 and 13 per cent are medium and 2 per cent and 3 per cent are large land holder on SC/ST and general category of farms respectively (Tale 3.2.7). In general category average size of land holding was 0.56, 1.48, 2.64 and 5.87 hectare among marginal, small, medium and large farmers respectively. On an average, at overall level average size of per farm land is 1.27 hectare whereas, it is 1.83 hectare in Solan and 0.70 hectare in Mandi district.

At overall level the average size of land holding of SC/ST category is 0.75 hectare which is 1.26 and 1.25 hectare in Solan and Mandi districts respectively. Analysis shows that holding size of SC/ST category of Solan and Mandi district and State as a whole is small in comparison to general category of farmers. No case of land leasing in or land leasing out was found among SC/ST and

general category of farms. This is because of strict implementation of land reforms in the state. At overall level the holding size was 1.01 hectare for all sample households.

Table 3.2.7: Land Holding Size of Sample Household in Solan and Mandi Districts Himachal Pradesh.

(Per household in ha.)

Category of household	General category				SC/ST category				All sample			
	Area owned.	Leased in (+)	Leased out(-)	Total holding	Area owned.	Leased in (+)	Leased out(-)	Total holding	Area owned.	Leased in (+)	Leased out(-)	Total holding
Solan District												
Marginal	0.84	-	-	0.84	0.54	-	-	0.54	0.66	-	-	0.66
Small	1.70	-	-	1.70	1.46	-	-	1.46	1.58	-	-	1.58
Medium	2.64	-	-	2.64	2.79	-	-	2.79	2.69	-	-	2.69
Large	5.87	-	-	5.87	6.40	-	-	6.40	6.08	-	-	6.08
All	1.83	-	-	1.83	1.26	-	-	1.26	1.55	-	-	1.55
Mandi District												
Marginal	0.38	-	-	0.38	0.22	-	-	0.22	0.29	-	-	0.29
Small	1.32	-	-	1.32	1.28	-	-	1.28	1.32	-	-	1.32
Medium	-	-	-	-	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-	-	-	-	-
All	0.70	-	-	0.70	0.25	-	-	0.25	0.47		-	0.47
Solan and Mandi Districts												
Marginal	0.56	-	-	0.56	0.34	-	-	0.34	0.43	-	-	0.43
Small	1.48	-	-	1.48	1.45	-	-	1.45	1.47	-	-	1.47
Medium	2.64	-	-	2.64	2.79	-	-	2.79	2.69	-	-	2.69
Large	5.87	-	-	5.87	6.40	-	-	6.40	6.08	-	-	6.08
All	1.27	-	-	1.27	0.75	-	-	0.75	1.01	-	-	1.01

3.2.8 Land Use Pattern

The category wise land use pattern of general and SC/ST farmers of Solan and Mandi district has been presented in Table 3.2.8. In general category of farmers, the average size of operational holding was 0.82 hectare in Solan districts. Double cropping is practiced on all sizes of farms and ghasni has positive relation with farm size. In Mandi district, the average size of operational

holding was 0.69 hectare. Marginal farmers use their land intensively and cropping intensity was worked out to be 200 per cent. The general category of farmers together, at overall level, had average size of operational holding to be 0.76 hectare, which ranges from 0.41 hectare on marginal farm to 2.40 hectare on large farm. The cropping intensity was 188.12 per cent. In Solan and Mandi district the holding size of SC/ST farmers was low when compared to the land holding size of respective category of general households. The average size of operational holding of SC/ST families in Solan district is 0.57 hectare. At overall level the cropping intensity was worked out to be 200 per cent.

In Mandi district at overall level the operational holding was 0.24 hectare which was less than half of their counter part of general category of household in the same area. It is also important to note that all the available land was properly used for cultivation. At overall level cropping intensity was worked out to be 190.13 per cent.

Land use pattern of (general and SC/ST) different farms in Solan and Mandi district reveals that holding size in Solan district is greater than Mandi district for all category of farms. The land use pattern of Solan district shows that the average size of operational holding was 0.69 hectare and cropping intensity was 199.31 percent. In Mandi district the operational holding was 0.47 hectare. The cropping intensity was 178.72 per cent.

If we analyse the general and SC/ST as well as Solan and Mandi district together the average operational holding was worked out to be 0.58 hectare which vary into 0.31, 0.96, 1.15 and 2.32 hectare on marginal, small, medium and large size of farm respectively. The cropping intensity was 197.89, 178.14, 198.76 and 200 percent on marginal, small, medium and large size of farm respectively.

Table: 3.2.8 Land use Pattern of Sample Households in Solan and Mandi district of Himachal Pradesh.

(Per household area in hect.)

Size of holding	General category					SC/ST category				
	Area under cultivation	Ghasni	Other use	Average size of operated holding	Cropping intensity	Area under cultivation	Ghasni	Other use	Average size of operated holding	Cropping intensity
Solan District										
Marginal	0.46	0.39	-	0.46	199.14	0.29	0.25	-	0.29	200.00
Small	0.78	0.91	-	0.78	196.85	0.67	0.78	-	0.67	200.00
Medium	1.11	1.53	-	1.11	200.00	1.23	1.56	-	1.23	199.18
Large	2.40	3.46	-	2.40	200.00	2.20	4.20	-	2.20	200.00
All	0.82	1.00	-	0.82	199.02	0.57	0.69	-	0.57	200.00
Mandi District										
Marginal	0.38	-	-	0.38	200.00	0.22	-	-	0.22	192.65
Small	1.29	0.04	-	1.29	162.27	1.28	-	-	1.28	168.75
Medium	-	-	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-	-	-
All	0.69	0.01	-	0.69	176.07	0.24	-	-	0.24	190.13
Solan and Mandi Districts										
Marginal	0.41	0.15	-	0.41	199.14	0.25	0.09	-	0.25	196.00
Small	1.07	0.40	-	1.07	173.25	0.72	0.73	-	0.72	194.44
Medium	1.11	1.53	-	1.11	200.00	1.22	1.56	-	1.22	199.18
Large	2.40	3.46	-	2.40	200.00	2.20	4.20	-	2.20	200.00
All	0.76	0.51	-	0.76	188.12	0.41	0.35	-	0.41	195.12

Contd….

Table 3.2.8 Contd….

Category of household	All sample				
	Area under cultivation	Ghasni	Other use	Average size of operational holding	Cropping intensity
Solan District					
Marginal	0.35	0.30	-	0.35	199.56
Small	0.71	0.85	-	0.71	200.00
Medium	1.14	1.54	-	2.32	197.81
Large	2.32	3.76	-	2.32	200.00
All	0.69	0.85	-	0.69	199.31
Mandi District					
Marginal	0.29	-	-	0.29	196.59
Small	1.28	0.04	-	1.28	162.63
Medium	-	-	-	-	-
Large	-	-	-	-	-
All	0.47	0.01	-	0.47	178.72
Solan and Mandi Districts					
Marginal	0.31	0.12	-	0.31	197.89
Small	0.96	0.50	-	0.96	178.14
Medium	1.15	1.54	-	1.15	198.76
Large	2.32	3.76	-	2.32	200.00
All	0.58	0.42	-	0.58	191.37

3.2.9 Cropping Pattern

Changes in cropping pattern represent the response of changing economic, technological and institutional factors. On the other hand, the prevalent cropping pattern of an area is a result of the prevailing agro-climatic condition, which in turn are determined by the altitude, soil type, rainfall etc. Table 3.2.9, 3.2.10 and 3.2.11 show the percentage of important crops in G.C.A., percentage of irrigated area under important crops and area under H.Y.V. seeds of important crops has been analysed and represented the SC/ST and general categories of different sizes of farms in Solan and Mandi districts of Himachal Pradesh.

3.2.9.1 Cropping Pattern of Solan District Wheat and maize are the major important crops of the farmers and these two crops occupied more than 90% area of G.C.A. on different sizes of farms. Other important crops are barley and tomato which contributed about 8% area of G.C.A. at overall level. The whole of study area in Solan district is rainfed. Despite that H.Y.V. seeds of all crops

are popular in the study area which covered more than 92% of G.C.A. except barley it may be seen in the table 3.2.9.

Table 3.2.9: Percentage of G.C.A., Irrigated Area and Area Under H.Y.V. Seeds of Important Crops in Solan Districts of Himachal Pradesh.

Crops	Marginal			Small			Medium			Large			All		
	% of G.C.A.	%Irri. area	% H.Y.V.	% of G.C.A.	%Irri. area	% H.Y.V.	% of G.C.A.	%Irri. area	% H.Y.V.	% of G.C.A.	%Irri. area	% H.Y.V.	%of G.C.A.	%Irri. area	% H.Y.V
SC/ST Category															
Wheat	50.00	-	91.11	47.76	-	91.14	43.48	-	93.75	48.18	-	94.33	47.41	-	92.5
Barley	-	-	-	1.99	-	-	6.52	-	-	1.82	-	-	2.52	-	-
Maize	43.39	-	91.86	44.90	-	96.95	41.85	-	97.40	47.27	-	96.15	44.02	-	95.8
Tomato	6.50	-	100.0	4.23	-	100.0	5.43	-	100.0	2.73	-	100.0	5.00	-	100
General Category															
Wheat	45.49	-	94.33	47.20	-	95.33	48.33	-	93.39	45.56	-	91.46	46.99	-	93.5
Barley	4.29	-	0.00	2.00	-	-	1.67	-	-	4.44	-	-	2.83	-	-
Maize	40.57	-	92.59	45.20	-	88.49	42.60	-	89.57	40.00	-	86.60	42.32	-	89.9
Tomato	6.01	-	100.0	4.00	-	100.0	3.76	-	100.0	5.56	-	100.0	4.65	-	100
SC/ST General Category															
Wheat	47.68	-	92.69	47.45	-	93.45	46.69	-	93.50	46.55	-	92.50	47.12	-	93.2
Barley	2.21	-	-	1.99	-	-	3.31	-	-	3.45	-	-	2.70	-	-
Maize	41.94	-	92.22	45.07	-	92.25	42.37	-	92.19	42.77	-	90.72	43.04	-	91.7
Tomato	6.24	-	100.0	4.11	-	100.0	4.32	-	100.0	4.48	-	100.0	4.79	-	100

3.2.9.2 Cropping Pattern of Mandi District At overall level 88% area of G.C.A. is covered by wheat and maize (Table 3.2.10). The other important crops are pea and paddy which contributed about 6.23% and 5.67% area of G.C.A. respectively. Only general category of farms had some

irrigation which was absent on SC/ST households farms. The major irrigated crops grown are wheat, pea, maize and paddy in all samples, about 10% area of total G.C.A. was irrigated which was below the state average irrigated area. At overall level the proportion of total area under H.Y.V. seeds was 93.8% in wheat crop and 100% in pea and paddy and 96.5% in maize.

Table 3.2.10: Percentage of G.C.A., Irrigated Area and Area Under H.Y.V. Seeds of Important Crops in Mandi Districts of Himachal Pradesh.

Crops	Marginal			Small			Medium			Large			All		
	% of G.C.A.	%Irri. Area	% H.Y.V.	% of G.C.A.	%Irri. area	% H.Y.V.	% of G.C.A.	%Irri. area	% H.Y.V.	% of G.C.A.	%Irri. area	% H.Y.V.	%of G.C.A.	%Irri. area	% H.Y.V.
SC/ST Category															
Wheat	49.24	-	93.02	29.63	-	100.0	-	-	-	-	-	-	47.41	-	93.43
Barley	0.38	-	100.0	11.11	-	100.0	-	-	-	-	-	-	1.38	-	100.0
Maize	47.33	-	93.55	22.22	-	100.0	-	-	-	-	-	-	44.98	-	93.85
Tomato	3.05	-	100.0	37.04	-	100.0	-	-	-	-	-	-	6.23	-	100.0
General Category															
Wheat	43.81	3.62	89.49	40.88	8.11	79.63	-	-	-	-	-	-	41.96	6.39	84.03
Barley	6.19	-	100.0	8.84	41.67	100.0	-	-	-	-	-	-	7.87	29.63	100.0
Maize	49.37	2.57	96.14	41.99	4.39	82.95	-	-	-	-	-	-	44.69	3.65	93.39
Tomato	0.63	50.0	100.0	8.29	62.22	100.0	-	-	-	-	-	-	5.48	61.70	100.0
SC/ST General Category															
Wheat	46.28	1.87	91.20	40.35	7.83	96.96	-	-	-	-	-	-	43.33	4.63	93.86
Barley	3.55	-	100.0	8.95	39.22	100.0	-	-	-	-	-	-	6.23	27.97	100.0
Maize	48.44	1.43	94.99	41.05	4.27	98.29	-	-	-	-	-	-	44.77	2.73	96.50
Tomato	1.73	10.0	100.0	9.65	50.91	100.0	-	-	-	-	-	-	5.67	44.62	100.0

3.2.9.3 Cropping Pattern of Solan and Mandi Districts At overall level 45.62% and 43.72% of G.C.A. was under wheat and maize respectively. The other important crops were barley pea, paddy and tomato which contributed by 1.63% , 2.48%, 2.26% and 2.89% respectively of G.C.A. The 1.71% of wheat 27.97% of pea, 1.11% of maize and 44.61% of paddy was under irrigation.

Table 3.2.11: Percentage of G.C.A., Irrigated Area and Area Under H.Y.V. Seeds of Important Crops in Solan and Mandi Districts of Himachal Pradesh.

Crops	Marginal			Small			Medium			Large			All		
	% of G.C.A.	%Irri. area	% H.Y.V.	% of G.C.A.	%Irri. area	% H.Y.V.	% of G.C.A.	%Irri. area	% H.Y.V.	% of G.C.A.	%Irri. area	% H.Y.V.	%of G.C.A.	%Irri. area	% H.Y.V.
SC/ST Category															
Wheat	49.59	-	92.14	45.61	-	91.82	43.48	-	93.75	48.18	-	94.33	47.41	-	92.59
Barley	-	-	-	1.75	-	-	6.52	-	-	1.82	-	-	1.79	-	-
Peas	0.21	-	100.0	1.32	-	100.0	-	-	-	-	-	100.0	0.40	-	100.0
Maize	45.53	-	92.81	42.21	-	97.14	41.85	-	97.40	47.27	-	94.33	44.29	-	94.93
Paddy	1.66	-	100.0	4,39	-	100.0	-	-	-	-	-	-	1.79	-	100.0
Tomato	2.96	-	100.0	3.73	-	100.0	5.43	-	100.0	2.73	-	100.0	3.56	-	100.0
General Category															
Wheat	44.53	2.05	91.59	42.88	5.29	96.32	48.33	-	93.39	45.56	-	91.46	44.66	2.74	92.84
Barley	1.82	-	-	0.63	-	-	1.67	-	-	4.44	-	-	1.54	-	-
Peas	6.56	-	100.0	6.05	7.91	100.0	-	-	86.80	-	-	-	3.59	2.96	100.0
Maize	45.62	1.60	86.65	43.00	2.93	95.01	42.64	-	89.57	40.00	-	86.80	43.40	1.71	90.75
Paddy	0.36	50.00	100.0	5.67	62.62	100.0	-	-	100.0	-	-	-	2.50	61.70	100.0
Tomato	2.56	-	100.0	1.26	-	100.0	3.75	-	100.0	5.56	-	100.0	2.53	-	100.0
SC/ST General Category															
Wheat	46.89	1.04	91.86	43.48	4.05	95.27	46.69	-	93.50	46.55	-	92.59	45.61	1.71	92.70
Barley	0.97	-	-	0.89	-	-	3.31	-	-	3.45	-	-	1.63	-	-
Peas	1.99	-	100.0	4.99	39.22	100.0		-	-	-	-	-	2.48	27.97	100.0
Maize	45.59	0.85	93.87	42.82	2.29	95.48	42.37	-	92.19	42.76	-	90.72	43.72	1.11	93.81
Paddy	0.97	10.00	100.0	5.39	50.91	100.0	-	-	-	-	-	-	2.26	44.61	100.0
Tomato	2.74	-	100.0	1.81	-	100.0	4.32	-	100.0	4.48	-	100.0	2.89	-	100.0

3.2.10 Productivity of Important Crops in Selected Households of Solan & Mandi Districts

Productivity of important crop in Solan and Mandi districts to SC/ST and general type of different type of cultivators is presented in Table 3.2.12. It is important to mention that the productivity of all crops is much below the state average as well as whole district average. Therefore it is important to mention that there is much scope for development in this direction.

3.2.12: Productivity of Important Crops of Selected Farm Households in Solan and Mandi District of Himachal Pradesh.

Crops	Solan Districts					Mandi Districts				
	Marginal	Small	Medium	Large	All	Marginal	Small	Medium	Large	All
SC/ST Category										
Wheat	12.75	10.93	11.56	11.79	11.84	16.00	9.38	-	-	15.60
Barley	-	6.25	3.12	6.25	4.16	-	-	-	-	-
Peas	-	-	-	-	-	50.00	42.00	-	-	44.00
Maize	16.79	14.26	14.12	12.38	14.78	25.40	18.75	-	-	25.19
Paddy	-	-	-	-	-	20.00	19.00	-	-	19.10
Tomato	210.53	204.41	210.00	216.66	209.44	-	-	-	-	-
General Category										
Wheat	14.03	12.92	11.78	11.43	12.50	12.00	10.36	-	-	11.00
Barley	1.25	6.25	8.33	10.93	6.25	-	-	-	-	-
Peas	-	-	-	-	-	40.00	45.00	-	-	44.00
Maize	16.93	15.26	14.73	13.36	15.12	27.00	23.47	-	-	24.76
Paddy	-	-	-	-	-	25.00	23.00	-	-	23.40
Tomato	150.00	167.00	204.00	169.00	173.00	-	-	-	-	-
SC/ST General Category										
Wheat	13.37	12.03	11.71	11.57	12.23	13.95	10.32	-	-	12.27
Barley	1.25	6.25	4.86	10.00	5.45	-	-	-	-	-
Peas	-	-	-	-	-	40.24	44.85	-	-	43.53
Maize	16.86	14.82	14.53	13.20	14.98	26.09	23.34	-	-	24.84
Paddy	-	-	-	-	-	20.62	22.50	-	-	22.21
Tomato	180.00	184.45	206.00	179.80	188.00	-	-	-	-	-

CHAPTER – IV

UITILIZATION OF AGRICULTURAL SUBSIDIES – AN EVIDENCE FROM FIELD SURVEY

4.1 The Rational for Subsidies

In Himachal Pradesh, the emphasis on the development of agriculture assumer greater importance because of less scope of industrialization due to hilly terrain. So the agricultural subsidies also become important. The cost of production of various agricultural commodities varies from one region to another yet the Commission of Cost and Agriculture Prices (CACP) determined a uniform, nation-wide support price for each commodity. Therefore, there was a justification for region specific subsidies, which will permit farmers to receive cost-plus prices for these commodities, and in turn would help to enhance their production. The cost of production was only one among the many considerations determining the recommendation of price by CACP. Using subsidies to overcome regional imbalances and to arrive at a cost-plus price may not be a feasible task.

Subsidies compensated for the poor risk-bearing ability of the smaller farmers and thus promoted greater use of innovative inputs and technology. Compensation for risk is, however, one of the many bases considered for subsidies. Other justification would include the introduction of a new activity, a need for greater production of commodities which did not offer comparative advantages at current market prices, inducing individuals to undertake activities for which the social benefit far outweighed the private benefit, and finally political considerations.

There is a need to identify correctly the basic cause leading to the relatively slow acceptance of measures for which subsidy was advocated. For example, there could be a total ignorance regarding the specific activity, in such cases extensive demonstrations would appear to be a better solution. The smaller cultivators may well face a resource constraint which could not be met from available sources. Capital scarcity could be tackled through other measures, if practicable, such as greater credit provision on easier terms. Quite often, the expected result from a new technology or an input

might show a wide variance around the mean. In such case, the intended beneficiary might tend to be guided by the worst possible outcome, which may not be sufficiently attractive. The remedy then would be to undertake improvement of a technological nature either to reduce the variance or to raise the mean level sufficiently to make the innovation attractive (Shreekant 1981).

The needs of the beneficiary population/region, the objectives of the contemplated activity, the risk involved and the prospects for stabilizing and maintaining production all need to be considered in their totality. Subsidy then would well be come one of the many measures available for meeting the objective of increased production and incomes, rather than the only one. It may be further necessary to distinguish subsidies by individuals, classes, areas, and programme for which they are meant. Such a segmentation of the rationale for subsidies may lead to a more appropriate design for the disbursement of subsidy. Subsidies may be used to bring about a convergence between choices considered desirable on social and private ground.

4.2 The Forms of Subsidy

An analysis of the rationale for subsidies would also lead to a determination of an appropriate form for its distribution. If, for example, the objective is to prevent the disincentive efforts of poor price, support prices may be contemplated. They should not be confused, however, with incentive for higher production. Support prices serve a purpose different from that of input subsidies. Further, the benefits from support prices accrue to only those who have surplus to market. It would be necessary to take into account the trade-off between the incentive effects of subsidy and its cost before arriving at an appropriate form of subsidy.

Subsidies can be classified as consumer subsidies, factor subsidies, input subsidies or special purpose subsidies. A consumer subsidy is designed to benefit low income consumers by enabling them to increase their consumption of a particular commodity or service with out an off setting decrease in other consumption. A factor subsidy is intended to benefit factors specialized to an industry or any other sector by raising rates of consumption or decreasing unemployment. Input subsidies in agriculture are subsidies on fertilizers, seeds, implements, irrigation, plant protection materials etc. to promote the production of particular crop. Special purpose subsidies are not designed to benefit either consumers or factors as such, but aim at the attainment of a stipulated rate

of economic growth and movement towards optimum resource allocation by capturing certain positive externalities.

Agricultural subsidies to farmers in Himachal Pradesh are mainly of two type i.e. input subsidies and out put subsidies. Input subsidies are on fertilizer, seeds plant protection material etc. on the other hand output subsidies are on mainly given on food grains. The present study is concerned with all type of subsidies granted to the farmers for the promotion of agricultural production.

Inputs on which subsidy was availed by the sampled farmers are fertilizer, seeds, plant protection material and food items. The number of sampled cultivators availed subsidies on these inputs and the amount per hectare are analysed separately for different inputs and given below.

4.3 Per Farm Subsidy Availed on Fertilizers

The per farm subsidy availed on different fertilizers by general and SC/St farmers in Solan and Mandi district is presented in Table 4.1. In Solan district per farm subsidy on fertilizer was Rs.84.99 on general category of farm and Rs.58.49 on SC/ST category of farms. This is because of large holding size of general category. The similar situation has been observed at overall level.

In Mandi district per farm subsidy on fertilizer for general category was Rs.52.58 per farm while in case of SC/ST it was Rs.23.23 per farm. This is because of small proportion of land holding on SC/ST category of farms as compared to general category of farms. The fertilizer subsidy registered a positive relation with farm size.

At overall level of Solan and Mandi districts per farm subsidy on fertilizer was Rs.54.82. A general household got Rs.68.79 as fertilizer subsidy while it was Rs.40.86 per household for SC/ST category. This is because of small size of land holding of SC/ST category of farms.

4.4 Per Hectare Subsidy Availed on Fertilizers

The per hectare subsidy availed by different category of farmers on different fertilizers by general and SC/ST farmers in Solan and Mandi district is presented in Table 4.1. The table shows

that per hectare fertilizer subsidy availed by all farmers of Solan district on different fertilizers was Rs.51.61 and was marginally higher for general category of farms. A minimum level of fertilizer is generally applied in field crops in rainfed condition therefore, large variation could not be observed in the use of fertilizer subsidy on SC/ST and general category of farms.

Subsidy on all type of fertilizers in Mandi district shows that at overall level (SC/St and general) the fertilizer subsidy worked out to be Rs.41.31 per hectare. The level of subsidy on all fertilizers availed by SC/ST category are much higher than general category of farmers. This is because of the reason that SC/ST farmers are much aware, conscious and interested about farming and applying higher dozes of fertilizer than general category of farm. The per hectare subsidy on overall sample of Solan and Mandi district together on different size of farm reveals that marginal farmers applied higher dose of fertilizer than that of other category of farms. Farm size had no impact on per hectare subsidy use.

Table: 4.1 Per Farm and Per Hectare Value of subsidy on Fertilizer Availed By Different Size of sample Farm in Solan and Mandi District of Himachal Pradesh.

(Rs.)

Farm Size	General Category		SC/ST Category		All	
	Per farm	Per hectare of GCA	Per Farm	Per hectare of GCA	Per Farm	Per hectare of GCA
Solan District						
Marginal	52.89	59.58	31.84	54.40	40.50	57.07
Small	74.49	48.42	64.20	47.90	69.55	48.19
Medium	111.14	50.16	128.46	52.36	116.61	50.89
Large	241.90	50.39	214.02	48.68	230.74	49.73
All	84.99	51.92	58.49	51.07	71.74	51.61
Mandi District						
Marginal	29.50	39.22	20.76	48.54	24.46	43.45
Small	96.52	37.76	144.50	66.89	99.18	39.15
Medium	-	-	-	-	-	-
Large	-	-	-	-	-	-
All	52.58	38.30	23.23	50.25	37.91	41.31
Solan and Mandi Districts						
Marginal	38.87	47.88	24.97	51.25	30.61	49.44
Small	36.98	41.13	70.37	50.15	81.95	43.14
Medium	111.14	50.16	128.46	52.36	116.61	50.91
Large	241.90	50.39	214.02	48.68	230.74	49.73
All	68.79	45.70	40.86	50.90	54.82	47.51

4.5 Per Farm Subsidy Availed on Seeds

The per farm subsidy availed on different seeds by general and SC/ST farmers in Solan and Mandi district has been presented in table 4.2. In Solan district at over all level subsidy was Rs.180.84 per farm which subsidy on seeds distribution has been Rs.175.68 on general category and Rs.186.00 on SC/ST category which, shows that SC/ST category of farmers using higher quantities of purchased seed in comparison to general category of farms. Subsidy shows positive relation with farm size but general category farm has no such relation with seed subsidy.

In Mandi district subsidy on seed was Rs.56.55 per farm at overall level which increased with the size of farm. The level of farm subsidy is almost equal on SC/ST and general category of farms. Regarding overall sample of Solan and Mandi district general household availed Rs.118.69 as seed subsidy. In the farms of SC/ST the seeds subsidy had positive relation with farm size but general category had no relation with farm size.

4.6 Per Hectare Subsidy Availed on Seeds

The per hectare subsidy availed on seed among different category of sample farms of general and SC/ST farmers in Solan and Mandi district has been presented in Table 4.2. Table shows that in Solan district at over all level subsidy availed by farmers was Rs.130.00 per hectare. Farm size has no relation with subsidy because of varying level of subsidy among different size of farms. Marginal and small size of farms of general and SC/ST category availed low level of subsidy as compared to medium and large category of farms.

The per hectare subsidy at overall level in Mandi district was Rs.61.62 which was Rs.84.81 on marginal farms and Rs.38.15 on small farms. The levels of seed subsidy availed by SC/ST category recorded higher than that of general category of farms. This is because of higher level of subsidy to SC/ST farmers.

The per hectare subsidy on seeds distributed in Solan and Mandi district together for different size of farms reveals that it was Rs.102.89 which had no relation with farm size. The level of seed subsidy was higher on SC/ST farms than that of general category of farms. Seed subsidies

observed to be higher in Solan district in comparison to Mandi district. This is because of awareness and development among the farmers of district Solan in comparison to Mandi.

Table: 4.2 Per Farm and Per Hectare Value of Subsidies on Seeds Availed By Different Size of Sample Farms in Solan and Mandi District of Himachal Pradesh.

(Rs.)

Farm Size	General Category		SC/ST Category		All	
	Per farm	Per hectare of GCA	Per Farm	Per hectare of GCA	Per Farm	Per hectare of GCA
Solan District						
Marginal	135.19	152.30	96.66	165.14	112.52	158.53
Small	247.30	160.00	216.66	161.69	232.60	161.16
Medium	138.46	62.50	350.00	142.66	205.26	89.61
Large	310.00	64.58	850.00	193.00	526.00	113.36
All	175.68	107.33	186.00	162.41	180.84	130.00
Mandi District						
Marginal	40.00	52.38	52.95	123.60	47.74	84.81
Small	88.67	34.70	232.50	107.63	96.66	38.15
Medium	-	-	-	-	-	-
Large	-	-	-	-	-	-
All	54.75	39.88	56.55	122.29	56.55	61.62
Solan and Mandi Districts						
Marginal	77.00	94.86	69.55	142.65	72.58	117.21
Small	157.41	74.44	217.88	155.29	175.69	92.49
Medium	138.46	62.50	350.00	142.66	205.26	89.61
Large	310.00	64.58	850.00	193.18	526.00	113.36
All	115.21	76.56	121.27	151.06	118.69	102.89

4.7 Per Farm Subsidy Availed on Plant Protection Material

The per farm subsidy availed on different plant protection materials by general and SC/ST farmers in Solan and Mandi district has been presented in Table 4.3. At over all level per farm subsidy was Rs.52.49 in district Solan. Per farm subsidy on plant protection material was Rs.64.32 on general category of farm and Rs.40.66 on SC/ST farms. This analysis shows that subsidy availed by general category of households is higher because of higher area under commercial crop in comparison to SC/ST farmers of respective categories. Secondly the use of subsidy on plant protection is low in comparison to other inputs because of limited use of plant protection material in the crops.

In Mandi district the use of plant protection material is very limited on all size of farms of general and SC/ST category of farmers. This is mainly due to negligible area under vegetables as well as other commercial crops. At over all level subsidy on plant protection material was Rs.1.48 per farm.

In case of joint sample of Solan and Mandi districts farmers get only Rs.27 of subsidy on this input which was Rs.20.52 for SC/ST family and Rs.34.45 for general category of farms.

4.8 Per Hectare Subsidy Availed on Plant Protection Material

In Solan district per hectare subsidy at over all level was Rs.37.76 and had inverse relation with farm size. The similar trend was these for general and SC/ST category of farms. This is because of intensive use of plant protection material by small size of farm and probably more area under commercial crop in case of small farms.

In Mandi district plant protection material is rarely used by the farmers and has direct relation with farm size. Among all farms of Solan and Mandi district together farm size has no relation with per hectare subsidy.

Table: 4.3 Per Farm and Per Hectare Value of Subsidy on Plant Protection Material Availed By Different Size of Sample Farms in Solan and Mandi District of Himachal Pradesh.

(Rs.)

Farm Size	General Category		SC/ST Category		All	
	Per farm	Per hectare of GCA	Per Farm	Per hectare of GCA	Per Farm	Per hectare of GCA
Solan District						
Marginal	56.67	63.84	25.76	44.02	30.09	53.67
Small	88.84	57.75	46.67	34.82	68.60	47.53
Medium	50.07	22.60	87.50	35.66	61.89	27.02
Large	73.33	15.27	85.00	19.88	79.00	17.02
All	64.32	39.29	40.66	35.50	52.49	37.76
Mandi District						
Marginal	1.27	1.66	0.11	0.25	0.57	1.02
Small	5.14	2.01	14.00	6.48	5.63	2.22
Medium	-	-	-	-	-	-

Large	-	-	-	-	-	-
All	2.59	1.88	0.38	0.83	1.48	1.62
Solan and Mandi Districts						
Marginal	22.81	28.10	9.85	20.20	15.11	24.40
Small	41.42	19.58	44.15	31.46	42.24	18.56
Medium	50.07	22.60	87.50	35.66	61.89	27.02
Large	73.33	15.27	87.50	19.88	79.00	17.02
All	33.45	22.23	20.52	25.53	26.98	23.39

4.9 Per Farm Total amount of Subsidy

Per farm total subsidy on various inputs availed by sample farmers has been presented in Table 4.4. It may be seen from the table that at overall level per farm value of total subsidies availed by a farmers was Rs.200.41 in both the districts. Farmers belonging to general category availed maximum subsidies (Rs.217.46) as compared to SC.ST farmers (Rs.182.66). The amount of total subsidies availed by various size class of farms shows that the maximum benefit has been availed by the farmers belonging to large size class in both the categories. General category of farmers have availed Rs.625.23 whereas; it is Rs.1151.52 on SC/ST category of farms at per farm level. The farm size has positive relation with subsidy in both categories because of the reasons that subsidy has to be distributed on land basis.

At overall level per farm subsidy in Solan district on all inputs was Rs.304.87 per farm. The subsidy availed by general category of farmers was higher, Rs.324.59 per farm in comparison to Rs.285.15 incase of SC/ST farmers. In SC/ST category of farms the holding size has shown positive relation with subsidy. In general category of farms subsidy has shown no trend with farm size but only large farms are getting maximum benefits of the subsidy.

In Mandi district per farm total subsidy at overall level was Rs.95.95. The subsidies availed by SC/ST farmer was higher than general category of farmers. The lower level of subsidies in Mandi district is mainly due to subsistence farming practices in the areas and low growth of commercial crops.

The discussion on the distribution of total subsidies makes it clear that the benefit of subsidies has mainly been availed by the farmers of Solan district due to enterance of commercial crops where fertilizer is the major need of the farms. The category-wise distribution of subsidies reveals

that the maximum benefits has been availed by large farmers as compared to medium, small and marginal farmers. The farmers belonging to schedule cast/schedule tribe and specially those are in marginal category of farms are the least beneficiaries of subsidies. These finding point out towards the failure of govt. policy to assist the marginal as well as SC/ST farmers.

4.10 Per hectare Total Amount of subsidy

The per hectare subsidy availed by general and SC/ST categories of farms in Solan and Mandi district has been presented in Table 4.4. Table shows that in Solan district at overall level per hectare subsidy was Rs.219.33. At overall level per hectare subsidy was higher for SC/ST category Rs.248.99 per ha. in comparison to general category Rs.198.55 per ha.. Per hectare subsidy is highest on marginal farms of general and SC/ST category of farms. In general category marginal farmers are availing subsidies at the rate of Rs.275.73 per ha. whereas it is Rs.263.57 per ha. among marginal category of SC/ST. This trend is different in case of SC/ST farmers of Mandi district. In Mandi district per hectare subsidy availed by SC/ST farmers is more than double as compared to general category of farmers.

Per hectare subsidy for the sample of Solan and Mandi district together reveals that marginal farmers are much efficient and availing subsidy for worth of Rs.191.00 per hectare followed by large (Rs.180.11) medium (Rs.167.54) and small (Rs.157.88). Analysis shows that per hectare subsidy has no relation with farm size and it differs from farm to farm with in the category.

Table: 4.4 Per Farm and Per Hectare Value of Subsidy on All Inputs Availed By Different Size of Sample Farms in Solan and Mandi District of Himachal Pradesh.

(Rs.)

Farm Size	General Category		SC/ST Category		All	
	Per farm	Per hectare of GCA	Per Farm	Per hectare of GCA	Per Farm	Per hectare of GCA
Solan District						
Marginal	244.74	275.73	154.27	263.57	191.13	269.28
Small	410.64	266.92	327.53	244.42	370.75	256.89
Medium	299.68	135.27	565.96	230.69	383.77	167.54
Large	625.23	130.25	1151.52	261.70	835.74	180.11
All	324.99	198.55	285.15	248.99	304.87	219.33
Mandi District						
Marginal	68.48	89.68	73.82	172.59	72.78	129.29
Small	190.34	74.49	391.00	181.02	201.49	79.53
Medium	-	-	-	-	-	-
Large	-	-	-	-	-	-
All	109.92	80.07	80.17	173.38	95.95	104.56
Solan and Mandi Districts						
Marginal	138.71	170.85	104.38	214.06	118.32	191.00
Small	285.81	135.15	332.41	236.91	299.90	157.88
Medium	299.68	135.27	565.96	230.69	283.77	167.54
Large	625.23	130.18	1151.52	261.70	835.74	180.11
All	217.46	144.51	182.66	227.53	200.41	173.69

4.11: Per Hectare Cost and Returns With and With out Subsidies in Solan District

The per hectare gross returns, cost C and net returns with and without subsidies in case of general and SC/ST farmers in Solan districts has been analysed and presented in Table 4.5. Table reveals that in general category of farmers cost of production had increased from Rs.9636 to Rs.9830 per hectare without subsidies and returns decreased from Rs.6248 to Rs.6057 per hectare. This shows that at overall level cost of production increased by 1.88 per cent. This increase varied between1.19 per cent on large farms to 3.31 per cent on small farms. On the other hand net returns decreased by 3.05 per cent and varied between 2.05 per cent on medium farms and 5.6 on small farms. But this change was at higher level among SC/ST farms. In this concern table indicates that without subsidies production cost increased by 2.55 per cent and ranged between 2.15 per cent on medium farm to 2.85 per cent on large farms. By withdrawing subsidies the net returns decreased

by 4.06 per cent which ranged between 3.07 per cent on marginal farm to 7.70 per cent on large farms. In case of sample as a whole (SC/ST and general together) the production cost increased by 2.24 per cent and net returns decreased by 3.51 per cent.

Table 4.5: Per Hectare Costs and Returns With and Without Subsidies in Selected Farmers in Solan District of Himachal Pradesh.

(In rupees)

Farm size	With subsidies			Without subsidies			% change in	
	Gross returns	Cost C	Net returns	Gross returns	Cost C	Net returns	Cost	Net returns
General category								
Marginal	18178	10416	7762	18178	10692	7486	2.64	-3.55
Small	13234	8063	5171	13234	8330	4904	3.31	-5.16
Medium	15845	9573	6272	15845	9702	6143	1.34	-2.05
Large	16689	10952	5737	16689	11083	5606	1.19	-2.28
All	15887	9639	6248	15887	9830	6057	1.88	-3.05
SC/ST category								
Marginal	18337	9773	8564	18337	10036	8301	2.69	-3.07
Small	14898	9239	5659	14898	9484	5414	2.65	-4.32
Medium	16211	10747	5464	16211	10978	5233	2.15	-4.22
Large	12519	9132	3387	12519	9393	3126	2.85	-7.70
All	15926	9775	6151	15926	10025	5901	2.55	-4.06
SC/ST and General Category								
Marginal	18255	10104	8151	18255	10374	7881	2.67	-3.31
Small	13975	8587	5388	13975	8844	5131	2.99	-4.76
Medium	15969	9970	5999	15969	10133	5836	1.63	-2.71
Large	15107	10261	4846	15107	10442	4665	1.76	-3.73
All	15903	9695	6208	15903	9913	5990	2.24	3.51

4.12: Per Farm Cost and Returns With and Without Subsidies in Solan District

The per farm gross returns, cost C and net returns (with and without subsidies) of general and SC/ST category of farmers in Solan districts have been analysed and presented in Table 4.6. Table shows that cost of production of general farmers increased by 1.98 per cent, which varied between1.19 per cent on large farms and 3.31 per cent on small farms. Whereas, net returns decreased by 3.06 per cent and varied between 2.05 per cent on medium farm to 5.16 per cent on small farms. On SC/ST category of farms the effect of withdrawing subsidy was higher than general category of farms. By withdrawing subsidies the production cost increased by 2.55 per cent on all farms and ranged between 2.15 per cent on medium farms to 2.86 per cent on large farms. In case of SC/ST category the net returns decreased by 4.05 per cent and ranged between 3.09 per

cent on marginal farms to 7.72 per cent on large farms. In case of general and SC/ST categories a mixed picture has emerged.

Table 4.6: Per Farm Costs and Returns With and Without Subsidies in Selected Farmers in Solan District of Himachal Pradesh.

Farm size	With subsidies			Without subsidies			% change in	
	Gross returns	Cost C	Net returns	Gross returns	Cost C	Net returns	Cost	Net returns
General category								
Marginal	16135	9246	6889	16135	9491	6644	2.65	-3.55
Small	20359	12404	7955	20359	12815	7544	3.31	-5.16
Medium	35103	21208	13895	35103	21493	13610	1.34	-2.05
Large	80110	52572	27538	80110	53197	26913	1.19	-2.26
All	26004	15777	10227	26004	16090	9914	1.98	-3.06
SC/ST category								
Marginal	10733	5720	5013	10733	5875	4858	2.71	-3.09
Small	19964	12381	7583	19964	12709	7255	2.65	-4.32
Medium	39772	26367	13405	39772	26933	12839	2.15	-4.22
Large	55083	40179	14904	55083	41331	13752	2.86	-7.72
All	18207	11175	7032	18207	11460	6747	2.55	-4.05
SC/ST and General Category								
Marginal	12957	7172	5785	12957	7364	5593	2.67	-3.31
Small	20169	12393	7776	20169	12764	7405	2.99	-4.77
Medium	36578	22837	13741	36578	23211	13367	1.63	-2.72
Large	70099	47615	22484	70099	48451	21648	1.75	-3.71
All	22105	13476	8629	22105	13779	8326	2.24	-3.51

4.13: Per Hectare Cost and Returns With and Without Subsidies in Mandi District

Per hectare gross returns, cost C and net returns (with and with out subsidies) of general and SC/ST farmers in Mandi districts have been analysed and presented in Table 4.7. The table reveals that by withdrawing subsidies the production cost increased and net returns decreased. For general category of farm the production cost increased by 1.13 per cent for all type of farms which varied between 1.31 per cent on marginal farms to 1.05 per cent on small farms. The net returns these decreased by 1.59 per cent. Like wise in SC/ST category the production cost increased by 2.34 per cent. The net returns decreased by 3.65 per cent and ranged between 3.54 per cent on marginal and 5.20 on small farms. Analysis shows that the effect of withdrawing subsidies was higher on SC/ST farms than general category of farms.

Table 4.7: Per Hectare Cost and Returns With and Without Subsidies of Selected Farmers in Mandi District of Himachal Pradesh.

(In rupees)

Farm size	With subsidies			Without subsidies			% change in	
	Gross returns	Cost C	Net returns	Gross returns	Cost C	Net returns	Cost	Net returns
General category								
Marginal	12544	6871	5673	12544	6961	5583	1.31	-1.58
Small	11576	7002	4574	11576	7076	4500	1.05	-1.61
Medium	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-
All	11928	6954	4974	11928	7033	4895	1.13	-1.59
SC/ST category								
Marginal	12168	7308	4860	12168	7480	4688	2.35	-3.54
Small	11384	7909	3475	11384	8090	3294	2.28	-5.20
Medium	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-
All	12095	7364	4731	12095	7537	4558	2.34	-3.65
SC/ST and General Category								
Marginal	12374	7069	5305	12374	7197	5177	1.81	-2.41
Small	11562	7044	4518	11562	7124	4438	1.13	-1.77
Medium	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-
All	11970	7057	4913	11970	7161	4809	1.47	-2.11

CHAPTER – V

EFFECTS OF INPUT SUBSIDIES ON AGRICULTURE

Subsidy plays a crucial role in the economic development of any developing country where it has a great bearing on production, employment and investment. Barker and Hayami (year) argued that to attain the goal of food self-sufficiency, government adopts short-term policies, such as support prices of products and input subsidy to stimulate the producers to increase their food production along existing production function. In fact, subsidy is necessary as a production accelerating catalyst for those new inventions, which are socially desirable but whose adoption needs huge capital and producers believe it to be risky investment.

Subsidies render the price of new inputs or the cost of new development activity to farmers economical and attractive and thereby overcoming resistance or hesitation for the new inputs/programme on account of the risk and uncertainty associated with these programmes in minds of the farmers. Subsidies generally bring the prices of new inputs with in easy reach of farmers of small means and thereby help in improving their low investment capacity. In the present study general and SC/ST categories of farm households divided into two groups i.e. low subsidy and high subsidy group. Marginal and small farmers in general are getting subsidies at par with SC/ST category so, these farmers are placed in higher subsidy group whereas medium and large farmers of general category are getting lower range of subsidies therefore, these groups fall under lower subsidies. In this chapter an attempt has been made to study the impact of subsidy on cropping pattern, fertilizer use, input utilization and costs and returns of important crops.

5.1 Cropping Pattern

In this section, cropping pattern for low subsidies and high subsidy groups of general and SC/ST category of farmers of Solan and Mandi district have been analysed and presented in Table 5.1.

A perusal of table 5.1 indicates that in Solan and Mandi districts maize and wheat are the most important field crops and have covered about 85 to 90 per cent of gross cropped area. Oil seed and

pulses are totally absent. Vegetables covers about 6.5 per cent of the area. It is important to note that subsidies are not affecting cropping pattern but it is other agro-climatological factors that affect the cropping patterns as indicated in both the regions of study area. In the study district more emphasis is given to subsistence crops and commercial crops do not cover even 10 per cent of cropped area. Further table reveals that cropping pattern is almost the same for high and low subsidy groups of both general and SC/ST category of farmers. Only condiments and spices are grown in Solan district due to suitable climatic conditions.

Table 5.1: Cropping Pattern of Low and High Subsidies Range Farms in Solan and Mandi District of Himachal Pradesh

(Percentage to G.C.A.)

Crops	District Solan		District Mandi		Solan and Mandi district	
	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group
General Category						
Maize	41.76	42.96	-	44.70	41.76	44.07
Wheat	47.41	46.38	-	41.96	47.41	43.55
Other cereals	2.59	3.10	-	5.48	2.59	4.62
Oil seeds	-	-	-	-	-	-
Pulses	-	-	-	-	-	-
Vegetables	6.30	5.28	-	7.86	6.30	6.93
Condiments & spices	1.94	2.28	-	-	1.94	0.83
Total	100.00	100.0	-	100.00	100.00	100.00
Total area in hectare	43.20	38.64	-	68.64	43.20	107.28
SC/ST Category						
Maize	-	44.02	-	44.98	-	44.29
Wheat	-	47.41	-	47.41	-	47.41
Other cereals	-	2.52	-	6.23	-	3.59
Oil seeds	-	-	-	-	-	-
Pulses	-	-	-	-	-	-
Vegetables	-	5.84	-	1.38	-	4.56
Condiments & spices	-	0.21	-	-	-	0.15
Total	-	100.00	-	100.00	-	100.00
Total area in hectare	-	57.16	-	23.12	-	80.28
General and SC/ST Category						
Maize	41.76	43.59	-	44.77	41.76	44.17
Wheat	47.41	46.99	-	43.33	47.41	45.20
Other cereals	2.59	2.76	-	5.67	2.59	4.18
Oil seeds	-	-	-	-	-	-
Pulses	-	-	-	-	-	-
Vegetables	6.30	5.62	-	6.23	6.30	5.92
Condiments & spices	1.94	1.04	-	-	1.94	0.53
Total	100.00	100.00	-	100.00	100.00	100.00
Total area in hectare	43.20	95.80	-	91.76	43.20	187.56

5.2 Effect of Subsidies on Fertilizer Consumption

Among various agricultural subsidies, fertilizer subsidy is the next largest to food subsidy. Fertilizer subsidy is a developmental subsidy, which promotes the use of fertilizer and thus augments agricultural production. Its importance becomes all the more greater because the domestic cost of fertilizer production is higher. According to Subbarao (year) on incentive policies and agricultural development emphasizes this point by comparing the prices of fertilizer and food grains in India and other countries. In order to make the comparison relevant, the ratios of food grains prices to fertilizer prices have been worked out for wheat and paddy at three periods, i.e. 1970-71, 1975-76 and 1979-80. The results of the study show that the domestic ratio is less than one third of the foreign ratio and it was even substantially lower for paddy. In the year 1979-80, the domestic ratio was about one fourth of the foreign ratio for these two food grain crops. Thus, from the development of agricultural production point of view, it might be argued that in terms of comparison of domestic and foreign price ratio, there is a strong case for subsidizing fertilizers.

The partial general equilibrium study by Quizon and Binswanger(1984) showed that 20 per cent subsidy in farm level prices of fertilizers increased agricultural production by 1.25 per cent and the real national per capita income by 1.3 per cent. An empirical study at I.A.R.I. by A.S. Sirohi et. al., (1984) using multiple linear regression analysis of time-series and cross-section data of various states of India indicated that an increase of fertilizer subsidy by Rs.1 crore at the existing level of subsidy (1981-82) increased the fertilizer consumption in term of N,P,K, by 0.54 thousand tonnes.

The study conducted by Rai and Shri Niwas (1984) indicated that an investment of Rs.76 crores in fertilizer subsidy gave a benefit of Rs.778 crores, indicating a benefit-cost ratio of 10.19:1. The results of the study conducted by Barker and Hayami in the Philippines(1976) showed that an investment of $ 51 million as fertilizer subsidy in rice production gave a benefit of $67 million. The results indicated that since fertilizers in developing countries were used below the optimum levels, a subsidy on inputs like fertilizer gave much higher benefits as compared to the benefits due to subsidy on other programmes.

Thus it may be concluded from above discussions that fertilizer subsidy certainly benefits individual farmers as well as government specially in developing countries where the fertilizer use in crops is sub optimal. Crop wise fertilizer consumption in value term among low and high subsidy farms for both general and SC/ST categories of Solan and Mandi district of Himachal Pradesh is presented in Table 5.2. Table shows that in Solan district the farmers are spending Rs.535/- per hectare in all crops together in low subsidy farms and Rs.572/- on high subsidy of general category of farms whereas among SC/ST farms this figure is Rs.546/- per farm. The analysis shows that the level of fertilizer consumption on general and SC/ST category of farm was almost equal because fertilizer use is limited due to rainfed conditions in the state. It was observed from the analysis that fertilizer use is sub-optimal in all crops and farmers apply small quantity of fertilizer. Higher fertilizer dose was used in maize crop when compared to other crops. This is because of the reason that farmers are putting higher area under this crop and mainly because maize has good productivity in the state.

The per hectare fertilizer dose in value term in Mandi district revealed that SC/ST category of farmers were using more fertilizer in comparison to general category of farms in all crops. The per hectare use of fertilizer in value term at overall level of Solan and Mandi district together revealed that farmers belonging to low rate of subsidy uses higher value of fertilizer than that of high rate of subsidy. This is also true for important crops i.e. wheat and maize.

Table 5.2: Crop-wise per Hectare Consumption of Fertilizer in Value Term in Low & High Subsidies Range in Solan and Mandi districts of Himachal Pradesh.

(Value of fertilizer in Rs.)

Crops	District Solan		District Mandi		Solan and Mandi district	
	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group
General Category						
Maize	568	570	-	480	568	512
Wheat	502	568	-	301	502	404
Vegetable	531	490	-	220	531	294
All Crops	535	572	-	391	535	456
SC/ST Category						
Maize	-	578	-	625	-	591
Wheat	-	508	-	420	-	483
Vegetable	-	627	-	197	-	590
All Crops	-	546	-	512	-	536
General and SC/ST Category						
Maize	568	575	-	517	568	546
Wheat	502	532	-	334	502	439
Vegetable	531	575	-	219	531	392
All Crops	535	557	-	421	535	491

5.3 Proportion of Fertilizer used in Important Crops

The proportion of fertilizer used in maize, wheat and vegetables among general and SC/ST farmers along with low and high rate subsidizes farm of Solan and Mandi district is presented in Table 5.3. Table reveals that at overall level in Solan and Mandi district more than 90 per cent of the total fertilizer used was shared by maize and wheat crops. In Solan both the categories i.e. general and SC/ST were consuming fertilizer in equal ratio especially in cultivation of maize and wheat. There was no difference in the level of fertilizer consumption at low and high rate of subsidy farms. In Mandi district where maize was the main crop used more than half of the total consumption of fertilizer in both general and SC/ST farms.

Table 5.3: Proportion of Fertilizer for Growing of Maize, Wheat and Vegetables in Low and High Subsidy Range in Solan and Mandi Districts of Himachal Pradesh.

(Percentage to total fertilizer consumption)

Crops	District Solan		District Mandi		Solan and Mandi district	
	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group
General Category						
Maize	44.34	42.76	-	54.91	44.34	49.42
Wheat	44.42	46.06	-	32.32	44.42	38.53
Vegetable	6.25	4.52	-	4.43	6.25	4.47
All Crops	100.00	100.00	-	100.00	100.00	100.00
All crops (Rs.)	23126	22121	-	26838	23126	48959
SC/ST Category						
Maize	-	46.56	-	54.89	-	48.85
Wheat	-	44.12	-	38.89	-	42.68
Vegetable	-	6.71	-	0.53	-	5.01
All Crops	-	100.00	-	100.00	-	100.00
All crops (Rs.)		31222		11832		43054
General and SC/ST Category						
Maize	44.34	44.98	-	54.90	44.34	49.15
Wheat	44.42	44.93	-	34.33	44.42	40.47
Vegetable	6.25	5.80	-	3.24	6.25	4.72
All Crops	100.00	100.00	-	100.00	100.00	100.00
All crops (Rs.)	23126	53343	-	38670	23126	92013

5.4 Crop-wise Input Used in General Category of Farms

The crop wise important inputs used by general category of farms in Solan and Mandi district has been presented in Table 5.4. The details of the inputs used are as follows.

Maize The total variable cost of production of maize was Rs.4067 per ha. out of which about 40 per cent was spent on human labour followed by bullock labour (27.54 percent), fertilizers (13.97 per cent), manure (12.54 per cent) and seeds (6.07 per cent) in low subsidy group of Solan district. The similar position has been observed in case of high subsidy group. But in Mandi district position is quite different. In comparison of district Solan the total expenditure was higher of which about 61 per cent was spent on human labour followed by bullock labour (16.93), fertilizers (9.99 per cent), manures (7.64 per cent) and seeds (4.45 per cent). Higher proportion of human labour in Mandi district may be due to clay hard soil which required more labour as compared to Solan district where texture of soil is sandy.

Wheat Per hectare total variable costs for the production of wheat has been worked out to be Rs.6161 per ha. in Solan district of low subsidy group. Whereas, for higher subsidy group it decreased to be Rs.5663 and Rs.4858 per hectare in Solan and Mandi district respectively. In lower subsidy group major item of expenditure was on human labour (40.19 per cent) followed by bullock labour (21.52 per cent), seeds (18.05 per cent), manure (12.09 per cent) and fertilizers (8.15 per cent). In Solan and Mandi district together the total variable cost for high subsidy group has been worked out to be Rs.5167 per hectare in which the major input is human labour (40.68 percent) followed by seeds 20.81 per cent, bullock labour 20.59 per cent, manures (10.10%) and fertilizers (7.82 per cent) This is the staple food of sample households and grown by all types of farm families(Table 5.4).

Other Cereals Barley is grown in Solan district while paddy is grown in Mandi district. Manure the major input and covered half of the total cost while in Mandi major input was human labour followed by bullock labour, fertilizers, manure and seeds (Table 5.4).

Tomato Tomato is the major cash crop of Solan district and grown by all the cultivators in low and high subsidy groups. The total input costs almost equal in low and high subsidy group. The

major input was human labour (57.88%), followed by manure (17.34%), pesticide (9.47%), seeds (7.90%), bullock labour (5.10 per cent) and fertilizers (2.31 per cent) in low subsidy group of farmers. The similar situation was observed in high subsidy group (Table 5.4).

Capsicum Capsicum is the cash crop and grown only in Solan district (Table 5.4). This crop was grown at both category of groups i.e. low and high subsidy group of farmers. The major input for growing capsicum was human labour (59.11%) followed by manure (21.65%), bullock labour (7.69%), seeds (4.16%), pesticide (4.14%) and fertilizer 3.25%. Almost similar situation was these in case of high subsidy group.

Other Vegetables In Solan district other vegetables are grown by low subsidy group of farmers and the major expenditure on this crop was human labour (34.85 per cent), followed by manure (34.48 per cent), seeds (18.15 per cent), bullock labour (8.71 per cent) and fertilizers (3.81 per cent), while in Mandi district this crop was grown only by higher subsidy group of farms. The major expenditure for growing this crop is on human (73.28 per cent), followed by bullock labour (10.05 per cent), seeds (7.86 per cent), manure (6.31 per cent) and fertilizer (2.50 per cent). The similar position has been observed in Solan and Mandi district together (Table 5.4).

Ginger On sample farms ginger is grown only in Solan district by both low and high subsidy groups (Table 5.4). Ginger is a cash involving a total variable cost of Rs.40,000/ ha. In low subsidy group the major expenditure for growing ginger was on seeds (67.35 per cent) followed by manure (17.65 per cent), human labour (10.92 per cent), bullock labour (2.82 per cent) and fertilizers 1.2 per cent. The situation for higher subsidy group was little different with expenditure on seeds being (75.72 per cent), followed by manure (10.59 per cent), human labour (9.34 per cent), bullock labour (2.84 per cent), and fertilizers (1.51 per cent). Ginger required special care for retaining seed hence, seed value is higher.

Table 5.4: Crop-wise Major Inputs Used in production of Crops by General Category of Farmers in Solan and Mandi District of Himachal Pradesh.

(Percentage to total cost)

Crops	District Solan		District Mandi		Solan and Mandi district	
	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group
MAIZE						
Seeds	6.07	6.55	-	4.45	6.07	5.10
Fertilizer	13.97	13.57	-	9.99	13.97	11.10
Pesticide	-	-	-	-	-	-
Human labour	39.88	41.51	-	60.99	39.88	54.92
Bullock labour	27.54	27.27	-	16.93	27.54	20.16
Manure	12.54	11.11	-	7.64	12.54	8.72
Total cost (Rs.)	4067	4016	-	4807	4067	4530
WHEAT						
Seeds	18.05	20.87	-	20.75	18.05	20.81
Fertilizer	8.15	10.05	-	6.20	8.15	7.82
Pesticide	-	-	-	-	-	-
Human labour	40.19	37.82	-	42.75	40.19	40.68
Bullock labour	21.52	20.38	-	20.75	21.52	20.59
Manure	12.09	10.88	-	9.55	12.09	10.10
Total cost (Rs.)	6161	5663	-	4858	6161	5167
OTHER CEREALS						
Seeds	4.73	4.89	-	1.40	4.73	2.62
Fertilizer	8.50	9.35	-	10.95	8.50	10.37
Pesticide	-	-	-	-	-	-
Human labour	24.67	20.41	-	58.66	24.67	45.03
Bullock labour	13.01	12.33	-	21.67	13.01	18.35
Manure	49.09	53.02	-	7.34	49.09	23.62
Total cost (Rs.)	8731	9431	-	5435	8731	6402
TOMATO						
Seeds	7.90	7.70	-	-	7.90	7.70
Fertilizer	2.31	2.18	-	-	2.31	2.18
Pesticide	9.47	15.10	-	-	9.47	15.10
Human labour	57.88	58.86	-	-	57.88	58.86
Bullock labour	5.10	4.80	-	-	5.10	4.80
Manure	17.34	11.36	-	-	17.34	11.36
Total cost (Rs.)	23312	23112	-	-	23312	23112

Contd….

Table 5.4: Contd….

(Percentage to total cost)

Crops	District Solan		District Mandi		Solan and Mandi district	
	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group
CAPSICUM						
Seeds	4.16	5.04	-	-	4.16	5.04
Fertilizer	3.25	2.07	-	-	3.25	2.07
Pesticide	4.14	4.36	-	-	4.14	4.36
Human labour	59.11	63.23	-	-	59.11	63.23
Bullock labour	7.69	7.39	-	-	7.69	7.39
Manure	21.65	17.91	-	-	21.65	17.91
Total cost (Rs.)	15805	14892	-	-	15805	14892
OTHER VEGETABLES						
Seeds	18.15	-	-	7.86	18.15	7.86
Fertilizer	3.81	-	-	2.50	3.81	2.50
Pesticide	-	-	-	-	-	-
Human labour	34.85	-	-	73.28	34.85	73.28
Bullock labour	8.71	-	-	10.05	8.71	10.05
Manure	34.48	-	-	6.31	34.48	6.31
Total cost (Rs.)	13775	-	-	8814	13775	8814
GINGER						
Seeds	67.35	75.72	-	-	67.35	75.72
Fertilizer	1.26	1.51	-	-	1.26	1.51
Pesticide	-	-	-	-	-	-
Human labour	10.92	9.34	-	-	10.92	9.34
Bullock labour	2.82	2.84	-	-	2.82	2.84
Manure	17.65	10.59	-	-	17.65	10.59
Total cost (Rs.)	41822	40762	-	-	41822	40762

5.5 Crop-wise Input Used by SC/ST Category of Farms

The crop-wise important inputs used among SC/ST category of farms is presented in Table 5.5. The crop wise detail of inputs is as follows.

Maize Maize is a important crop in both the districts and grown by all the sampled cultivators. The total variable cost of cultivation of maize is Rs.5953, Rs.5229 and Rs.5742 per ha. in Solan, Mandi and both respectively. In Solan district the major expenditure for growing maize crop was on human labour (47.54 per cent), manure (19.74 per cent), bullock labour (18.91 per cent), fertilizers (9.71 per cent) and seeds (4.10 per cent) of the total cost. The said distribution in Mandi district is 44.83 per cent in human labour, 21.02 per cent in bullock labour, 17.65 per cent in manure, 11.26 per cent, in fertilizers and 5.24 per cent in seeds.

Wheat Wheat is the important crop in both the districts and grown by all the sample households. The total variable cost of cultivation of wheat is Rs.6211, Rs.5282 and Rs.5946 per ha. in Solan, Mandi and both districts together respectively. In Solan district the major expenditure on inputs for growing wheat was human labour (34.60 per cent) followed by seeds (22.22 per cent), bullock labour (19.25 per cent), manures (15.75 per cent) and fertilizers (8.18 per cent). This percent for Mandi district was 36.02 per cent for human labour followed by seeds (20.41 per cent), bullock labour (18.52 per cent), manure (17.10 per cent) and for fertilizers 7.95 per cent of the total cost.

Other Cereals Barley crop is grown in Solan district while paddy in Mandi district. The variable cost of cultivation of barley is Rs.6962 per hectare in Solan district while for paddy it is Rs.5721 per hectare in Mandi district. In Solan district the major expenditure for growing barley crop was manure (40.55 per cent) followed by human labour (28.90 per cent), bullock labour (16.89 per cent), fertilizers (7.51 per cent) and seeds (6.15 per cent) of the total cost. Similarly, variable costs in Mandi district was human labour (57.39 per cent) followed by bullock labour (20.24 per cent), manure (10.92 per cent), fertilizers (8.60 per cent) and seeds (2.85 per cent) of the total variable cost.

Tomato Tomato is a cash crop and grown only by sample households of Solan district. The total variable cost of cultivation has been worked out to be Rs.22865 per hectare which was higher than other crops. The major inputs in production of this crop was human labour (61.79 per cent) followed by manure (13.54 per cent), pesticides (8.88 per cent), seeds (8.49 per cent) bullock labour (4.96 per cent) and fertilizers (2.34 per cent) of the total cost of production. This is labour intensive crop and solving problems of unemployment up to some extent.

Capsicum Capsicum is also grown in Solan district and ranks next to the tomato in commercial crops grown in the area. The total variable cost of cultivation of capsicum has been worked out to be Rs.14363 per hectare. In this crop the major component of expenditure were human labour (63.70 per cent) followed by manure (19.52 per cent), bullock labour (8.65 per cent), seeds (4.60 per cent) and fertilizers 3.53 per cent of the total cost (Table 5.5).

Other Vegetables The other vegetables are grown on small scale in both the study districts. The total variable cost for growing other vegetables has been worked out to be Rs.13050 and Rs.9530 per hectare in Solan and Mandi districts respectively. The major item of expenditure in Solan district were human labour (48.35 per cent) followed by manure (22.99 per cent), seeds (17.24 per cent), bullock labour (7.39 per cent) and fertilizers 4.03 per cent of the total variable cost. In Mandi district again human labour was the major item of expenditure (65.78 per cent) followed by manures (14.75 per cent), bullock labours (10.20 per cent), seeds (7.21 per cent) and fertilizers (2.06 per cent).

Ginger Ginger is a major cash crop grown in Solan districts only. This crop has been placed under condiments & species in the study. The total variable cost for growing ginger has been worked out to be (Rs.50125 per hectare) which is highest among other crops. The major expenditure of inputs for growing crop was seeds which accounted for (76.31 per cent) of the total cost followed by manure (13.30 per cent), human labour (7.03 per cent), bullock labour (2.18 per cent) and fertilizers (1.18 per cent) of the total cost.

Table 5.5: Crop-wise Major Inputs Used in Production of Crops by SC/ST Category of Farmers in Solan and Mandi District of Himachal Pradesh.

(Percentage to total cost)

Crops	District Solan		District Mandi		Solan and Mandi district	
	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group
MAIZE						
Seeds	-	4.10	-	5.24	-	4.41
Fertilizer	-	9.71	-	11.26	-	10.12
Pesticide	-	-	-	-	-	-
Human labour	-	47.54	-	44.83	-	46.81
Bullock labour	-	18.91	-	21.02	-	19.47
Manure	-	19.74	-	17.65	-	19.19
Total cost (Rs.)	-	5953	-	5229	-	5742
WHEAT						
Seeds	-	22.22	-	20.41	-	21.76
Fertilizer	-	8.18	-	7.95	-	8.12
Pesticide	-	-	-	-	-	-
Human labour	-	34.60	-	36.02	-	34.85
Bullock labour	-	19.25	-	18.52	-	19.06
Manure	-	15.75	-	17.10	-	16.11
Total cost (Rs.)	-	6211	-	5282	-	5946
OTHER CEREALS						
Seeds	-	6.15	-	2.85	-	4.65
Fertilizer	-	7.51	-	8.60	-	8.01
Pesticide	-	-	-	-	-	-
Human labour	-	28.90	-	57.39	-	41.75
Bullock labour	-	16.89	-	20.24	-	18.40
Manure	-	40.55	-	10.92	-	27.19
Total cost (Rs.)	-	6962	-	5721	-	6342
TOMATO						
Seeds	-	8.49	-	-	-	8.49
Fertilizer	-	2.34	-	-	-	2.34
Pesticide	-	8.88	-	-	-	8.88
Human labour	-	61.79	-	-	-	61.79
Bullock labour	-	4.96	-	-	-	4.96
Manure	-	13.54	-	-	-	13.54
Total cost (Rs.)	-	22865	-	-	-	22.865

Contd….

Table 5.5: Contd….

(Percentage to total cost)

Crops	District Solan		District Mandi		Solan and Mandi district	
	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group
CAPSICUM						
Seeds	-	4.60	-	-	-	4.60
Fertilizer	-	3.53	-	-	-	3.53
Pesticide	-	-	-	-	-	-
Human labour	-	63.70	-	-	-	63.70
Bullock labour	-	8.65	-	-	-	8.65
Manure	-	19.52	-	-	-	19.52
Total cost (Rs.)	-	14363	-	-	-	14363
OTHER VEGETABLES						
Seeds	-	17.24	-	7.21	-	11.83
Fertilizer	-	4.03	-	2.06	-	2.97
Pesticide	-	-	-	-	-	-
Human labour	-	48.35	-	65.78	-	57.75
Bullock labour	-	7.39	-	10.20	-	8.90
Manure	-	22.99	-	14.75	-	18.55
Total cost (Rs.)	-	13050	-	9530	-	10884
GINGER						
Seeds	-	76.31	-	-	-	76.31
Fertilizer	-	1.18	-	-	-	1.18
Pesticide	-	-	-	-	-	-
Human labour	-	7.03	-	-	-	7.03
Bullock labour	-	2.18	-	-	-	2.18
Manure	-	13.30	-	-	-	13.30
Total cost (Rs.)	-	50125	-	-	-	50125

5.6 Crop-wise Input Used by General and SC/ST Farmers in Solan and Mandi Districts

The crop wise inputs applied by all sample (general and SC/ST category) farms in Solan and Mandi district of low and high subsidy group of farmers is presented in Table5.6.

Maize Maize is a most important kharif crop in Himachal Pradesh and grown by all the cultivators of general and SC/ST category of farms. The total variable cost in Solan district was Rs.4068 per hectare for low subsidy group, major head of expenditure being human labour and bullock labour. While for high subsidy group the expenditure on variable inputs has been worked out to be Rs.5183 and Rs.4914 per hectare in Solan and Mandi district respectively. The major input accounts about half of the total cost Table (5.6).

Wheat Wheat is a staple food of Himachal Pradesh and is important rabi crop grown by all type of sample households. In Solan district the variable cost was Rs.6161 per hectare for low subsidy group of farmers in which the major inputs were human labour, bullock labour and seeds. In high subsidy group the total inputs cost has been worked out to be Rs.5994 and Rs.4975 in Solan and Mandi district respectively in which human labour, bullock labour and seeds cost have covered about 80 per cent of the total costs (Table 5.6).

Other Cereals Other cereals are grown in both the study districts. The cost for growing this crop is slightly high than maize & wheat. Per hectare total variable costs have been worked out to be Rs.8732 in low subsidy group of Solan district while for high subsidy group the said cost was Rs.8084 and Rs.5516 in Solan and Mandi district respectively. In Solan district major item of costs was manure but in Mandi district human labour remained the major item of expenditure (Table 5.6).

Tomato Tomato is the major cash crop of Solan district and grown by both the low and high subsidy group of farmers. The total cost of inputs has been worked out to Rs.23312 and Rs.22564 per hectare among low and high subsidy group respectively. The major items of costs are human labour, manure and pesticides(Table 5.6).

Capsicum Capsicum is also a cash crop and grown among all sample farms in Solan districts The total costs on all inputs has been worked out to be Rs.15805 per hectare among low subsidy group of farmers while it is Rs.14524 for high subsidy group. The major item of expenditure was human labour which accounted for about 60 per cent of the total costs.

Other Vegetables Other vegetables are grown in both the study districts. The expenditure on total inputs has been worked out in to be Rs.13775 per hectare for low subsidy group and Rs.13050

for higher subsidy group in Solan district. The major portion of expenditure human labour followed by manure and seeds. In Mandi district the total expenditure on all inputs was Rs.8854 in which major portion was human labour (73 per cent), bullock labour, seeds and manure being other important inputs (Table 5.6).

Ginger Ginger is also a cash crop and grown by all type of farmers in Solan districts. The total variable cost was Rs.41822 and Rs.41885 per hectare for low and high subsidy groups respectively. In cost of cultivation of ginger the major portion (75 per cent) was that of seeds only.

Table 5.6: Crop-wise Major Inputs Used in Production of Crops by General and SC/ST Category of Farmers in Solan and Mandi District of Himachal Pradesh.

(Percentage to total cost)

Crops	District Solan		District Mandi		Solan and Mandi district	
	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group
MAIZE						
Seeds	6.07	4.86	-	4.66	6.07	4.75
Fertilizer	13.96	10.90	-	10.34	13.96	10.64
Pesticide	-	-	-	-	-	-
Human labour	39.90	45.69	-	56.63	39.90	50.97
Bullock labour	27.53	21.47	-	18.03	27.53	19.82
Manure	12.54	17.08	-	10.34	12.54	13.82
Total cost (Rs.)	4068	5183	-	4914	4068	5050
WHEAT						
Seeds	18.05	21.72	-	20.64	18.05	21.72
Fertilizer	8.15	8.88	-	6.71	8.15	7.96
Pesticide	-	-	-	-	-	-
Human labour	40.19	35.80	-	40.79	40.19	37.91
Bullock labour	21.52	19.67	-	20.10	21.52	19.85
Manure	12.09	13.93	-	11.76	12.09	13.01
Total cost (Rs.)	6161	5994	-	4975	6161	6516
OTHER CEREALS						
Seeds	4.73	5.48	-	1.79	4.73	3.37
Fertilizer	8.51	8.49	-	10.28	8.51	9.51
Pesticide	-	-	-	-	-	-
Human labour	24.67	24.39	-	58.28	24.67	43.83
Bullock labour	13.01	14.47	-	21.27	13.01	18.37
Manure	49.08	47.17	-	8.38	49.08	24.92
Total cost (Rs.)	8732	8084	-	5516	8732	6380
TOMATO						
Seeds	7.90	8.17	-	-	7.90	8.17
Fertilizer	2.31	2.27	-	-	2.31	2.27
Pesticide	9.47	11.40	-	-	9.47	11.40
Human labour	57.88	60.61	-	-	57.88	60.61
Bullock labour	5.10	4.89	-	-	5.10	4.89
Manure	17.34	12.66	-	-	17.34	12.66
Total cost (Rs.)	23312	22964	-	-	23312	22964

Contd….

Table 5.6: Contd….

(Percentage to total cost)

Crops	District Solan		District Mandi		Solan and Mandi district	
	Low subsidy	High subsidy	Low subsidy	High subsidy	Low subsidy	High subsidy
CAPSICUM						
Seeds	4.16	4.74	-	-	4.16	4.74
Fertilizer	3.25	3.09	-	-	3.25	3.09
Pesticide	4.14	1.34	-	-	4.14	1.34
Human labour	59.11	63.55	-	-	59.11	63.55
Bullock labour	7.69	8.26	-	-	7.69	8.26
Manure	21.65	19.02	-	-	21.65	19.02
Total cost (Rs.)	15805	14524	-	-	15805	14524
OTHER VEGETABLES						
Seeds	18.15	17.24	-	7.82	18.15	8.28
Fertilizer	3.81	4.02	-	2.47	3.81	2.55
Pesticide	-	-	-	-	-	-
Human labour	34.85	48.35	-	72.84	34.85	71.64
Bullock labour	8.71	7.39	-	10.06	8.71	9.93
Manure	34.48	23.00	-	6.81	34.48	7.60
Total cost (Rs.)	13775	13050	-	8854	13775	8995
GINGER						
Seeds	67.35	75.80	-	-	67.35	75.80
Fertilizer	1.25	1.47	-	-	1.25	1.47
Pesticide	-	-	-	-	-	-
Human labour	10.92	9.00	-	-	10.92	9.00
Bullock labour	2.83	2.75	-	-	2.83	2.75
Manure	17.65	10.98	-	-	17.65	10.98
Total cost (Rs.)	41822	41885	-	-	41822	41885

5.7 Share of Different Crops in Total Input Utilization

The share of different crops in total input utilization on farms of low and high subsidy groups of Solan and Mandi district along with SC/ST and general category of farm has been presented in Table 5.7.

5.7.1 General Category of Farm

In Solan districts maize in kharif and wheat in rabi season accounted for 24.34 and 41.86 per cent of total input cost respectively in low subsidy group. In case of high subsidy group the said position was 25.49 and 38.81 per cent respectively. The other important crops are tomato and ginger in Solan district. The position in Solan and Mandi district together is quite different in high subsidy group. Though wheat and maize are the important crops but cereals, tomato, other vegetables and ginger are more important because of being cash crops.

5.7.2 SC/ST Category of Farm

The SC/ST farmers have been placed under higher subsidy group where wheat and maize are the important crops and account for about 80 per cent of the total inputs cost of the farm. The other important crops are tomato grown in Solan district and other cereals in Mandi district. At overall level in Solan and Mandi district together the share of wheat in total input used on farm was 42.71 per cent followed by maize 38.54 per cent, tomato 12.34 per cent, other cereals 3.45 per cent, ginger 1.13, other vegetables 1.07 per cent and capsicum 0.76 per cent(Table 5.7).

5.7.3 General and SC/ST Category of Farm

In Solan district the low subsidy group had is wheat (41.86 per cent) which accounted for highest inputs followed by maize (24.34 per cent), tomato (14.54 per cent), ginger (11.66 per cent), capsicum (3.99 per cent), other cereals (3.24 per cent) and other vegetables (0.37 per cent). For high subsidy group the use of input in different crops was highest in wheat (40.42 per cent), followed by maize (32.42 per cent), tomato (16.44 per cent), ginger (6.27 per cent), other cereals (3.20 per cent), capsicum (0.86 per cent) and other vegetables 0.39 per cent. But in Mandi district

the position was quite different as maize was the important crop in total input utilization and its percentage share was (42.14 per cent) followed by wheat (41.30 per cent), other vegetables (10.57 per cent) and other cereals 5.99 per cent.

Table 5.7: Share of Different Crops in Total Input Utilization in Sampled Farms of Solan and Mandi District of Himachal Pradesh.

(Percentage to total cost)

Crops	District Solan		District Mandi		Solan and Mandi district	
	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group
General Category						
Maize	24.34	25.49	-	41.50	24.34	34.71
Wheat	41.86	38.81	-	39.36	41.86	39.13
Other cereals	3.24	4.33	-	5.75	3.24	5.15
Tomato	14.54	16.97	-	-	14.54	7.19
Capsicum	3.99	0.68	-	-	3.99	0.29
Other vegetables	0.37	-	-	13.39	0.37	7.71
Ginger	11.66	13.72	-	-	11.66	5.82
Total	100.00	100.00		100.00	100.00	100.00
SC/ST Category						
Maize	-	36.87	-	44.01	-	38.54
Wheat	-	41.45	-	46.85	-	42.71
Other cereals	-	2.47	-	6.67	-	3.45
Tomato	-	16.10	-	-	-	12.34
Capsicum	-	0.99	-	-	-	0.76
Other vegetables	-	0.64	-	2.47	-	1.07
Ginger	-	1.48	-	-	-	1.13
Total	-	100.00	-	100.00	-	100.00
General and SC/ST Category						
Maize	24.34	32.42	-	42.14	24.34	36.48
Wheat	41.86	40.42	-	41.30	41.86	40.78
Other cereals	3.24	3.20	-	5.99	3.24	4.36
Tomato	14.54	16.44	-	-	14.54	9.57
Capsicum	3.99	0.86	-	-	3.99	0.51
Other vegetables	0.37	0.39	-	10.57	0.37	4.64
Ginger	11.66	6.27	-	-	11.66	3.66
Total	100.00	100.00	-	100.00	100.00	100.00

5.8 Costs and Returns From Maize With And without Subsidy in Solan District

The costs and returns from maize crop in low and high subsidy group (with and without subsidy) of general and SC/ST category of farms in Solan district have been presented in Table 5.8. It may be observed that at overall level cost A, B and C were low among low subsidy group as compared to high subsidy group farms. Similarly returns were also less among low subsidy group of farms. Impact of subsidy indicates that by withdrawing subsidy costs would increase by 3.64, 2.61 and 1.67 per cent in low subsidy group and 4.18, 2.99 and 1.91. In high subsidy group of farms over cost A,B and C respectively. Similarly by withdrawing subsidy there is a decrease in returns at the rate of 1.79, 2.22 and 4.29 per cent in low subsidy group and 2.13, 2.64 and 5.39 per cent in high subsidy group over cost A,B and C respectively.

Regarding general category of farms almost similar trend may be observed but in case of SC/ST category only high subsidy group of farm has been discussed due to absence of medium and large farms who had already been placed under low subsidy group of farms. Therefore table indicates that after withdrawal of subsidy this section would face higher loss as compared to over all level as well as general category of farms.

Table 5.8: Per hectare Cost and Returns With and Without Subsidy From Maize Crop in Sampled Farmers of Solan District in Himachal Pradesh.

(Rs./hectare)

Particulars	With subsidy		Without subsidy		%change	
	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group
General Category						
Cost A	3021	2884	3131	3020	3.64	4.71
Cost B	4213	4155	4323	4291	2.61	3.27
Cost C	6584	6279	6694	6416	1.67	2.18
Gross return	9146	9911	9146	9911	-	-
Net returns over cost A	6125	7027	6015	6891	-1.78	-1.93
Net returns over cost B	4933	5756	4823	5620	-2.22	-2.36
Net returns over cost C	2562	3632	2452	3495	-4.29	-3.77
SC/ST Category						
Cost A	-	3407	-	3539	-	3.87
Cost B	-	4639	-	4771	-	2.84
Cost C	-	7470	-	7601	-	1.75
Gross return	-	9192	-	9192	-	-
Net returns over cost A	-	5785	-	5653	-	-2.28
Net returns over cost B	-	4553	-	4421	-	-2.89
Net returns over cost C	-	1722	-	1591	-	-7.60
General and SC/ST Category						
Cost A	3021	3199	3131	3333	3.64	4.18
Cost B	4213	4447	4323	4580	2.61	2.99
Cost C	6584	6996	6694	7130	1.64	1.91
Gross return	9146	9478	9146	9478	-	-
Net returns over cost A	6125	6279	6015	6145	-1.79	-2.13
Net returns over cost B	4933	5031	4823	4898	-2.22	-2.64
Net returns over cost C	2562	2482	2452	2348	-4.29	-5.39

5.9 Cost and Returns From Maize With and Without Subsidy in Mandi District

The cost and returns from maize have been presented in Table 5.9. It may be observed that only high subsidy group has been discussed due to absence of medium and large farms who had already been placed under low subsidy group of farms. It is indicated that by withdrawing subsidy the costs

would increase by 4.50, 2.55 and 1.74 per cent while returns would decrease by 1.12, 1.36 and 1.83 per cent over cost A,B and C respectively

Table 5.9: Per hectare Cost and Returns With and Without Subsidy From Maize Crop in Sampled Farmers of Mandi District in Himachal Pradesh.

(Rs./hectare)

Particulars	With subsidy		Without subsidy		%change	
	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group
General Category						
Cost A	-	2714	-	2807	-	3.42
Cost B	-	4777	-	4870	-	1.94
Cost C	-	7033	-	7126	-	1.32
Gross return	-	13845	-	13845	-	-
Net returns over cost A	-	11131	-	11038	-	-0.83
Net returns over cost B	-	9068	-	8975	-	-1.02
Net returns over cost C	-	6812	-	6719	-	-1.36
SC/ST Category						
Cost A	-	2952	-	3170	-	7.38
Cost B	-	5043	-	5261	-	4.32
Cost C	-	7388	-	7606	-	2.95
Gross return	-	14055	-	14055	-	-
Net returns over cost A	-	11103	-	10885	-	-1.96
Net returns over cost B	-	9012	-	8794	-	-2.42
Net returns over cost C	-	6667	-	6449	-	-3.26
General and SC/ST Category						
Cost A	-	2774	-	2899	-	4.50
Cost B	-	4845	-	4969	-	2.55
Cost C	-	7123	-	7247	-	1.74
Gross return	-	13898	-	13898	-	-
Net returns over cost A	-	11124	-	10999	-	-1.12
Net returns over cost B	-	9053	-	8929	-	-1.36
Net returns over cost C	-	6775	-	6651	-	-1.83

5.10 Cost and Returns From maize With and Without Subsidy in Solan and Mandi Districts of Himachal Pradesh

The costs and returns from maize crop in low and high subsidy group of farms (with and without subsidy) of general and SC/ST category of farms in Solan and Mandi districts have been presented in Table 5.10. It may be observed that cost B and C have shown increase among high subsidy group when compared to low subsidy group of farms. The returns have increased at higher rate among high subsidy group of farms (with subsidy). It is indicated that costs would increase by 3.64, 2.61 and 1.67 per cent over cost A,B and C respectively. This increase was slightly higher i.e. 4.31, 2.29 and 1.83 per cent among high subsidy group of farms. In case of returns the decrease was slightly higher i.e. 1.79, 2.22 and 4.29 per cent among low subsidy group of farms as compared to high subsidy group of farms. Similar trend may be observed among general category of farms.

Table 5.10: Per hectare Cost and Returns With and Without Subsidy From Maize Crop in Sampled Farmers of Solan and Mandi Districts in Himachal Pradesh.

(Rs./hectare)

Particulars	With subsidy		Without subsidy		%change	
	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group
General Category						
Cost A	3021	2773	3131	2882	3.64	3.93
Cost B	4213	4558	4323	4647	2.61	1.95
Cost C	6584	6768	6694	6876	1.67	1.59
Gross return	9146	12464	9146	12464	-	-
Net returns over cost A	6125	9691	6015	9582	-1.79	1.18
Net returns over cost B	4933	7906	4823	7817	-2.22	-1.13
Net returns over cost C	2562	5696	2452	5588	-4.29	-1.89
SC/ST Category						
Cost A	-	3274	-	3431	-	4.79
Cost B	-	4758	-	9414	-	3.27
Cost C	-	7446	-	7602	-	2.09
Gross return	-	10614	-	10614	-	-
Net returns over cost A	-	7340	-	7183	-	-2.13
Net returns over cost B	-	5856	-	5700	-	-2.66
Net returns over cost C	-	3168	-	3012	-	-4.92
General and SC/ST Category						
Cost A	3021	2989	3131	3118	3.64	4.31

Cost B	4213	4644	4323	4773	2.61	2.28
Cost C	6584	7059	6694	7188	1.67	1.83
Gross return	9146	11670	9146	11670	-	-
Net returns over cost A	6125	8681	6015	8552	-1.79	-1.48
Net returns over cost B	4933	7026	4823	6897	-2.22	-1.83
Net returns over cost C	2562	4611	2452	4482	-4.29	-2.79

5.11 Cost and Returns From Wheat Crop With and Without Subsidy in Solan District of Himachal Pradesh

The costs and returns from wheat crop in low and high subsidy group of farms (with and without subsidy) of general and SC/ST category of farms in Solan district are presented in Table 5.11. In this table it may be observed that costs are slightly higher at overall level among low subsidy group of farms (with subsidy) whereas, the returns are higher among high subsidy group of farms. The picture is quite inverse among high subsidy group of farms where returns were higher when compared to low subsidy group of farms (with subsidy group of farms). By withdrawing subsidy from low subsidy group of farms the impact indicates that costs would increas at the rate of 3.14, 2.45 and 1.75 per cent in comparison of 7.74, 5.92 and 4.24 per cent among high subsidy group of farms over cost A,B and C respectively. This reflects that by withdrawing subsidy the increase in costs of high subsidy group of farms is more in comparison to low subsidy group of farms.

By withdrawing subsidy impact of returns over different costs would be about two time more among high subsidy group of farms. By withdrawing subsidy the returns among low subsidy of farms would decrease at the rate of 2.64, 3.45 and 7.93 per cent in comparison of 5.61, 7.22 and 13.82 per cent over cost A, B and C respectively. Almost similar trend may be observed when subsidy is withdrawn from general category of farms. In case of SC/ST category of farms only high subsidy group of farms has been discussed in which percentage of increase in costs worked out to 7.42, 5.80 and 4.15 whereas, returns were 6.48, 8.56 and 20.60 per cent over cost A, B and C respectively.

Table 5.11: Per hectare Costs and Returns With and Without Subsidy From Wheat Crop in Sampled Farmers of Solan District in Himachal Pradesh.

(Rs./hectare)

Particulars	With subsidy		Without subsidy		%change	
	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group
General Category						
Cost A	4165	3804	4296	4118	3.14	8.25
Cost B	5332	5154	5463	5467	2.45	6.07
Cost C	7473	7148	7604	7462	1.75	4.39
Gross return	9123	10543	9123	10543	-	-
Net returns over cost A	4958	6733	4827	6425	-2.64	-4.65
Net returns over cost B	3791	5389	3660	5076	-3.45	-5.80
Net returns over cost C	1650	3395	1519	3081	-7.93	-9.24
SC/ST Category						
Cost A	-	4244	-	4559	-	7.42
Cost B	-	5425	-	5740	-	5.80
Cost C	-	7574	-	7889	-	4.15
Gross return	-	9103	-	9103	-	-
Net returns over cost A	-	4859	-	4544	-	-6.48
Net returns over cost B	-	3678	-	3363	-	-8.56
Net returns over cost C	-	1529	-	1214	-	-20.60
General and SC/ST Category						
Cost A	4165	4069	4296	4384	3.14	7.74
Cost B	5332	5317	5463	5632	2.45	5.92
Cost C	7473	7405	7604	7719	1.75	4.24
Gross return	9123	9676	9123	9676	-	-
Net returns over cost A	4958	5607	4827	5292	-2.64	-5.61
Net returns over cost B	3791	4359	3660	4044	-3.45	-7.22
Net returns over cost C	1650	2271	1519	1957	-7.93	-13.82

5.12 Cost and Returns From Wheat Crop With and Without Subsidy in Mandi District of Himachal Pradesh

The costs and returns from wheat crop in low and higher subsidy group of farms (with and without subsidy) of general and SC/ST category of farms in Mandi district are present in Table 5.12. From this table it may be observed that only high subsidy group of farms has been analysed because of absence of medium and large farms in low subsidy group of farms. Further table reveals that by withdrawing subsidy the cost would increase by 3.62, 2.44 and 1.57 per cent over cost A, B and C respectively. Almost similar trend may be observed in general and SC/ST category of farms of the study district.

Table 5.12: Per hectare Costs and Returns With and Without Subsidy From Wheat Crop in Sampled Farmers of Mandi District in Himachal Pradesh.

(Rs./hectare)

Particulars	With subsidy		Without subsidy		%change	
	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group
General Category						
Cost A	-	2307	-	2383	-	3.29
Cost B	-	3476	-	3552	-	2.18
Cost C	-	5553	-	5629	-	1.36
Gross return	-	10598	-	10598	-	-
Net returns over cost A	-	8291	-	8215	-	-0.91
Net returns over cost B	-	7122	-	7046	-	-1.06
Net returns over cost C	-	5045	-	4969	-	-1.50
SC/ST Category						
Cost A	-	3539	-	3690	-	4.26
Cost B	-	5246	-	5397	-	2.87
Cost C	-	7695	-	7846	-	1.96
Gross return	-	9999	-	9999	-	-
Net returns over cost A	-	6460	-	6309	-	-2.33
Net returns over cost B	-	4753	-	4602	-	-3.17
Net returns over cost C	-	2304	-	2153	-	-6.55
General and SC/ST Category						
Cost A	-	2647	-	2743	-	3.62
Cost B	-	3964	-	4061	-	2.44
Cost C	-	6143	-	6240	-	1.57
Gross return	-	10433	-	10433	-	-
Net returns over cost A	-	7786	-	7690	-	-1.23
Net returns over cost B	-	6469	-	6372	-	-1.50
Net returns over cost C	-	4290	-	4193	-	-2.26

5.13 Cost and Returns From Wheat Crop With and Without subsidy in Solan and Mandi Districts of Himachal Pradesh

Costs and returns over cost A,B and C from wheat crop in low and high subsidy group of farms (with and without subsidy) of general and SC/ST category of farms are presented in Table 5.13. From this table it may be observed that costs were higher (with subsidy) among low subsidy group of farms in comparison to higher subsidy group. Whereas, picture is inverse in case of returns which were higher in high subsidy group of farms in comparison to low subsidy group of farms. Impact of the subsidy indicates that by withdrawing subsidy the costs would increase significantly. Analysis reveals that after withdrawal of subsidy from low subsidy group of farms the returns would decrease by by 2.64, 3.45 and 7.93 percent in comparison to 3.21, 3.98 and 6.61 per cent of high subsidy group over costs A, B and C respectively. Almost similar trend may be observed in case of general category farms but impact on returns by withdrawing subsidy from SC/ST category was comparatively higher when compared to general category and at overall level.

Table 5.13: Per hectare Costs and Returns With and Without Subsidy From Wheat Crop in Sampled Farmers of Solan and Mandi District in Himachal Pradesh.

(Rs./hectare)

Particulars	With subsidy		Without subsidy		%change	
	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group	Low subsidy group	High subsidy group
General Category						
Cost A	4165	2881	4296	3049	3.14	5.83
Cost B	5332	4119	5463	4287	2.45	4.07
Cost C	7473	6165	7604	6332	1.75	2.71
Gross return	9123	10577	9123	10577	-	-
Net returns over cost A	4958	7696	4827	7528	-2.64	-2.18
Net returns over cost B	3791	6458	3660	6290	-3.45	-2.60
Net returns over cost C	1650	4412	1519	4245	-7.93	-3.83
SC/ST Category						
Cost A	-	4041	-	4309	-	6.63
Cost B	-	5374	-	5642	-	4.98
Cost C	-	7609	-	7877	-	3.52
Gross return	-	9361	-	9361	-	-
Net returns over cost A	-	5320	-	5052	-	-5.03
Net returns over cost B	-	3987	-	3719	-	-6.72
Net returns over cost C	-	1752	-	1484	-	-15.29
General and SC/ST Category						
Cost A	4165	3402	4296	3615	3.14	6.26
Cost B	5332	4682	5463	4895	2.45	4.54
Cost C	7473	6813	7604	7026	1.75	3.12
Gross return	9123	10031	9123	10031	-	-
Net returns over cost A	4958	6629	4827	6416	-2.64	-3.21
Net returns over cost B	3791	5349	3660	5136	-3.45	-3.98
Net returns over cost C	1650	3218	1519	3005	-7.93	-6.61

CHAPTER – VI

SUMMARY AND CONCLUSIONS

Abstract Subsidies are an integral part of fiscal policy in India. The total quantum of subsidies in India rose from Rs.2028 crores in 1980-81 to Rs.22800 crore in 2000-2001. Out of this amount agricultural subsidies constitute the major portion. The subsidies to agriculture sector provided by the government, have recorded phenomenal rise during the past two decades. Considering the present position of fiscal deficit of the central and state governments, states must focus on better targeting of agricultural subsidies. Recently, their role as an incentive to promote agricultural development has been a subject of debate among economists, policy makers and academia. This matter assumes greater significance in the context of on going economic reforms in India. Those favouring view the subsidies as an instrument of stimulating agricultural production and in attaining self-sufficiency. On the contrary, opponents view subsidies as an unnecessary government intervention, which impairs the efficiency of pricing by the market forces. The state government provides lot of subsidies to develop agricultural sector in the state. Keeping this fact in view, Govt. of India assigned a study to the States on "Agricultural Input Subsidies in India: Quantum of Subsidies to SC/ST Farmers". In Himachal Pradesh study reveals that, the total amount of subsidy on various item is Rs.200.41 per farm at aggregate land which vary into Rs.304.87 in Solan district and Rs.95.95 per farm in Mandi district. The category wise distribution of subsidy reveals that the maximum benefits have been availed by the large farmers followed by medium, small and marginal farms.

Objectives of the Study The present study has been conducted with the following objectives:

1. To examine the utilization pattern of subsidies by different categories of farmers,
2. to assess the share of SC/ST farmers in total amount of subsidies used,
3. to analyze the overall effect of differences in the levels of input subsidy used by various categories of farmers on crop pattern, cropping intensity, adoption of improved technology, input use, crop productivity and returns.

Methodology

Because of higher concentration of SC/ST farmers in mid and high hill zones of Himachal Pradesh district Solan and Mandi where percentage of SC/St farmers was highest with in the zone as well as state were selected for the detailed study. Similarly one tehsil with higher percentage of SC/ST farmers was selected in the district. Further from each tehsil one panchayat with similar criteria was chosen from where 50 households belonging to SC/ST and 50 from general category of farms were selected for final sample. The selected sample further was divided into four categories of farms i.e. marginal, small, medium and large (above 4.01 hectare). In all 200 households (100 belong to SC/ST and 100 to general category of farms) were selected for detailed study. The required field data was collected in pre-tested schedules through personal interview method.

The secondary data was collected from various Directorates i.e. Directorate of Land Records, Animal husbandry, Horticulture, Agriculture, Food and Supplies and Rural Development and Panchayati Raj of Himachal Pradesh.

For calculating the quantum of subsidy used by particular farmers each respondent, was asked about the form (physical or financial benefit) of subsidy granted, its purpose, access, cost and benefits realized. Regarding food subsidy the respondents were asked about the access and the amount of wheat, rice, sugar, kerosene and other items bought from P.D.S. shop during the past two month and the problem faced by them. The study pertains to the calendar year 2000.

Main Findings The following findings emerge out of the study.

Agricultural Subsidies in the State

In Himachal Pradesh food crops grown are found to be insufficient to meet the total food requirement of the region. Also, in the hilly areas, there is serious land degradation due to over grazing deforestation etc. Under these conditions to enhance the production as well as productivity the subsidies are essential to protect the interest of farmers. In Himachal all concerned department of agriculture supplying subsidies either reimbursement of part of the cost or availability of input at lower price or supply of input at free of cost. The Directorate of Agriculture, Directorate of Horticulture, Directorate of Civil Supply, Directorate of Animal Husbandry and Directorate of

Rural Development and Panchayati Raj are directly concerned with rural people and offered some subsidy in different form to rural poors. In Himachal Pradesh a subsidy of Rs.4198.59 lakhs was dispersed through above-mentioned directorates. Directorate of Agriculture accounted for 47.88 per cent of the total subsidy followed by Directorate of Horticulture 26.91 per cent, Rural Development and Panchayati Raj 14.77 per cent, Directorate of food and Civil Supply 7.52 per cent and Animal Husbandry 2.92 per cent. On an average Rs.764.19 were granted as per hectare subsidy on net area sown. Per worker Rs.233.26 were granted as subsidy.

Disbursement of Subsidy in Solan Districts

Subsidy granted by various departments in Solan district shows that Rs.171.64 lakhs were dispersed in the district. Directorate of Agriculture was the main contributor which accounted 69.71 per cent of the total subsidy followed by Directorate of Rural Development and Panchayati Raj(15.33 per cent) and Directorate of Horticulture (5.87 per cent). On net area sown Rs.432.89 per hectare were granted as subsidy by govt. which is Rs.262.27 per hectare on gross cropped area. As far as subsidy to per worker is concerned Rs.128.09 were granted as subsidy whereas for agricultural worker the figure was Rs.224.71 per head.

Disbursement of Subsidy in Mandi District

Subsidy disbursement in Mandi district reflects that Rs.375.79 lakh were granted as subsidy by various departments in which Directorate of Agriculture played a major role. Availability of subsidy on per hectare of net area sown was Rs.438 which was reduced to Rs.233.26 at per hectare of gross cropped area. As far as per worker availability of subsidy is concerned it was Rs.129.19 in the district, which boiled down to Rs.171.90 at the level of per agriculture worker.

Indirect Subsidy on Fertilizers

The indirect subsidy on fertilizers was Rs.41.47, Rs.93.22 and Rs.843.03 lakhs in district Solan, Mandi and Himachal as a whole respectively. The per hectare and per worker subsidy was more in Himachal as a whole in comparison to Solan and Mandi district because decontrolled fertilizer use is lower in these districts in comparison to Himachal Pradesh as a whole.

Scenario of Total Subsidies (Direct & Indirect) Granted by Govt. to Farmers

A total subsidy of Rs.213.11, Rs.469.01 and Rs.5041.62 lacs was distributed in Solan, Mandi and Himachal Pradesh respectively. Comparatively the share of direct subsidy was higher and was 80.54 per cent, 80.12 per cent and 83.28 per cent respectively in Solan, Mandi and Himachal Pradesh. The share of indirect subsidies was higher in Solan and Mandi district in comparison to state as a whole. The subsidy on per hectare net cropped area, per hectare gross cropped area, per worker in all streams and per agriculture worker, remained higher in Himachal Pradesh in comparison to Solan and Mandi districts.

An Overview of The Regions Under Study

Population There has been an increase in number of rural and urban male and female population of Solan and Mandi districts as well as in Himachal Pradesh. Density of population has increased from 51 in 1961 to 109 during 2001 in Himachal Pradesh. Like wise in Mandi district the density of population increased from 57 in 1961 to 228 during 2001 and in Solan district it increased from 123 in 1971 to 258 in 2001. Population growth in Solan has been observed to be higher than Mandi and Himachal Pradesh. The rural population was observed higher in Mandi district when compared to Solan and the state as a whole. The highest urbanization was in Solan district, which was about 20 per cent and was just double than the rest of the state. This is because of establishment of industries and diversification towards cultivation of cash crops. Population of male was higher in rural and urban areas of Solan district as well in Himachal Pradesh. In case of Mandi district the situation was quite different the lower sex ratio is popular in urban areas, which is similar to the situation generally observed in other urban areas of the country where males come from their rural areas to work and live alone. In education both male and female of Solan and Mandi district are advanced when compared to the state as a whole.

Workers Percentage of workers in the total population increased during 1991 as compared to 1981 in both the study districts and state as a whole and registering a growth rate of 2.60, 1.92 and 2.07 per cent in Solan, Mandi and Himachal Pradesh respectively. The proportion of agricultural workers during 1981 to 1991 decreased constantly from 67.8 to 57.00 per cent, 77.75 to 75.16 per cent and 70.89 to 66.55 per cent in districts Solan, Mandi and Himachal Pradesh respectively.

Land Utilization The forest area has increased gradually and this increase has been observed highest in the state 30.61 per cent followed by Mandi district 14.49 per cent and Solan district 3.09 per cent. The permanent pastures and grazing land is the most important single category of land utilization in Solan and Mandi district as well as in Himachal Pradesh. Land put to non-agricultural uses has increased at a faster rate 34.36 per cent over 1982-83 to 1995-96 followed by Himachal Pradesh 17.50 per cent and Mandi 4.47 per cent. The net area sown during 1982-83 was 25.14, 23.37 and 18.35 per cent of the total geographical area which decreased to 22.27 per cent, 23.68 per cent and 16.42 per cent during 1995-96 in Solan, Mandi and Himachal Pradesh respectively.

Cropping Pattern The area under food crops in State as a whole and study districts and account 94.18 per cent, 98.48 per cent and 96.39 per cent respectively during 1980-81 and remained almost stagnant after one and half a decade. Out of this 90 per cent accounts for food grains i.e. 85 per cent under cereals and 5 per cent under pulses in Himachal Pradesh.

Productivity The productivity data of important crops does not indicate any trends. The yield rates of all the crops are much below than the average yield of the country and hence there is vast scope for improvement in this direction.

Basic Features of Sample Farms Families & Working Force

The average family size of sample is 4.85 persons per household. At overall level 65.89 per cent male and 66.26 per cent of female are workers. Higher number of workers have been observed in SC/ST population. In general category of farm agriculture alone absorb 60.71 and 54.55 of male workers in Solan and Mandi districts respectively whereas, this percentage for SC/ST is 66 and 51.52 per cent of workers in Solan and Mandi district respectively. Agriculture is the main secondary occupation for service and business class in the study areas.

Literacy At overall level among general category of household 91.53 per cent male and 75.68 per cent of female population is literate. Literacy among SC/ST farms families shows that it is 83.33 per cent among male and 60.96 per cent in female

Holding Size About 92 per cent of the total farmers among SC/ST and 84 per cent in general category are marginal and small. Whereas 6 and 13 per cent are medium and 2 and 3 per cent are large land holder on SC/ST and general category of farms respectively. On an average at overall level average farm size of land is 1.27 hectare, whereas it is 1.83 hectare in Solan and 0.70 hectare in Mandi district. The average size of land holding of SC/ST category of farms is 0.75 hectare which is 1.26 and 0.25 hectare in Solan and Mandi district respectively.

Land Use Pattern In Solan district double crop use to be grown in all size of farms at overall level. Cropping intensity was 200 per cent in the district. At over all level cropping intensity in Mandi district has been worked out to be190 per cent.

Cropping Pattern of Solan District

Wheat and maize are the major important crops of the farmers and these two crops occupied more than 90% of G.C.A. on different size of farms. The other important crops are barley and tomato. The selected area is rainfed and H.Y.V. seeds of all crops area most popular in the study area which covered more than 92.% of G.C.A.

Cropping Pattern of Mandi District

At overall level 88% irrigated area was found on general category of farms. Whereas these was no irrigated land with SC.ST households. About 10% of G.C.A. was irrigated which was below the state average irrigated area. At overall level the proportion of total area under H.Y.V. seeds was 93.8 per cent in wheat crop and 100 per cent in pea and paddy and 96.5 per cent in maize.

Cropping Pattern of Solan and Mandi Districts

At overall level 45.62 per cent of the area in G.C.A. was under wheat and maize respectively. The other important crops were barley pea, paddy and tomato. The 1.71 per cent area under wheat, 27.97 per cent of pea, 1.11 per cent of maize and 44.61 per cent of paddy was under irrigation.

Productivity of Important Crops in Selected Households of Solan and Mandi Districts

The productivity of selected farmers of all crops are much below the state average productivity as well as the district average productivity.

Utilization of Subsidies

Agricultural subsidies to farmers in Himachal Pradesh is mainly of two types i.e. input subsidies and output subsidies. Input subsidies have been categorized as fertilizer, seeds, plant protection material etc. On the other hand output subsidies are given mainly on food grains. The present study is concerned with all type of subsidies. The per farm and per hectare subsidies availed on these items is as follows:

Per Farm Subsidy Availed on Fertilizers In Solan district per farm subsidy on fertilizer has been worked out to be Rs.84.99 on general category of farms and Rs.58.49 on SC/ST category of farms. While in Mandi district per farm subsidy on fertilizer for general category has been worked out to be Rs.52.58 per farm whereas in case of SC/ST farms it is Rs.23.23 per farm. The higher subsidy on general category of farms is mainly due to large size of holding in both the districts.

Per Hectare Subsidy Availed on Fertilizers In Solan district the level of subsidy availed on general and SC/ST category of farms is almost equal because fertilizer use is limited in the area. In Mandi district, the level of subsidy on all fertilizers availed by SC/ST categories is much higher than general category of farmers. This is because of the reason that SC/ST farmer are much aware, conscious and interested about farming and applying higher dozes of fertilizer than general category of farms.

Per Farm Subsidy Availed on Seed Subsidy on seed distribution has been worked out to be Rs.175.68 on general category and Rs.186.00 on SC/ST category of farms in Solan district which shows that SC/ST category of farmers using higher quantities of purchased seed in comparison to general category of farm. In Mandi district per farm subsidy on seed has been worked out to be Rs.56.55 at over all level which increasesd with the increase in size of farm. The level of seed subsidy on farm is almost equal on SC/ST and general category of farms.

Per Hectare Subsidy Availed on Seed In Solan district at overall level per hectare subsidy availed by farmer has been worked out to be Rs.130.00. Marginal and small size of farms of general and SC/ST category availed higher subsidy as compared to medium and large category of farms. Per hectare subsidy at overall level in Mandi district has been worked out to be Rs.61.62

which was Rs.84.81 on marginal farms and Rs.38.15 on small farms. The level of seed subsidy availed by SC/ST category was higher than that of general category of farms.

Per Farm Subsidy Availed on Plant Protection Material In Solan district at overall level per farm subsidy has been worked out to be Rs.52.49 which was Rs.64.32 on general category of farms and Rs.40.66 on SC/ST category of farms. The higher subsidy on general category of farm was because of higher area under commercial crops in comparison to SC/ST farmers of respective category. In Mandi district the use of plant protection material was very limited on all size of farm as well as in general and SC/ST farmers. This is mainly due to negligible area under vegetable and other commercial crops. At over all level subsidy on plant protection material has been worked out to be Rs.1.48 in Mandi district.

Per Hectare Subsidy Availed on Plant Protection Material In Solan districts per hectare subsidy at overall level has been worked out to be Rs. 37.76 on plant protection material. Analysis shows that per hectare subsidy have inverse relation with farm size. The similar trend is followed in general and SC/ST category of farms. But in Mandi districts per hectare trend had direct relation with farm size.

Per Farm Total Amount of Subsidy At overall level of both the districts together, per farm value of subsidies availed by a farmers is Rs.200.41 which was Rs.217.46 on general category and Rs.182.66 on SC/ST category of farms. The maximum benefits of subsidy are availed by large size class in both the categories. General category of farmers were availing subsidy at the rate of Rs.625.23 whereas, it is Rs.1151.52 on SC/ST category of farms. The farm size have positive relation with subsidy in both the categories because of the reason that subsidy has been distributed on the basis of land. In Solan district subsidy availed by general category of farm was higher (Rs.324.99) in comparison of Rs.285.15 to SC/ST farms. In Mandi district per farm total subsidy at overall level was Rs.95.95. The subsidy availed by SC/ST farmer was higher than general category of farmers.

Per Hectare Total Amount of Subsidy At overall level per hectare subsidy was higher in SC/ST category of farms(Rs.248.99) in comparison to general category (Rs.198.55). Per hectare

subsidy was higher on marginal farms at both the categories. In Mandi district per hectare subsidy availed by SC/ST farmers was more than double as compared to general category of farmers.

Per Farm Cost and Returns With and Without Subsidy in Solan District

At overall level cost of cultivation without subsidy increased by 1.88 per cent. This increase was 1.19 per cent on large farm to 3.31 per cent on small farm. On the other hand the net returns decreased by 3.05 per cent.

Per Hectare Cost and Returns With and Without Subsidy in Mandi District

For general category of farm the production cost has increased by 1.13 per cent at overall level and net returns have been decreased by minus 1.59 per cent. Like wise the same for SC/ST, production cost increased by 2.34 per cent and net returns decreased by minus 3.65 per cent. Study shows that the affect of withdrawing subsidy is more on SC/ST farms than general category of farms.

Per Hectare Costs and Returns With and Without Subsidies in Solan and Mandi Districts

In general category cost of cultivation increased by 1.69 per cent without subsidy and net returns decreased by 2.52 per cent. In case of SC/ST the cost has increased by 2.51 per cent and net returns decreased by 3.97 per cent. The analysis shows that SC/ST farmers are more affected severely by withdrawing subsidies as compared with general category of farms.

Share of Subsidies Among SC/ST Farms in Solan District

More than half (52.96 per cent) of the subsidies has been utilized by general category of farm. In all general category of farms have utilized higher proportion of subsidies except large size of farm.

Share of Subsidies Among SC/ST Farms in Mandi District

57.83 per cent subsidies is utilized by SC/ST farmers

Share of Subsidy Among SC/ST Farmers in Solan and Mandi Districts

A total subsidies of Rs.39810 has been granted by Govt. to farmers out of which Rs.21545 and Rs.10265 have been utilized by general and SC/ST category respectively.

Quantity of Sugar Purchased The quantity sugar allowed to a family depends upon number of family member in a household. A limit of seven hundred gram per unit of sugar is allowed per month in both the study areas.

Quantity of Wheat Purchased At overall level in both the districts 22.76 kg. of wheat has been purchased by a family with in two months. The wheat purchased by Sc/ST is higher than general category of farm

Quantity of Kerosene Purchased None of the households in both the districts prepare food on kerosene. They purchased about 1 liter of kerosene per month to burn chulha only.

Cropping Pattern In Solan and Mandi districts wheat and maize are the most important field crops and covers about 85 to 90 per cent of the gross cropped area. Oil seeds and pulses are totally absent and not grown by any type of sample farmer. The cropping pattern. Its almost the same for high and low subsidy groups for both general and SC/ST farmers.

Effect of Subsidies of Fertilizer Consumption Among various agricultural subsidies, fertilizer subsidy is the next largest to food subsidy. The level of fertilizer consumption on general and SC/ST category of farm is almost equal because fertilizer use is limited due to rainfed conditions. But in Mandi district SC/ST category of farmers were using more fertilizer in comparison to general category of farm in all crops.

Proportion of Fertilizer on Important Crops In Solan and Mandi district about more than 90 per cent of the total fertilizer used is shared by wheat and maize.

Crop wise Input Use In both the study areas subsistence farming is practiced where human labour and bullock labour are the import out inputs in all crops except ginger.

Share of Different Crops in Total Input Utilization on Farm Though general category wheat and maize are the important crops but other crops like in cereals, tomato, other vegetables and ginger are also grown. In SC/ST category about 80 per cent inputs are shared by maize and wheat and rest about 20 per cent shared by all other crops in both the study areas.

Costs and Returns From Maize Cost and returns are higher on higher subsidy group of farms. The returns are positive on all costs in both the study areas as well as in general and SC/ST farms as well as for with and without subsidy conditions.

Costs and Returns From Wheat Returns over cost C are positive on all type of farm i.e. SC/ST and general category of farms as well as for with and without subsidy position which shows that this crop is viable in both the study districts.

Problems in Availing Subsidy

In Himachal Pradesh, the use of fertilizers, HYV, seeds and plant protection material is limited. These inputs have significant gap between recommended and existing doze of inputs in various crops.

1. High prices Most of the respondent in both general and SC/ST category of farms complaint that fertilizers, HYV seeds and plant protection material are costly. At overall level of district Solan and Mandi together 85.50 per cent are complaining about high prices.

2. Long Distance About 50.44 per cent of the farmers at overall level complaint regarding long distance. This problem is more in Solan district in comparison to Mandi district.

3. Low Capacity to Buy At overall level 79 per cent farmers complaint regarding low purchasing power. This problem is more in SC/ST than general category of farms in both the study districts.

4. Scarcity of Credit At overall level 68 per cent replied that there is a scarcity of credit and it is higher in Mandi district than that of Solan district.

5. Distance of P.D.S. Shops From Residence of Respondents A very few farmers walk more than 2 km. in both the district to purchase household goods.

6. Response Regarding Supply of P.D.S. Goods About 60 per cent of respondents thought the supply to be regular.

7. Response Regarding Assessment of Quality of P.D.S. Generally normal quality of goods are supplied by P.D.S. shops.

8. Response Regarding Quantity of P.D.S. Goods At overall level in both the districts together 27, 46, 27 present of respondents are in view that quantity is sufficient, low and normal respectively.

9. Response Regarding prices of P.D.S. Goods At overall level in both the districts half of the respondents are of the views that prices are high.

Suggestions The following suggestions are forwarded to make the input subsidy programme more effective and meaningful.

1. Presently subsidized input are supplied at block headquarter in the producing areas. In this connection the beneficiaries have to visit block head quarter many times to get the inputs. It is therefore, suggested that the sale centres of subsidized inputs should be located at panchayats level.

   Attention Directorate of Agriculture, Directorate of Horticulture, Directorate of Animal Husbandry and All Directorate of State Government related rural people.

2. The inputs like fertilizers, fungicide, insecticide and seeds are distributed through Government/Cooperatives and through a very few private traders supplying these inputs in the producing areas. This encourages monopoly in input market leading to exploitation of marginal and small farmers particularly of SC/ST. It is therefore, suggested that the licensing procedure may be liberalized. The license for trading in these inputs should be given to unemployed agricultural graduates in the producing areas.

   Attention Directorate of Agriculture Government of Himachal Pradesh.

3. The pattern of fertilizer subsidy is uniform among all the farmers irrespective of their size of holding. Moreover, there is no limit imposed for the quantities which can be purchased under this programme. This leads to large farmers cornering the higher amount of subsidy (in absolute term). This is contrary to the main aim of the programme to provide more benefits to the marginal/small and socially backward farmers. Therefore, input should be

provided on higher subsidy to these farmers than large farmers on there should be restriction on the quantities, which can be purchased under this programme so that the basic aim is not defeated.

Attention Directorate of Agriculture Government of Himachal Pradesh

4. It was reported by the farmers that the material supplied under subsidy programme particularly insecticide pesticide is of sub-standard quantity. It is therefore, suggested that the special wing for quality control of material supplied should be set up.

   Attention Directorate of Agriculture, Directorate of Horticulture Government of Himachal Pradesh.

5. The total cropped area under cash crops should be increased not only because these crops as compared to food grain crops are economically more viable, but it also takes care of the problem of surplus labour as well as raising of cash crops needs intensive agricultural operations as well as subsidized inputs during the crop period.

   Attention Directorate of Agriculture, Government of Himachal Pradesh

6. Since small and marginal farmers plight a very pathetic and most of them live in the lowest range of poverty particularly SC/ST, which ultimately affects the farm productivity. The purchased input utilization of these farmers is megre. Therefore, the state government should impart a large scale financial package with training to several individual farmers to enhance their knowledge of farm management as well as to some ancillary occupation. It is probably reasonable to assume that the present credit institutions have the financial ability to serve the need of the group. These matters would be subject to review after the training programme has progressed to a certain extent to ascertain that the farmers make proper use of credit and subsidy facilities for increasing their farm family income.

   Attention Government of Himachal Pradesh

7. The farm size of marginal farmers is very small in both the study areas and these tiny holdings are highly unviable. Therefore, a liberal subsidy should be offered to these farmers to enhance the production & productivity.

   Attention Government of Himachal Pradesh.

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ANNEXURE –1

COMMENTS RECEIVED FROM THE AGRICULTURAL ECONOMIC RESEARCH CENTRE, DELHI

Comments on the Study "Agricultural subsidies in India: Quantum of Subsidies to SC/ST Farmers in H.P." submitted by AER Centre, Shimla.

1. Title of the Draft study report examined – As given in the study proposal.
2. Date of receipt of the Draft Report – 05.11.2002
3. Date of Despatch of the comments – 09.12.2002
4. Comments on the objectives of the study. The study has covered all the objectives of the study. However, a few points should be added in the analysis.

Chapter I- Adequate coverage

Chapter II- The analysis of direct subsidies is adequate. The study has analysed indirect subsidies on fertilizers only. The share of direct and indirect subsidies in total agricultural subsidies for the state has to be covered.

Chapter III- Coverage is adequate but points should be consolidated. For example, cropping pattern is one sub-point in which general category, SC/ST farmers and both combined should be covered.

Chapter IV- The utilization of direct and indirect subsidies by sample farmers was analyzed. The impact of withdrawing agricultural subsidies on cost and returns of different categories of farmers may also be added. In addition, share of SC/ST farmers in direct, indirect and total subsidies availed should be analyzed.

Chapter V- Authors have covered low and high subsidy availing categories. Results for the medium category should also be presented. One again, impact of withdrawing agricultural subsidies on cost and returns for low, medium and high categories may also be worked out (per farm and per hectare).

5. Comments on the methodology – The authors have followed the indicated methodology given in the coordinated study design.

6. Comments on the presentation and getup – The report should be carefully edited.

7. Overall views on the acceptability of the report – The report is recommended to be accepted after incorporating the suggested points and careful editing.

ANNEXURE –II

ACTION TAKEN REPORT

Action taken by the authors based on the comments of the draft report titled :Agricultural Subsidies in India: Quantum of Subsidies to SC/ST Farmers in H.P.".

1. Title of the Draft Report :	No comments
2. Date of receipt of comments	Dec. 16,2002
3. Date of dispatch of final report	March 14,2003
4. Comments on objectives of the study	No comments

CHAPTER WISE COMMENTS

Chapter –I	No action required.
Chapter –II	Direct and indirect subsidies for the state included in the analysis.
Chapter –III	Consolidation done.
Chapter –IV	The impact of withdrawing subsidies included in the analysis. Share of SC/ST farmers in direct, indirect and total subsidies included.
Chapter- V	Analysis for medium category can not be carried out because of absence of this category. Impact of with drawing subsidies included.
5. Comments on methodology:	No action required
6. Comments on presentation and get up:	Needful done
7. Overall views on the acceptability of the report:	Needful done