AERC STUDY No. 49

The Extent of Erosion into Farm Profitability due to Market Imperfections in Punjab




Parminder Kaur

Parminder Singh

Study sponsored by Ministry of Agriculture and Farmers' Welfare
AGRO-ECONOMIC RESEARCH CENTRE
Punjab Agricultural University
Ludhiana
October, 2020

PREFACE

Punjab has always served as the pride point of Indiaôs achievement in agriculture. The state led the green revolution and the farmers of Punjab shouldered the responsibility of pulling out the country from food scarcity to food sustainability. The benefits of green revolution enjoyed by all classes of cultivators are now facing the problems of decline in the net income as a result of stagnating productivity, increasing cost of cultivation , un-remunerative prices for the produce for few commodities and increasing living expenses.. Absence of alternative employment opportunities in such situation has forced farmers to borrow both for cultivation and living expenses. Limited repaying capacity and declining income over the years has led to indebtedness and subsequently resulted into mental trauma for the farmers. Thus, to improve the economic condition of farmers, improvement in conditions related to cultivation, livestock and wage employment is needed. An in-depth analysis of the product and factor markets is necessary. Therefore, the present study **The Extent of Erosion into Farm Profitability due to Market Imperfections in Punjab** was undertaken to study the functioning of some important output and input markets and their effect on erosion of farm profitability**.**

We express our gratitude to the Directorate of Economics and Statistics, Ministry of Agriculture and Farmerôs Welfare, Government of India, New Delhi for providing financial support to take up this study. We are also thankful to. Dr C.S.C.Sekhar, Professor and Head, AERU, Institute of Economic Growth for providing constructive comments to the report, which has helped immensely in improving the present report.

Authors

TABLE OF CONTENT

LIST OF TABLES

ABSTRACT

The present study was undertaken to (i) analyze the product markets (output) including price(s) received (market as well as MSP if any), marketing channels, market structure and bottlenecks(ii)Analyze the input markets including seeds, fertilizer, labour etc with particular attention to costs (of the inputs), market structure and problems in accessing the same(iii) analyze the government support structure including access to credit(iv)analyze the coping strategies of farmers during economic hardships and their social networks. To meet the specific objectives of the study, the primary data were collected by personal interview method from 300 farm households representing all the farm categories i.e. marginal, small, medium, large and very large, from three districts namely, Moga, Bathinda and Hoshiarpur , representing different agro-climatic zones while the reference year of the study was 2018-19.The results brought out that from the total sample of 300 households, the number of marginal, small, medium , large and very large farmers were 103 (34.33%), 102 (34%) , 52 (17.33%), 35 (11.67%) and 8 (2.67%) respectively. Overall, 89 per cent of the total farmers belonged to general category followed by OBC(9 %) and SC category(2%). Overall, 94.95 per cent of the income was earned from cultivation while from animal husbandry the net income earned was 5.05 per cent. On an average, the size of landholding was 2.57hectares which varied between 0.77 hectares to 14.07 hectares across land holding categories. The leasing- out of land was found prevalent only among the marginal farmers. All the sampled farmers had possession of livestock, with the small farmers having more number of livestock while the least number of livestock was found on very large farms..The cropping pattern depicted that paddy and wheat crops were the major kharif and rabi crops grown by the sample farmers as these were found to be cultivated on 39.51per cent and 42.68 per cent of the gross cropped area, respectively. Maize, cotton, sugarcane, kharif fodder, potato, mungbean, spring maize and rabi fodder were the other crops grown by the sampled farmers. It was observed that marginal, small and medium category farmers cultivated more area under wheat and paddy crops followed by maize and cotton crop while large and very large farmers besides growing wheat and paddy preferred to cultivate potato and mungbean crop. The average yield per hectare of paddy and wheat was 7220 kgs and 4665kgs, respectively while the yield of sugarcane was 75618 kgs. The yields of all these crops were found to be highest on very large farms. Paddy and wheat produced was sold to government agencies at minimum support prices(MSP) while cotton , mungbean and spring maize were sold entirely in open market. Sugarcane was sold to sugar mills and potato was disposed off to the regional traders by the sampled farmers. The prices obtained were considered reasonable by 73.12, 45.71, 12.5, 16 , 79.66 and 16 per cent of paddy, maize, cotton, sugarcane, wheat and spring maize growing farmers. None of the potato and mungbean growing farmers stated the prices of these crops as reasonable. Overall the major reasons revealed by the sampled farmers for unreasonable prices of wheat and paddy were high input costs (52%) and high lease rent (34%). It was further reported that it became difficult for them to cover the cost of production due to high input costs and high lease rent. For maize, cotton, potato and mungbean and spring maize, farmers revealed the prices unreasonable due to non-procurement of the produce by government agencies and farmers were unable to get remunerative price and had to sell their produce at the much lower price, and in case of cotton they sold at the price lower than Minimum Support Price(MSP). The per farm value of the crops produced on marginal ,small, medium ,large and very large farms were estimated at Rs 1.27 lakh , Rs.2.95 lakh, Rs.6.66 lakh, Rs.15.96 lakh and Rs.33.15 lakh respectively. Overall, the value of crops was to the tune of Rs 5.34 lakh. The per farm expenses incurred on inputs for producing various crops on respective farms were Rs. 44977 Rs. 1.06 lakh. Rs. 2.56 lakh. Rs 7.38 lakh and Rs. 17.87 lakh respectively with overall expenses of Rs. 2.29 lakh. The returns over variable costs from crop production were estimated at Rs 82919, Rs. 1.88 lakh, Rs. 4.09 lakh, Rs. 8.58 lakh and Rs.15.27 lakh with overall average of Rs. 3.04 lakh. Related to animal husbandry, all the farmers obtained returns from the sale of milk only. The returns over variable cost from animal husbandry were estimated at Rs. 7856, Rs 23576, Rs 11848, Rs. 26520 and Rs. 12296 respectively on marginal, small, medium , large and very large farms with an overall average of Rs. 16188. The per farm net income (ROVC) from crop production and animal husbandry was worked out to be Rs 90775, Rs.2.12 lakh, Rs. 4.21 lakh, Rs. 8.84 lakh, and Rs. 15.39 lakh on the respective farm situations with an overall average of Rs. 3.20 lakh. Majority of the sampled farmers sold milk to local milk vendors followed by government agency. No assured procurement by the government, few buyers of milk, collusion of buyers were the major reasons revealed for unreasonable prices from the sale of milk by the sampled farmers. All the sampled farmers availed credit and the cooperative societies were the most preferred source of credit of 288 farmers (57.83%). while from government banks and micro finance/community group/NGOôs credit was borrowed by 99 (19.88%). and 111 farmers (22.29%) respectively. It was revealed that rate of interest paid by the farmers of different categories for availing loan from cooperative societies, government banks and micro finance/community group/NGOôs credit, was 7percent, 8.45 percent and 17.92 percent, respectively. From the government bank and micro finance/community groups/NGOôs, majority of the borrower farmers availed credit for both current expenditure in farm business and consumption expenditure while from cooperative societies, majority of the farmers i.e. 251 farmers(87.15%) borrowed loan for current expenditure in farm business. All the farmers in different landholdings categories repaid the loan borrowed from

cooperative societies and government banks. But the loan borrowed from micro finance/ community group/ NGO's were fully repaid by 48(43.24 %) farmers and not fully repaid by 63 farmers (56.75 %). The reasons reported for non repayment of loans by the majority of the farmers were due to both income being always less than their expenditure and also their decision to repay the loan when they would get payment after harvesting. For technical advice for their crops, the farmers accessed to various sources i.e. extension agents, Krishi Vigyan Kendras, agricultural universities/colleges, private commercial agents, progressive farmers, radio/newspapers/internet, veterinary department. Farmers received assistance under the scheme PM-Kisan. On the whole , 145 sampled farmers out of 300 farmers received assistance under PM-Kisan scheme. PM-AASHA scheme was not applicable in the Punjab State. The crops grown by all the farmers i.e. paddy, wheat, maize, cotton, sugarcane, potato and mungbean were not insured at all. The main reasons for not insuring the crops revealed by the farmers were that they were not interested while some revealed that they did not need insuring of the crops .The farmers also reported the lack of resources for premium payment and dissatisfaction with terms and conditions. The income from farming was revealed inadequate as majority of the farmers (62%) reported pest problems/crop diseases followed by destruction of crops by other (wild boars)animals (54.55%), high input costs (30%), problem of paddy straw management (25.66%), small land size (25.66%), prices not remunerative (18.66%), fluctuating rainfall (16.33%) and high interest rates charged on loan amount (14%) respectively. The severity was revealed high in case of small land size, pest problems/crop diseases ,high interest rate of money lenders , other animal problems , high rental value of lease in land and problems of paddy straw management . Seasonal unemployment ,sharp fluctuations in input prices , lack of finance/capital, sharp fluctuations in output prices and seasonal unemployment were the economic risks faced by the farmers. To cope with the economic risks, on the whole, majority of the farmers (42.16%) reduced their household consumption. Other strategies under taken by the farmers to bear risks were borrowed money from input dealers/commission agents (6.86%) , borrowed money from bank ((5.88%), started petty business/shop (4.90%), stored crops for better price(8.82%) . For having the information regarding the social networks of the farmers , it was found that out of 300 respondent farmers, 97percent were members of agricultural cooperative societies while only 9.6 percent of the households were having membership of dairy/milk cooperative societies and only one farmer was member of self help group. The reasons for not having membership of such societies revealed by farmers was that they did not get any opportunity while others considered it as time consuming. Thus, it can be revealed that Punjab has achieved very high levels of productivity per year through increase in cropping intensity and intensive use of inputs. The cost of inputs has increased faster than the output prices. Besides, capital investments are required in deepening of tube wells, replacement of centrifugal to submersible pumps, thus squeezing the profitability of agriculture and cause a big drain on farmersô income. Thus, mere increase of minimum support price (MSP) for crops alone would not guarantee better income to the farmers. Along with price incentives, concerted efforts are required to be taken to strengthen the non-price incentives such as the procurement system and market infrastructure for crops other than paddy and wheat which fits well in the diversification plan of the Government of Punjab. Further, educating the farmers about subsidiary occupations, providing loans at low rates of interest, creating sufficient non-farm employment opportunities, assured purchase of agricultural produce and further subsidizing agricultural inputs can help in minimising some of the existing problems of the farmers and thus, increase their incomes.

EXECUTIVE SUMMARY

Punjab is the most frequently quoted success story in the annals of the history of agricultural development in India. The states' contribution in making the country self reliant in food is well documented and appreciated. Advent of new farm technology which includes use of modern inputs such as; high yielding and short duration varieties of crops, chemical fertilizers, insecticides, pesticides and increased use of irrigation water and farm mechanization resulted in considerable increase in agricultural production and income of the farmers. After a tremendous performance since the mid-1960, the agriculture sector in Punjab is facing many challenges. Slow down in agricultural growth rate, escalation in costs of production, falling profitability in farming, reduction in employment elasticity of agriculture sector, increasing incidence of landlessness and indebtedness among the farmers and farmersô suicides are the major issues currently afflicting the Punjab agriculture. Fall in the ground water table, increasing soil fertility imbalance, appearance of new pests and weeds are posing major threats to the long-term sustainability of agriculture. The state is now faced with serious crisis in agricultural economy and there is severe distress in the rural areas .The return from farming is on the decline as pricing and procurement are unfavourable. Even crops like maize, which have been even recommended for diversification in the state, is not being purchased at the minimum support price (MSP) announced. Thus, to improve the economic condition of farmers, improvement in conditions related to cultivation, livestock and wage employment is needed. An in-depth analysis of the product and factor markets is necessary. However, profitability of any crop is not determined by its productivity alone. Factors like cost of cultivation of the crop, market price of the produce, marketing facility from government agencies, etc., play an important role in deciding the profit. The present study attempts to study the functioning of some of this important output and input markets and their effect on erosion of farm profitability.

Objectives

1) Analyze the product markets (output) including price(s) received (market as well as MSP if any), marketing channels, market structure and bottlenecks
2) Analyze the input markets including seeds, fertilizer, labour etc with particular attention to costs (of the inputs), market structure and problems in accessing the same
3) Analyze the government support structure including access to credit
4) Analyze the coping strategies of farmers during economic hardships and their social networks

Methodology

To work out the extent of erosion into farm profitability due to market imperfections in Punjab, the farm level primary data were collected from a sample of 300 farmers representing different farm size categories and agro-climatic regions of state.

The Punjab state comprises three broad agro-climatic regions and to meet the specific objectives of the study, at first stage of sampling three districts of Punjab viz. Moga, Bathinda and Hoshairpur, representing each regions of the state were selected randomly. Moga district represents the central plain zone, while Bathinda and Hoshairpur districts represent south-western plain zone and the sub-mountain undulating zone of the state, respectively. The districts were chosen with sufficient variation in the cropping pattern across the districts. At second stage, from each district, two villages were selected with sufficient geographic spread. The selected villages were not contiguous in location. A complete household listing was carried out in the selected villages. If a village was very large (>500 households), listing of at least 300 households, from all the locations in the village, was carried out. If a village was having less than 300 households, the cluster of villages were selected randomly for the farm household survey. Finally from each of the selected village /or cluster, 50 representative farm households, in proportion to their respective proportionate share in different categories in the village viz., marginal (up to 2.5 acre) , small (>2.5-5.0 acre) ,medium (>5.1--10.0 acre), large (>10.0--25.0 acre) and very large(>25 acre)were selected randomly. Thus, overall from state, total sample of 300 farmer households comprising 103 marginal, 102 small, 52 medium, 35 large and 8 very large farmers formed the basis for the present enquiry.

To address the aforementioned objectives of the study, detailed information on production of crops and animal products and use of inputs in physical as well as monetary terms along with other socio-economic aspects of farm households was collected. Data related to sale of the output, main marketing channels, all the inputs used and their procurement channels , labour and credit use pattern were also collected. Besides, information on MSP**,** assistance under government schemes, insurance, problems in farming, economic risks faced and coping strategies thereof was also collected from respondent farmers through the interview method using the specially designed schedules for the purpose. The information was pertained to the crop year 2018-19 (Reference year).

Tabular analysis and simple statistical tools such as averages and percentages were used for the interpretation of the results.

Results and Discussion:

The results of the study are presented under the following sub heads.

Overview of the sample villages

The results brought out that from the total sample of 300 households, the number of marginal, small, medium , large and very large farmers were 103 (34.33%), 102 (34%) , 52 (17.33%), 35 (11.67%) and 8 (2.67%) respectively. Overall, 89 per cent of the total farmers belonged to general category followed by OBC (9 %) and SC category (2%). None of the respondent farmer belonged to scheduled tribe. Cultivation was found to be the principal occupation of 94 per cent of the farmers. On an average, the size of landholding was 2.57 hectares which varied between 0.77 hectares to 14.07 hectares across land holding categories. The leasing-out of land was found prevalent only among the marginal farmers. All the farmers had irrigated land. All the sampled farmers had possession of livestock, with the small farmers having more number of livestock while the least number of livestock was found on very large farms. All the households possessed only milch animals. The major source of farmersô income was from cultivation followed by income from animal husbandry. Overall, 94.95 per cent of the income was earned from cultivation while from animal husbandry the net income earned was just 5.05 per cent. On an average, farmers received Rs 3.04 lakh as an annual net income from cultivation while from animal husbandry, annual net income received was Rs.16188. The net annual income from cultivation varied between Rs. 82919 to Rs.15.27 lakh among different categories of landholdings and from animal husbandry, the annual net income was found varying between Rs. 7856 and Rs. 26520 among different farm categories.

Crop and Input Markets

The cropping pattern depicted that paddy and wheat crops were the major kharif and rabi crops grown by the sample farmers as these were found to be 39.51 per cent and 42.68 per cent of the gross cropped area, respectively. Besides, paddy and wheat, other crops grown by the sample farmers were; maize, cotton, sugarcane, kharif fodder, potato, mungbean, spring maize and rabi fodder. It was observed that marginal, small and medium category farmers cultivated more area under wheat and paddy crops followed by maize and cotton crops. Large and very large farmers besides growing wheat and paddy preferred to cultivate potato and mungbean crop. The average yield per hectare of paddy and wheat was 7220 kgs and 4665kgs, respectively while the yield of sugarcane was75618 kgs. The yield of all these crops was found to be highest on very large farms. Paddy and wheat produced was sold to government agencies at minimum support prices (MSP) while cotton, mungbean and spring

maize was sold entirely in open market. Sugarcane was sold to sugar mills and potato was disposed off to the regional traders by the sampled farmers. All the paddy and wheat farmers (100%) were satisfied with the disposal channels of their produce. In case of other crops such as maize, cotton, sugarcane, potato, mungbean and spring maize, farmers were not satisfied with the disposal channels for selling their produce as they received lower price than the market price. The per farm value of the crops produced on marginal, small, medium, large and very large farms were estimated at Rs 1.27 lakh, Rs.2.95 lakh, Rs.6.66 lakh, Rs.15.96 lakh and Rs.33.15 lakh respectively. Overall, the value of crops was to the tune of Rs 5.34 lakh. The prices obtained were considered reasonable by 73.12, 45.71, 12.5, 16, 79.66 and 16 per cent of paddy, maize, cotton, sugarcane, wheat and spring maize growing farmers. None of the potato and mungbean growing farmers stated the prices of these crops as reasonable. The rest of the farmers considered prices for their produce as unreasonable. Overall, the major reasons revealed by the sampled farmers for unreasonable prices of paddy and wheat were high input costs (52%) and high lease rent (34%). It was further reported that it became difficult for them to cover the cost of production due to high input costs and high lease rent. For maize, cotton, potato and mungbean and spring maize, farmers revealed the prices unreasonable due to non-procurement of the produce by government agencies and farmers were unable to get remunerative price and had to sell their produce at the much lower price, and in case of cotton they sold at the price lower than Minimum Support Price (MSP*).*

The farmers used various inputs viz. Seeds, fertilizers, manures, plant protection chemicals , diesel, human labour, irrigation for crop production. It was found that majority of farmers purchased and farm saved paddy and wheat seeds while all the farmers who were growing maize, cotton, mungbean used only purchased seeds which they procured from input dealers as well as local traders. The per farm expenses incurred on inputs for producing various crops on respective farms were Rs. 44977 Rs. 1.06 lakh. Rs. 2.56 lakh. Rs 7.38 lakh and Rs. 17.87 lakh, respectively with overall expenses of Rs. 2.29 lakh. The prices paid for the use of various inputs considered unreasonable by the farmer. The major reasons for dissatisfaction were unsubsidized inputs, no price control, inputs considered costly even after subsidy.

Animal Products and Input Markets

Related to animal husbandry, all the farmers obtained returns from the sale of milk only. Majority of the households i.e. 137 (79.19%) sold milk to local traders (vendors) followed by government agency (16.76%). The monthly sale value of milk on marginal, small, medium, large and very large farms was Rs. 4236, Rs.7912, Rs. 8743, Rs. 12244 and Rs.11888 respectively. For lactation period, per farm sale value on the respective farm

situations was Rs. 33888, Rs. 63296, Rs. 69944, Rs. 97952, and Rs. 95104 respectively. Overall, sale value of milk for lactation period was to the tune of Rs. 59240. It was brought out that all the sampled farmers used these channels as their first disposal for sale of their animal product. The satisfaction was revealed by only 37.57 percent of the sampled farmers with the disposal channels for selling their produce and dissatisfaction was revealed due to receiving lower price than the market price .and delayed payments .No minimum support price for milk, no assured procurement by the government, few buyers of milk, collusion of buyers were the major reasons revealed for unreasonable prices from the sale of milk by the sampled farmers. It was further brought out that all the categories of farmers used farm produced green as well as dry fodder. Only very large farmers used purchased concentrates while farmers of other categories i.e. marginal, small, used both farm produced and purchased concentrates. Farmers used concentrates purchased from input dealers. Overall, the total monthly per farm variable expenditure for the purchase of inputs related to animal husbandry was Rs.5382 On marginal ,small, medium ,large and very large farms, monthly per farm variable expenditure was to the tune of Rs. 3254, Rs.4965, Rs.7262 , Rs.8929 and Rs.10351 respectively. For lactation period, the total per farm variable expenses related to animal husbandry was Rs. 26032, Rs. 39720, Rs.58096, Rs.71432 and Rs. 82808 respectively on the farms of respective landholding categories. Related to animal husbandry, out of the total variable expenses (for lactation period), per farm expenditure on the purchase of concentrates was found highest. It was revealed by majority of the sampled farmers that prices paid for the purchase of concentrates were reasonable. The unreasonable prices revealed by the rest of the farmers were due to costly concentrates. The prices for concentrates were revealed unreasonable due to non availability of subsidised concentrates and no control over their prices As the farmers used purchased concentrates, for which quality of concentrates was revealed good by 97 percent of the sampled farmers and only 3 percent of the farmers reported the concentrates of satisfactory quality.

Labour Market

For farming and livestock activities, more of the casual labour was employed by large farmers. The average number of labour employed per annum for farming and livestock operations were 2.69. Out of which, the number of family labour was 2.21 (1.52 male, 0.67 female and 0.02 children) while farm servants and casual labour was 0.15 (0.103 male and 0.05 female) and 0.33 respectively. None of the farm servants was found to be employed on marginal farms. On the whole, the average wage paid to the male farm servants was Rs.310.78 per day. Female servants were hired for petty works on monthly basis for Rs 600

or Rs.700 to do work for few hours daily. So per day amount of wages for their work were estimated to the tune of Rs. 22.69 only .The casual labour worked for Rs.316.49 for farming and livestock operations. The reasons reported by sampled farmers (58.33%) for unreasonable wages as limited labour supply which was due to labourersô intension of doing MGNREGA work. and due to shortage of labour supply, farmers had to pay high wages for farming and livestock activities. None of the sampled farmer was found to be engaged as wage labour in the study area.

Credit Market

All the sampled farmers availed credit and the cooperative societies were the most preferred source of credit of 288 farmers (57.83%) while from government banks and micro finance/community group/NGOôs credit was borrowed by 99 (19.88%). and 111 farmers (22.29%) respectively. It was revealed that rate of interest paid by the farmers of different categories for availing loan from cooperative societies, government banks and micro finance/community group/NGOôs credit, was 7 percent, 8.45 percent ,and 17.92 percent respectively. On an average the amount of credit borrowed was found to be more from government banks (Rs 4.06 lakh) followed by micro finance/ community group/NGOôs (Rs1.89 lakh) and cooperative societies (Rs 1.54 lakh). From the government bank and micro finance/community groups/NGOôs, majority of the borrower farmers availed credit for both current expenditure in farm business and consumption expenditure while from cooperative societies, majority of the farmers i.e. 251 farmers (87.15%) borrowed loan for current expenditure in farm business. All the farmers in different landholdings categories repaid the loan borrowed from cooperative societies and government banks. But the loan borrowed from micro finance/ community group/ NGO's were fully repaid by 48(43.24 %) farmers and not fully repaid by 63 farmers (56.75 %). The reasons reported for non repayment of loans by the majority of the farmers were due to both income being always less than their expenditure and also their decision to repay the loan when they would get payment after harvesting

Asset Endowments of the Households, Government Support Programs and Insurance

The net expenditure was calculated as the difference between the total expenditure incurred in the purchase of productive assets and receipts from the sale of those assets. On the whole, net expenditure was found positive only on medium (Rs 15.57 lakh) and on very large farms (Rs 26.45lakh) on other farms i.e. on marginal, small, large farms and over all farm situation the net expenditure was Rs - 6500, Rs. ï 23.05lakh, Rs ï 27.42lakh and Rs - 8.51lakh respectively. Per farm net expenditure on marginal, medium, large and very large

farms was Rs - 63, Rs - 22598, Rs 29942, Rs - 78343 and 3.30 lakh and overall was estimated as Rs -2838.

For technical advice for their crops, the farmers accessed various sources i.e.extension agents, Krishi Vigyan Kendras, agricultural universities/colleges, private commercial agents, progressive farmers, radio/newspapers/internet, veterinary department It was found that majority of the farmers did not require to access these sources which might be due to the reason that in Punjab paddy and wheat crops are being grown as principal crops since the green revolution and farmers themselves become so experienced in growing these crops. Mostly contact with these sources for technical guidance by majority of the farmers was need based. The advice which was taken by the sampled farmers was adopted by 100 percent of the farmers.

Regarding the opinions of the respondent farmers regarding the support under procurement and awareness about minimum support price (MSP) , the study brought out that All the 227 paddy growers (100%) and 300 wheat growers (100%) were aware of the assured procurement and MSP at which they sold their produce. They all were found aware of MSP but majority of them couldnôt specify the name of the agency to which they sold their produce. Other crops like; maize, mungbean and potato were not procured by the government agencies. Farmers received assistance under the scheme PM-Kisan. On the whole, 145 sampled farmers out of 300 farmers received assistance under PM-Kisan scheme. PM-AASHA scheme was not applicable in the Punjab State. The crops grown by all the farmers i.e. paddy, wheat, maize, cotton, sugarcane, potato and mungbean were not insured at all. The main reasons for not insuring the crops revealed by the farmers were that they were not interested while some revealed that they did not need insuring the crops. The farmers also reported the lack of resources for premium payment and dissatisfaction with terms and conditions.

Problems in Farming, Economic Risks Faced, Coping Strategies and Social Networks

The income from farming was revealed inadequate as majority of the farmers (62%) reported pest problems/crop diseases followed by destruction of crops by wild (wild boars) animals (54.55%), high input costs (30%), problem of paddy straw management (25.67%), small land size (25.67%), prices not remunerative (18.67%), fluctuating rainfall (16.33%) and high interest rates charged on loan amount (14.17%) respectively. The severity was revealed high in case of small land size, pest problems/crop diseases, high interest rate of money lender, other animal problems, and high rental value of lease in land and problems of paddy straw management. Seasonal unemployment, sharp fluctuations in input prices, lack of access

to inputs, lack of finance/capital, sharp fluctuations in output prices and seasonal unemployment were the economic risks faced by the farmers. To cope with the economic risks, on the whole, majority of the farmers (42.16 %) reduced their household consumption. Other strategies under taken by the farmers to bear risks were borrowed money from input dealers/commission agents (6.86%), borrowed money from bank (5.88%), started petty business/shop (4.90%), stored crops for better price (8.82%). For having the information regarding the social networks of the farmers , it was found that out of 300 respondent farmers, 97 per cent were members of agricultural cooperative societies while only 9.6 per cent of the households were having membership of dairy/milk cooperative societies and only one farmer was member of self help group. The reasons for not having membership of such societies revealed by farmers was that they did not get any opportunity while others considered it as time consuming.

Policy Implications

The present study attempts to study the functioning of important output and input markets and their effect on erosion of farm profitability. Punjab has achieved very high levels of productivity of crops especially paddy and wheat with intensive use of different inputs. At high level of output, the exploitation of natural resources per unit of output is even higher. It has led to the development of macro and micro-nutrient deficiencies in the state. Therefore, in order to maintain and improve the yield, the farmers have been further increasing the use of inputs. The increase in the prices of inputs i.e. urea, di-ammonium phosphate, weedicides etc. has been very high. The cost of inputs has increased faster than the output prices. Punjab agriculture has become highly capital intensive. Capital investments are required for deepening of tube wells, replacement of centrifugal to submersible pumps, thus squeezing the profitability of agriculture and cause a big drain on farmersô income. The institutional credit to the farmers has increased overtime but it has not been adequate enough to make a really dent on non-institutional lending to the farmers. The institutional credit to the farmers also comes at a cost other than the rate of interest. It is fraught with many inadequacies such as amount, easiness and timeliness etc. The Punjab farm sector is also saddled with large number of small and marginal farmers operating up to 2 hectares of land. They constitute about 35 per cent of the operational holdings. Farmers need sustained support in the form of increased returns from their crop cultivation. Thus, mere increase of minimum support price (MSP) for crops alone would not guarantee better income to the farmers. Along with price incentives, concerted efforts are required to be taken to strengthen the non-price incentives such as the procurement system and market infrastructure for crops other than paddy and

wheat which fits well in the diversification plan of the Government of Punjab. Further, educating the farmers about subsidiary occupations, providing loans at low rates of interest, creating sufficient non-farm employment opportunities, assured purchase of agricultural produce and further subsidizing agricultural inputs can help in minimising some of the existing problems of the farmers and thus increase their incomes.

CHAPTER-1

INTRODUCTION

Indiaôs agricultural sector is one of the largest in the world today in terms of production of foodgrains and other agricultural commodities. With over 60 million tonnes of buffer stock, India is not only a self sufficient country now but also an exporter of foodgrains to many countries. Although farmers have played decisive role in changing the farm sector to greater heights, their socio-economic conditions are reportedly in shambles today. Owing to less income from crop cultivation that has resulted in increased indebtedness, widespread suicides of farmers have been reported in different parts of the country.

Punjab has been a star performer in agriculture during heydays of Green Revolution. Its agriculture GDP grew at 5.7 per cent per annum during 1971- 72 to 1985-86, which was more than double the growth rate of 2.31 per cent, achieved at all-India level during the same period. It was this spectacular performance of Punjab, first observed in large wheat surpluses and then in rice, which helped India free itself from the PL 480 food aid and its associated political strings. Punjab became a symbol of Indiaôs grain surpluses, giving India a much needed food security. But after 1985-86, green revolution started greying and growth in Punjab agriculture slowed down to 3 percent per annum over the period 1985- 86 to 2004-05, almost same as achieved at all India level. But the real challenges to Punjab agriculture emerged when its growth crashed down to just 1.6 per cent per annum during 2005-06 to 2014-15, which was less than half the all-India agri-GDP growth of 3.5 percent over the same period. Owing to the earlier years of high agri-growth that Punjab had one of the lowest poverty ratios (7.7 percent in rural Punjab) in the country in 2011-12, as per Tendulkar poverty line, which was almost one-third of the levels of poverty at all India level. Providing food security to the country and reducing its own poverty to lowest levels within all India context, have been the most laudable achievements of Punjab. But lately, as a result of its decelerating agri-growth, Punjab has lost its pre-eminent position of being the state with highest per capita income in India, a title it carried since its inception in 1966 till 2002-03. Punjab slipped down in terms of per capita income ranking across major Indian states from first rank in 1991-92 to second rank in 1992-93, to sixth rank in 2009-10, 14th rank in 2013-14, rank 15th in 2014-15 and same rank in 2017-18 . And if current growth trends continue, it wonôt be a surprise that Punjab slips further down in this hierarchy of large Indian states in terms of its per capita income.

After a tremendous performance for about three decades since the mid-1960s, the agriculture sector in Punjab is facing many challenges. Slow down in agricultural growth rate, escalation in costs of production, falling profitability in farming, reduction in employment elasticity of agriculture sector, increasing incidence of landlessness and indebtedness among the farmers and farmersô suicides are the major issues currently afflicting the Punjab agriculture. Fall in the ground water table, increasing soil fertility imbalance, appearance of new pests and weeds are posing major threats to the long-term sustainability of agriculture. Further, there are emerging uncertainties of weather, climate change and global warming. Though their impacts are yet to be quantified, a rise in temperature will have a direct bearing on water availability, reducing the growth period, particularly in case of wheat. Farmers have to invest heavily to develop land and ground water initially and again for deepening of the wells as the water table is receding fast ultimately lead to their indebtedness. Mismatch in increase in cost of production and output prices has further exacerbated the situation.

Agricultural production process in the state has become cost intensive due to higher need and high use of inputs. Consequently, financial requirements of farming have gone up over time, which has increased the dependence of farmers on outside funding i.e. they have to borrow credit from different sources, institutional or non-institutional. Small farmers largely depend on non-institutional sources. All the farmers are heavily indebted in the state. Other factors responsible for the decline in income from agriculture are the increasing cost of capital equipment such as tractors. The return from farming is on the decline as pricing and procurement are unfavourable. Even crops like maize, which has been even recommended for diversification in the state, is not being purchased at the minimum support price (MSP) announced. Thus, to improve the economic condition of farmers, improvement in conditions related to cultivation, livestock and wage employment is needed. An in-depth analysis of the product and factor markets is necessary. However, profitability of any crop is not determined by its productivity alone. Factors like cost of cultivation of the crop, market price of the produce, marketing facility from government agencies, etc., play an important role in deciding the profit. The present study attempts to study the functioning of some of these important output and input markets and their effect on erosion of farm profitability .

1.1 Objectives of the study

5) Analyze the product markets (output) including price(s) received (market as well as MSP if any), marketing channels, market structure and bottlenecks

6) Analyze the input markets including seeds, fertilizer, labour etc with particular attention to costs (of the inputs), market structure and problems in accessing the same
7) Analyze the government support structure including access to credit
8) Analyze the coping strategies of farmers during economic hardships and their social networks

1.2 Review of literature

Grover *et al*. (2003) undertook the study to unravel the socioeconomic causes of distress faced by the farming community and to document the market conditions and infrastructure availability in product as well as factors markets. For the purpose of the study 30 victim families were approached to know the distressful conditions that led to suicide by farmers in the state. Study further found market imperfections as a root cause of the distress amongst cultivators. During the time of a bumper harvest there was a glut in the market and the government agencies were hesitant to procure large volumes of food grains because of already overwhelming stock. As a result of the glut of supply, market price of rice and wheat was slashed below the cost of cultivation. Hence, the expected returns turned in to negative which increased the debt burden of borrowing from village traders and pesticide dealers who have the important role in the marketing of cotton, rice and wheat in Punjab. The farmers were forced to sell their produce through these dealers and they charged relatively more commission or unjustified deductions. Also the late entry of government agencies in the procurement contributed to the exploitation of farmers by the private traders through offering lower price for their produce. At the same time, farmers were also in hurry to make money to fulfil the previous commitments, vis-a-vis consumption. Victims largely belonged to the age group of 18-37 years. About 57 per cent of victim families were the joint families and there was a prevalence of high degree of illiteracy. Almost all the sample households were indebted, which was the prime reason for suicide among 86.58 per cent of the victims. The proportion of non-institutional credit in the total outstanding debt was around 65 per cent. Therefore, such type of debt burden leads to the stress on individual life and the mental disorder leads to the ultimate act of suicide. The productivity of cotton has been declining with every passing year. Sometimes the cotton cultivators have to forego the entire crop due to the severe attack of American bollworm. The underground water table during the recent years has been declining so sharply that also forced farmers to use submersible pump-sets for getting adequate water for irrigation. This has increased the financial burden on the farmers. Due to this entire list of problems, already indebted farmers found it difficult to repay their debts and consequently it led to mental stress for them and ultimately towards suicide.

Satyanarayana *et al.* (2003) found that the new economic policy and opening of Indian agriculture at international level without any institutional support affected the domestic prices and thereby income of farmers. Free entry of Multinational Corporations in the seed market affected the farmers of Andhra Pradesh badly as compared to other states in the country. Inadequate supply of institutional credit forced farmers to borrow from the private sources at higher rates of interest for meeting both cultivation and consumption expenditure. With the irrigation facilities being scarce in the state, most of the farmers borrowed for the individual irrigation facilities i.e. digging and deepening of wells and tubewells. Unremunerative price pattern reduced the repaying capacity of farmers. Several social and psychological factors activated during the period which pushed them into a distressful act of suicides. But the root cause of the social and psychological stress led towards the deterioration of the rural economy of the state in recent past. Hence they feel that the policies which can enhance the economic conditions of farmers are needed rather to focusing on to counselling them.

Prasad A B (2007) in a study of Andhra Pradesh found that farmers suicides in the state are closely related to the traditional policies adopted both by the Central and State Governments in general and that of the policies during the post reforms in particular. The wrong estimation of the cost of cultivation and thereby announcement of the MSP by CACP (Commission on Agriculture Cost and Prices) which is often below the recommended price by state government and failure of input output markets of agriculture produce are responsible for the loss making agricultural operations. Opening up of the agriculture sector at international level has been responsible for the deterioration of cultivators. Farmers have to face uncertain nature of the international prices without any safety net. The negligence of irrigation projects resulted into an increase in the heavy expenses on tubewells. Lack of institutional credit supply compels farmers to borrow from the private sources at higher rates of interest. And the debt burden becomes uncomfortable due to the unrewarding nature of the agriculture. Due to the lack of public health facilities, the expenditure on the same has increased. As well as, efficiency of the rural people is declining at an alarming rate, which affected the productivity and also the production of the sector. On the other hand farmers spent more on unproductive purposes i.e. to maintain their social status. All these social, economical and policy matters are underlined as responsible for the distress act of suicides by farmers in the state of Andhra Pradesh.

Vinayak B *et al.* (2012) examined the distress situation among farm households in a drought prone Marathwada region of Maharashtra. The distress was measured in terms of

their income from cultivation and their experiences about input delivery, marketing and extension facilities. The region was divided into three regions, namely, resource-rich region, developing region and the core drought-prone region. Three-stage stratified sampling technique was used and the primary data were collected from 530 farm households during the year 2010. It was found that the per capita net annual income from cultivation for the core drought-prone region was Rs.4,825 and it was very much lower when compared to that for the other two sample regions and per capita income for the region. It is also possible that this income might have been generated by a small number of medium and large farmers, offsetting the distress situation prevalent in small and marginal farmers of the study region. It was also found that 4 per cent of the total sample households had received negative net income generated from all sources. The analysis indicated that the distress situation was prevalent among 10 percent of the bottom sample households in the study region on the basis of an income distress line of Rs.10,000 from all sources. A little over one-quarter of the sample households experienced either no change or worsening of their economic condition over the ten-year period. A majority of the sample farm households expressed serious concern over existing input delivery system, availability of electricity and human labour for crop production and the presence of middlemen in the agricultural marketing chain.

Boniphace *et al*. (2014) analyzed the determinants of market participation for smallholder rice farmers in the five major rice producing regions in Tanzania. The household socio-demographic characteristics of smallholder rice farmers were analyzed and discussed in relation to their influence on production and market participation. The results revealed that household consumption, land cultivated, livestock owned and dummy for rural areas indicated a positive significant relationship while nonfarm income indicated a negative and significant relationship with market participation. Further, low rice production, underdeveloped transport infrastructure and lack of reliable markets closer to higher rice producing were found to be the main problems associated with smallholder farmers in the study area.

Das Litan *et al.* (2014) conducted a study to find out the constraints faced by NERAMAC (North Eastern Regional Agricultural Marketing Corporation Limited) as an organization and the fruits growers in Assam. The results showed that the NERAMAC beneficiaries of fruit growers ranked less intensity of advisory services and storage of harvested produce as the first and foremost major constraints in fruit production and marketing. The non-beneficiaries ranked fluctuating market price and finding appropriate market price of produce as first and second constraint, respectively. Lack of proper

management of work and poor cooperation at grass-root level were the prominent organizational and functional constraints. The study concluded that to get higher level of profit and to accelerate the growth of fruit production in the North Eastern Region, the barriers such as lack of proper infrastructure, getting right price of the produce, lack of village organisation needed to be minimized or removed. Regular training of staffs in organizational coordination and management has to be conducted. Focus should be given for developing the coordination with farmers and leadership development. It is very important to maintain good organizational climate. For functional effectiveness, the most prioritized constraint have to be solved through linkage with ATMA, SAUs, KVKs and other governmental or non-governmental organizations for better grass-root level coordination. Backward linkage for improved planting materials and environmental friendly inputs for increased production of fruit crops need to be strengthened. NERAMAC should increase activities and training, grading aspect of products for improving quality and reducing losses.

Jalalzadeh *et al.* (2014) investigated the marketing channels of agricultural crops in West Azerbaijan Province, Iran. The existence of many brokers and intermediaries in the transfer of goods from the producer to the consumer was observed to be the major problem of agricultural economy. Data was analyzed using descriptive and inferential statistics such as: percentage, frequency, t-test, Mann-Whitney (u-test), Eta test and One-way ANOVA. Eight main marketing channels (i). Producer- Consumer (ii) Producer -Wholesaler -Retailer ï Consumer (iii) Producer- Broker- Wholesaler- Retailer ï Consumer (iv) Producer -Broker ï Retailer- Consumer (v) Producer - Retailer ï Consumer (vi) Sales to broker on harvesting time (vii) Producer - Food (viii) Sales to broker before harvesting time) were recognized. The author found channel (i) as the most appropriate channel and the channel (iv) as the least appropriate channel for the farmers to sell their crops.

Bhatia *et al*. (2016) revealed that producers obtained maximum share in consumer rupee (93.46 percent) from direct marketing of cucumber which may be due to non-existence of market intermediaries between producers and consumers. Whereas least share in consumers rupee (62.67 percent) were observed in Channel-II (Producer- Wholesaler- cum ï Commission Agent - Retailer ï Consumer) which may be due to large number of middlemen involved in marketing chain of cucumber. As far as marketing efficiency was concerns, Channel-I (Producer- Consumer) was found most efficient among all other marketing channels. Lack of poly house/crop insurance schemes to mitigate the risk arising due to damage of crop/structure (84per cent), followed by attack of insect and pest as well as nematodes (80 per cent), supply of inferior poly-house materials/lack of advice from service

providers (80 per cent) were found most prominent constraints in the production of cucumber under poly house, whereas, lack of market information about prices and demand in different markets (80.67 per cent), non-remunerative prices of produce (76 per cent) were observed to be some of the marketing constraints. Keeping in view all the aspects, there is need to provide more support to realize full potential by development of efficient market infrastructure, providing liberal financial support at low interest rate. Poly house enterprises should be treated as agricultural rather than commercial entity. So that emerging poly house enterprise would prove to be more profitable for the farmers of the state.

Chandresh Dhurwey *et al*. (2016) attempted to examine the marketing aspects of cabbage crops in Bemetara district of Chhattisgarh. Hundred farmers were selected randomly from ten villages from Bemetara district. The major findings revealed that there were three marketing channels of cabbage, Channel-I: Producer-Consumer, Channel-II: Producer-Itinerants (kochia)-Consumer, and Channel-III: Producer-Commission agent-Retailer-Consumer. Price received by cabbage producer was ₹585, ₹465 and ₹498 per quintal in Channel-I, Channel-II and Channel-III respectively. Net price received by cabbage producers was ₹535 per quintal in Channel-I ₹465 per quintal in Channel-II and ₹436 per quintal in Channel-III. Marketing cost was paid by producers by an amount of ₹ 50 and ₹62 in Channel-I and III. The study also revealed that the lack of storage facilities was reported as the most important constraints faced by vegetables growers.

Chatterjee and Kapur (2016) approached to understand the mechanism of Government intervention and output market at an all-India perspective. Based on a large, unique dataset, large overall variation in prices among mandis was found. About 37 percent of this variation was because of time invariant location specific factors and another 39 percent was because of time and location varying factors. In trying to understand the mechanisms that might explain these results the study focused on key government interventions in agriculture output markets, geographically selective intervention by the government in procurement of grains, and the market power that the mandis enjoy because of restrictions in the APMC act. It was found that selective intervention by the government creates a 2-4 percent variation in prices depending on crop. That for paddy, government intervention improves terms of trade in favor of the farmers as one would expect but in the case of wheat it goes the other way round. One possible reason could be that procurement results in lower-grade varieties (or distinct varieties) being sold in mandis and thus government intervention might depress the market price. Farmers sold their produce at up to 5 percent lower prices in geographically isolated

mandis which enjoy market power because they face little competition, compared to areas where mandis enjoy little market power.

Kaur and Kaur (2016) conducted the study to examine the marketing behaviour and extent of participation of marginal and small farmers in modern milk marketing chains and to analyze the major factors influencing milk producer's choice of agencies for sale. A sample of 90 marginal and small farmers comprised of 43 marginal and 47 small farmers having at least one milch animal was selected from three districts namely Hoshiarpur, Ludhiana and Bathinda districts representing each of the three different agro-climatic zones of the state. Primary data for the year 2014ï 15 were collected to meet the stipulated objectives of the study. The results revealed that on an average, the number of milch animals maintained on marginal and small farms were 3.21and 4.05 respectively. The total milk production was estimated at 26.18 and 30.79 litres per day on the said farm categories. On an average, 82.70 per cent and 85.48 per cent of the total milk production was sold in the market by the marginal and small farmers respectively. Milk marketed through the modern channel was 60.28 per cent and 62.35 per cent respectively on the said farm categories. The results of the logit model revealed that age of dairy farmers, volume of milk produced, level of education of dairy farmers and land holding size greatly influenced the decision towards participation in modern milk marketing chains. An effective way of involving small holders in modern milk marketing channels is to encourage them to organise themselves into cooperatives and self help groups. Such organizational structures help them improve their bargaining power and also generate scale economies in acquisition of inputs, technology, services and information.

Khobarkar Vanita *et al.* (2016) studied the economics of marketing of muskmelon in Akola district of Maharashtra. The study was based on primary data collected during the year 2013-14. The primary data of 60 growers were collected from tehsils of Akola districts and functionaries involved in muskmelon procurement producer, wholesalers, and retailer were selected for collecting information. The muskmelon producers were found to be follow two channels for marketing of muskmelon; channel-I (Producer - Consumer) and channel-II (Producer - Wholesaler ï Retailer ï Consumer). The marketing cost was found to be higher in channel-II due to involvement of more middlemen in it. Producer share was found highest in channel-I i.e. 95 per cent and in channel-II, it was 73.32 percent. The study has suggested that measures need to be adopted to increase access of farmers to market information and they should be motivated to market the produce collectively to reduce the cost on transportation.

Krishna A G *et al.* (2016) revealed that amongst all the NTFPs (Non-Timber Forest Products) tamarind contributes highest income with 39.22 per cent having three

different marketing channels in Bastar district, Channel-I (Collector-Consumer), Channel-II (Collector-Local retailer (Kochia)-Wholesaler-Consumer) and Channel-Ill (Collector-CGMFPFed (Chhatisgarh Mandi Board and the Chhattisgarh Minor Forest Produce Marketing Federation) (via commission agent)-Consumer). The producer's share of consumer rupee was found highest for Channel-I at 89.57per cent, followed by 50.63 and 34.34 per cent in Channel-II and III, respectively. The net margin for kochia and wholesaler were 14.48 and 22.28 per cent respectively in Channel-II and 49.84 per cent for CGMFPFED in Channel-III. The total marketing cost was highest at Rs. 790.90 for Channel-I, due to processing, packaging and grading, followed by Rs. 359.35 and 195.00 for Channel-II & I respectively. The very low price of tamarind, lack of transport, storage and finance facilities followed by high level of exploitation by traders often discourages the gatherers interest for tamarind marketing.

Kumar Pankaj *et al.* (2016) conducted a study in Yamunanagar district of Haryana, which was selected purposively on basis of maximum area and production under poplar plantation. The study revealed that the total cost incurred by the producer/seller was Rs.79.57 per quintal of produce. The major item of marketing cost borne by producer was commission fees, market fees, transportation and unloading charges. Further, it was observed that major marketing problems faced by the poplar growers were related to direct marketing, high marketing cost, lack of support price, frequent price fluctuations and malpractices adopted by market functionaries in weighing of produce as well as during grading of produce in different categories.

Kumar *et al*. (2016) revealed that direct marketing of onion was found most profitable (Channel-Ill) among all other marketing channels. As per marketing efficiency was concern, Channel-Ill (Direct sale by the producer) was also found most efficient among all marketing channels viz. Channel-I(Producer - Wholesaler cum Commission Agent- Retailer ï Consumer) and Channel-II (Producer ï Retailer ï Consumer). This was because of the non existence of intermediaries between the producer and ultimate consumer. Marketing of onion was found highly seasonal in nature. However, the prices and arrivals moved in opposite directions. The arrivals indices during May-June were the highest. It showed that majority of the farmers sold their produce immediate after harvest due to inappropriate storage facilities and pressing needs for cash, as a result onion growers were getting lowest prices of their produce. Therefore, the study suggested that adequate scientific storage facilities should be provided to the producer so as to spread the sale throughout the year with minimum quantitative and qualitative losses. Producers should also be provided credit facilities against

their produce stored to meet their immediate financial commitments. Co-operatives marketing as well as farming need to be encouraged to play an important role in the marketing of onion especially for the small farmers who have poor retention capacity and should be provided adequate finance to construct storage facilities.

Papang J S *et al.* (2016) examined the marketing system and the major constraints in marketing of turmeric in the Jaintia Hills district of Meghalaya. Multi-stage sampling was used for selection of 80 farmers and 40 market intermediaries. The study revealed that maximum farmers were female. The marketable and marketed surplus was found to be 63.08 percent and 60.56 percent to the total production respectively. Three major marketing channels were identified; Channel-Ill (Producer-Commission agent-Wholesaler-cum-processor-Retailer-Consumer) was most common. The producer's share in consumer's rupee was more or less equal in all the channels with a difference of 2 to 3 percent. Channel-I was found to be more efficient than Channel-III but the volume transacted was more in the case of Channel-Ill. Price fluctuation was the major problem faced by farmer whereas, unavailability of proper storage facilities was the serious problem faced by market intermediaries.

Reddy *et al.* (2016) investigated the pattern and extent of availability, accessibility and economics of pledge loan against Warehouse receipts by Agricultural Produce Market Committee's (APMCs) and commercial banks in Hyderabad-Karnataka region during the year 2011ï 2012. The study results revealed that Bidar and Raichur showed better growth rate with respect to number of beneficiaries and amount received from the commercial bank against warehouse receipt. However, it was interesting to note that the average number of beneficiaries and amount received was observed more in case of Koppal district followed by Gulbarga. In case of APMC financing against the warehouse receipt as evident from Sindhanur market performed better in case of number of farmers and amount covered under pledge loan scheme. The study suggest that there is an inevitable need for creating awareness among farming community about the significance of warehouse receipts which can act as weapon and also as collateral security for minimizing the risk of selling agriculture produce for distress sale after immediate harvest. This can be regulated only through strengthening APMCs activities.

Reddy P Divakar *et al*. (2016) conducted a study to know the instability of the onion markets in India during 1995ï 2013. An instability index was used to assess the instability associated with the export of onion to different countries. The instability index of export in terms of quantity during pre removal period was 23.6 per cent, while in the post removal period it reduced to 16.89 per cent signaling stability in terms of export. This can be

attributed to increased production (area led). In terms of value much difference was not observed between the two time periods. United Arab Emirates was the most loyal importer of Indian fresh onions with retention probability of 0.65. This was reinforced by the transfers from Indonesia to the extent of 0.11 probability, and 0.33 probability from other country share. But it had tendency to lose its share to Malaysia to the extent of 0.12 probability. Malaysia with a retention probability of 0.44 was the third loyal importer of Indian onions. It had absorbed 0.12 probability shares from UAE, 0.37 shares from Bangladesh and 0.11 share probabilities from Indonesia. But it had lost 0.26 probability share of its previous year's share to Bangladesh and 0.29 probability share to the others countries. Indonesia was the second loyal importer of Indian onion with a retention probability of 0.77. It had lost its share to Malaysia and UAE at 0.11 probability share.

Shrey Ravi *et al*. (2016) attempted to find out the farmers suicides scenario in India and their cause. The study was based on the secondary data collected from different official sources. The farmer's suicide data were collected for the period of 2000ï 2012. It was revealed that there was a continuous decline in the share of agriculture and allied sectors in the GDP from 22.4 percent in 2001ï 02 to 13.9 percent in 2013ï 14 at 2004ï 05 prices. Whereas analysis of Farmers ôSuicides and All Suicides by Sex in India Between 2000 and 2012 reported 2.1 lakh farmersô suicides, which was 13.74 per cent of all reported suicide deaths. Suicide rates were higher in non farming community i.e. 15.7 percent and 16.9 percent as against the 14.6 percent and 15.3 percent for farmers in year 2011 and 2012 respectively. Beside these cause-wise number of farmersô suicides by sex group in India were also analyzed and it revealed that maximum farmers (1163) committed suicide due to bankruptcy or indebtedness followed by family problems faced by 1135 farmers.

Singh and Singh (2016) conducted a study to examine the mechanism followed by the farmers for marketing of milk produced and to study various production and marketing related constraints faced by dairy farmers in sub-mountainous region of the Punjab state. The results of the study revealed that mostly farmers sold the milk produced directly to the milk vendors due to ease in selling from home as compared to selling through co-operative milk societies and directly to consumers. The price realized by selling buffalo milk to co-operative milk societies was higher while in the case of cow milk, it was direct selling to consumers which fetched higher price to the dairy farmers due to less knowledge about the fat content of milk purchased by the consumers. Major problems encountered by dairy farmers included; low productivity in case of local cows and buffaloes, repeat breeding in buffaloes, high cost of feed/fodder, lack of availability of green fodder throughout the year, lack of organized

milk marketing facilities, low price of the milk sold and problem of disposal of male calves and old/disabled cattle. The study emphasized on the establishment of new milk marketing societies, supply of high yielding milch animals at subsidized rates and strengthening of veterinary facilities for increasing the income of the farmers from dairy farming in the sub-mountainous region of the state.

Aditya *et al.* (2017) analysed farmers' awareness about Minimum Support Price (MSP) and its impact on diversification of crops grown in India. The study tried to analyse the level of awareness of farmers about MSP of crops they grow and its correlating factors using a comprehensive dataset of National Sample Survey Office, 70th round. It was found that more than 75 per cent of Indian households were not aware of MSP of crops grown by them. Awareness was high only in case of rice and wheat that too only in few states like Punjab, Haryana and Chhattisgarh, from where food grains are heavily procured by designated agencies for maintaining buffer stock or PDS. Awareness of MSP of pulse crops was even less (<10 per cent for most of the crops), which is a cause of concern. Their ignorance made it easy for middlemen and other traders to exploit the farmers by quoting less price. Out of few who were aware of MSP, nearly 25 per cent of farmers reported not selling the produce to procurement agencies. Unavailability of procurement agencies and local purchasers were reported as the major reason. From probit regression, it was conclude that to make more farmers aware about MSP of crops and to enable them to take benefit of it, better network of procurement agencies should be developed. Decentralized procurement agencies with local presence coupled with increased storage capacity or system of deficiency payments to bypass the need for procurement can extend the benefits of support prices to a larger segment of the farming community. Public extension machinery could also play a vital role in this regard.

Patel and Singh (2019) analyzed the growth trend in minimum support price of wheat and paddy for a period of 1975-76 to 2017-18 and compared minimum support price and cost of production for a period of 2010-11 to 2016-17 based on secondary data. It was revealed that the growth rate of cost of production was higher than the growth rate of minimum support price. Comparison of Minimum support price and cost of production revealed that in case of wheat minimum support price was 1.35 to 1.26 times the cost of production in the study period. In case of paddy minimum support price was 1.4 to 1.06 times the cost of production in the study period showing wider range as compared to wheat. In case of paddy the growth rate of cost of production was 10.33 while that of minimum support price was 6.54 indicating decreasing profit margin over the years. In case of wheat the growth rates

were found to be almost similar in both the case - cost of production growth rate was 6.09 while that of minimum support price was 5.13 indicating stable profits over years. Thus it was concluded that the announcement of minimum support price to be 1.5 times the cost of production will be beneficial to the farmers as till date it has been less than 1.5 times. Also, there seems to be a need to increase the minimum support price at higher rate in order to stabilize the profit margin or net income of farmer. Thus it was suggested that though the growth rate of minimum support price for wheat and paddy were similar, there is need to increase the minimum support price in proportion to the increase in cost of production

A thorough analysis of the literature reviewed above asserts that a great deal of research was conducted regarding the imperfections in output markets (crops and animal product markets)and input markets in India. Imperfections were reported in the marketing of produce where village traders, pesticide dealers played important role due to glut in market as the government agencies were hesitant to procure large volumes of food grains because of already overwhelming stock and the expected returns of the farmers turned in to negative. Unremunerative price pattern was found which reduced the repaying capacity of farmers. Besides lack of storage facilities, lack of extension services were also reported in the some of the studies The growth rate of cost of production higher than the growth rate of minimum support price was also reported as the reason for declining income of the farmers .However, most of the studies were conducted in both the markets i.e output and input markets but in isolation. There was dearth of studies analyzing imperfections together in product, input, labour, credit markets etc. The present study therefore, attempts to plug this gap in knowledge

1.3 Methodology, including sampling techniques and analytical framework

To work out the extent of erosion into farm profitability due to market imperfections in Punjab, the farm level primary data were collected from a sample of 300 farmers representing different farm size categories and agro-climatic regions of state.

The Punjab state comprises three broad agro-climatic regions. To meet the specific objectives of the study, at first stage of sampling three districts of Punjab viz. Moga, Bathinda and Hoshairpur, representing each regions of the state were selected randomly. Moga district represents the central plain zone, while Bathinda and Hoshairpur districts represent south-western plain zone and the sub-mountain undulating zone of the state, respectively. The districts were chosen with sufficient variation in the cropping pattern across the districts. At second stage, from each district, two villages were selected with sufficient geographic spread. The selected villages were not contiguous in location. A complete household listing was

carried out in the selected villages. If a village was very large (>500 households), listing of at least 300 households, from all the locations in the village, was carried out. If a village was having less than 300 households, the cluster of villages were selected randomly for the farm household survey. Finally from each of the selected village /or cluster, 50 representative farm households, in proportion to their respective proportionate share in different categories in the village viz., marginal (up to 2.5 acre) , small (>2.5-5.0 acre) ,medium (>5.1--10.0 acre), large (>10.0--25.0 acre) and very large(>25 acre)were selected randomly. Thus, overall from state, total sample of 300 farmer households comprising 103 marginal, 102 small, 52 medium, 35 large and 8 very large farmers formed the basis for the present enquiry. The detailed information of the selected districts and villages /clusters is presented in Table1.5.1

Table 1.5.1: List of selected districts and villages in Punjab, 2018-19.

Agro-climatic zones	District	Village/ Cluster	Size		Sample (no.)
Central plain zone	Moga	Chuhar chak	Marginal	Up to 2.5 acre	14
			Small	>2.5-5.0 acre	15
			Medium	>5.1--10.0 acre	13
			Large	>10.0--25.0 acre	6
			Very large	>25 acre	2
			Total		**50**
		Bhinder khurd	Marginal	Up to 2.5 acre	12
			Small	>2.5-5.0 acre	15
			Medium	>5.1--10.0 acre	8
			Large	>10.0--25.0 acre	13
			Very large	>25 acre	2
			Total		**50**
South-western plain zone	Bathinda	Kararwala	Marginal	Up to 2.5 acre	17
			Small	>2.5-5.0 acre	14
			Medium	>5.1--10.0 acre	10
			Large	>10.0--25.0 acre	8
			Very large	>25 acre	1
			Total		**50**
		Ghuman kalan	Marginal	Up to 2.5 acre	20
			Small	>2.5-5.0 acre	18
			Medium	>5.1--10.0 acre	7
			Large	>10.0--25.0 acre	4
			Very large	>25 acre	1
			Total		**50**
Sub-mountain undulating zone	Hoshiarpur	Cluster-I (lachowal,pathial,sherpur,khun khun khurd,madiala,asalpur and khusrpur)	Marginal	Up to 2.5 acre	20
			Small	>2.5-5.0 acre	18
			Medium	>5.1--10.0 acre	9
			Large	>10.0--25.0 acre	2
			Very large	>25 acre	1
			Total		**50**
		Cluster-II (nainowal vaid,rampur and sikri	Marginal	Up to 2.5acre	20
			Small	>2.5-5.0 acre	22
			Medium	>5.1--10.0 acre	5
			Large	>10.0--25.0 acre	2
			Very large	>25 acre	1
			Total		**50**
Total sample size			**Marginal**	**Up to 2.5 acre**	**103**
			Small	**>2.5-5.0 acre**	**102**
			Medium	**>5.1--10.0 acre**	**52**
			Large	**>10.0--25.0 acre**	**35**
			Very large	**>25 acre**	**8**
			Total		**300**

To address the aforementioned objectives of the study, detailed information on production of crops and animal products and use of inputs in physical as well as monetary terms along with other socio-economic aspects of farm households was collected. Data related to sale of the output, main marketing channels, all the inputs used and their procurement channels , labour and credit use pattern were also collected. Besides, information on MSP**,** assistance under government schemes, insurance, problems in farming, economic risks faced and coping strategies there of was also collected from respondent farmers through the interview method using the specially designed schedules for the purpose. The information was pertained to the crop year 2018-19 (Reference year).

Tabular analysis and simple statistical tools such as averages and percentages were used for the interpretation of the results.

CHAPTER-2

OVERVIEW OF THE STUDY REGION

This chapter has been discussed under the following heads:

2.1 Overall description of the study region based on village listing schedule

2.2 Overview of the sample villages covering

2.2.1 Distribution of households in different landholding categories, average size of landholding (in hectares), irrigation status, land leasing status etc

2.2.2 Distribution of households by social groups, occupations and annual household income etc

2.2.3 Livestock and fixed capital (machinery) endowments

2.1 Overall description of the study region based on village listing schedule

In order to capture the spatial variation, Punjab has been divided into three homogeneous agro-climatic zones namely Zone ï I ,Zone -II and Zone- III based upon cropping pattern, soil type and physiography etc.

Zone -I ï This zone is also known as Kandi region with undulating topography. It constitutes about 17 percent of the geographical area of the state. The average rainfall of the zone is 1100 mm per annum. It has deep water table with rocky soils and diverse crops.

Zone ï I consists of two zones namely sub-mountainous undulating zone and undulating plain zone.

Sub-mountainous undulating zone**:** This zone accounts for about 9 percent of the total area of Punjab. The average rainfall is 900 mm and only 29 percent of the area is irrigated. Maize is the widely grown crop followed by paddy.

Undulating plain zone: This zone accounts for 8 percent of the area of the state. About 66 percent of the area in this zone is irrigated. Paddy and maize are the main crops of this zone.

Zone –II This zone is also called sweet water zone. It constitutes 47 percent of the total geographical area of the state. The average rainfall in this region is 769 mm per annum. The major cropping pattern in this zone is paddy- wheat rotation. The ground water is fit for irrigation except in some pockets where it is brackish.

Zone ï II consists of central plain zone and flood plain zone.

Central plain zone**:** The zone constitutes 36 percent of the area. The annual rainfall ranges from 500 mm to 800 mm. Paddy and wheat are the major crops.

Flood plain zone; This zone accounts for 11 percent of the geographical area of the state.

Zone-III This zone comprises the South-West cotton belt of Punjab. Wheat and cotton are the main crops and the ground water is marginally fir for irrigation. The annual rainfall varies between 400-500 mm. However, due to upward shifting of ground water in some parts of the areas paddy is also finding a place in this zone. This region covers about 39 percent of the area of the state. The problem of salinity, water logging and insect-pest attack on the cotton crop are the main problems of this zone.

2.2. Overview of the sample villages covering

2.2.1 Distribution of households in different landholding categories, average size of landholding (in hectares), irrigation status, land leasing status etc:

The perusal of Tables 2.2.1.1 and 2.2.1.2 reveals that of the total sample of 300 households, the number of marginal, small, medium, large and very large farmers were 103 (34.33%), 102 (34%), 52 (17.33%), 35 (11.67%) and 8 (2.67%) respectively. Overall, the average size of holding was 2.57 hectares while it varied from 0.77 hectares to 14.07 hectares across landholding categories . The average leased-in and leased-out land was 0.79 hectares and 0.003 hectares respectively. The results showed that the level of leasing in land increased with the farm size. The leasing out of land was more prevalent among the marginal category of households only. All the households had irrigated land, none of the farmers had land which was not irrigated.

Table 2.2.1.1: Distribution of households by landholding categories in Punjab, 2018-19.

Landholding categories	**Number of households**	**Percent**
Marginal	103	34.33
Small	102	34.00
Medium	52	17.33
Large	35	11.67
Very large	8	2.67
Total	**300**	**100.00**

Table 2.2.1.2: Average size of landholding in Punjab, 2018-19. **(ha)**

Landholding categories	Total landholding	Owned land	Leased-in land	Leased-out land	Irrigated land	Un-irrigated land
Marginal	0.77	0.75	0.03	0.01	0.77	-
Small	1.66	1.55	0.11	0.00	1.66	-
Medium	3.20	2.45	0.75	0.00	3.20	-
Large	6.96	3.87	3.09	0.00	6.96	-
Very large	14.07	4.81	9.26	0.00	14.07	-
Overall	**2.57**	**1.79**	**0.79**	**0.003**	**2.57**	**-**

2.2.2 Distribution of households by social groups, occupations and annual household income etc

From the total sample of 300 households the number of marginal, small, medium, large and very large farmers were 103 (34.33%), 102 (34%), 52 (17.33%), 35 (11.67%) and 8 (2.67%) respectively. Overall amongst 300 respondents, 267(89%) farmers belonged to general category followed by OBC (9%) and SC (2%). None of the respondent belonged to scheduled tribe. Across the landholding categories, among the marginal farmers, 82 farmers (79.61%) belonged to general category while in OBC and SC category the number of respondents were 15 (14.56%) and 6 (5.83%) respectively. It was observed that in other categories i.e. small, medium, large and very large, there were respondents who belonged to general as well as OBC category but no respondent was found belonging to SC and ST category. Majority of these households (87.50 % to 96.15%) belonged to general category (Table 2.2.2.1).

Cultivation was found to be the principal occupation of 282 respondents (94%) out of 300 respondents whereas farmers engaged in non-agriculture labour, salaried employment and remittances were 5 (1.67%), 12 (4%) and 1(0.33%) respectively (Table2.2.2.2). Across the land holding categories, on marginal farms 87 farmers (84.47%) were found engaged in cultivation while 5 (4.85%) and 10 (9.71 %) of the farmers were engaged in non-agriculture labour and salaried employment respectively. There were remittances availed by 0.97 percent of the marginal farmers. In case of small farmers, only 2 farmers (1.96%) were engaged in salaried employment while 100 famers (98.04%) adopted cultivation as their principal occupation. All the medium, large and very large farmers had cultivation as their principal occupation and none of these farmers were found engaged in any other occupation as their principal occupation.

Table 2.2.2.1: Distribution of households by social group across landholding categories in Punjab, 2018-19. (Number)

Landholding categories	Social group				
	Gen	OBC	SC	ST	Total
Marginal	82	15	6	-	103
%	79.61	14.56	5.83	-	100.00
Small	95	7	-	-	102
%	93.14	6.86	-	-	100.00
Medium	50	2	-	-	52
%	96.15	3.85			100.00
Large	33	2	-	-	35
%	94.29	5.71	-	-	100.00
Very large	7	1	-	-	8
%	87.50	12.50			100.00
Total	267	27	6	-	300
%	89.00	9.00	2.00	-	100.00

The annual household income from various sources across different landholding categories is shown in Table2.2.2.3. It was found that major source of their income was from cultivation followed by income from animal husbandry. The proportion of total income earned from cultivation varies between 88.90 per cent to 99.20 per cent among different landholding categories. The net income from animal husbandry varied between 0.80 per cent to 11.10 per cent among these said categories of households. Over all, the proportion of net income from cultivation from total income was 94.95 per cent while from animal husbandry the net income was 5.05 per cent. On an average, farmers received Rs 3.04 lakh as an annual net income from cultivation while from animal husbandry, annual net income received was Rs.16188. Across land holding categories, the highest net income from cultivation was received by very large farmers(Rs.15.27 lakh) while from animal husbandry , large farmers received the highest net income (Rs. 26520). The net annual income from cultivation varied between. Rs. 82919 to Rs. 15.27 lakh among different categories of landholdings and from animal husbandry, the annual net income was found varying between Rs. 7856 and Rs. 26520 among different farm categories.

Table 2.2.2.2: Distribution of households by principal occupation across landholding categories in Punjab, 2018-19. (Number)

Landholding categories	Principal occupation								
	Cultivation	Agri.lab	Dairy	Non-agri.lab	Self-emp	Salaried emp	Remittances	Forestry	Total
Marginal	87	-	-	5	-	10	1	-	103
%	84.47	-	-	4.85	-	9.71	0.97	-	100.00
Small	100	-	-	-	-	2	-	-	102
%	98.04	-	-	-	-	1.96	-	-	100.00
Medium	52	-	-	-	-	-	-	-	52
%	100.00	-	-	-	-	-	-	-	100.00
Large	35	-	-	-	-	-	-	-	35
%	100.00	-	-	-	-	-	-	-	100.00
Very large	8	-	-	-	-	-	-	-	8
%	100.00	-	-	-	-	-	-	-	100.00
Total	282	-	-	5	-	12	1	-	300
%	94.00	-	-	1.67	-	4.00	0.33	-	100.00

Table 2.2.2.3: Annual household income from various sources across the landholding categories in Punjab, 2018-19. (Rs)

Landholding categories	Net income (ROVC)* from cultivation	Percent	Net income (ROVC)* from animal husbandry	Percent	Income from wage labour	Percent	Total	Percent
Marginal	82919	91.35	7856	8.66	-	-	90775	100.00
Small	188907	88.90	23576	11.10	-	-	212483	100.00
Medium	409852	97.20	11848	2.81	-	-	421699	100.00
Large	858215	97.00	26520	3.00	-	-	884735	100.00
Very large	1527274	99.20	12296	0.80	-	-	1539570	100.00
Total/overall	304591	94.95	16188	5.05	-	-	320779	100.00

Note: Net income is calculated as a difference between total value of the product and expenses (variable) incurred
*** ROVC=Returns over variable cost**

2.2.3 Livestock and fixed capital (machinery) endowments

All the households among landholding categories were found having the possession of livestock. But more number of small farmers (109) were having livestock followed by marginal (85), medium (65) and large farmers (46). Less number of very large farmers (13) were observed to have livestock with them. It was also found that households among all the categories were possessing only milch animals i.e. milch cows and milch buffaloes. On the whole , 41.83 percent and 58.17 percent of the farmers had the possession of milch cows and milch buffaloes respectively. None of the households had the possession of goat, sheep and poultry (Table 2.2.3.1). Across land holding categories, milch cows were reared by more of small farmers (47 %) and least by medium farmers (34%) while milch buffaloes were reared by more percentage (66%) of medium farmers followed by marginal (60%), large (57%),very large(53.84%) and small farmers(53%) respectively.

Table 2.2.3.1: Distribution of households by livestock possession across landholding categories in Punjab, 2018-19. (Number)

Landholding categories	Households owning livestock					
	Milch cows	Milch buffaloes	Goats	Sheep	Poultry	Total
Marginal	34 (40.0)	51 (60.0)	-	-	-	85 (100.0)
Small	51 (47.0)	58 (53.0)	-	-	-	109 (100.0)
Medium	22 (34.0)	43 (66.0)	-	-	-	65 (100.0)
Large	20 (43.0)	26 (57.0)	-	-	-	46 (100.0)
Very large	6 (46.16)	7 (53.84)	-	-	-	13 (100.0)
Total	133 (41.83)	185 (58.17)	-	-	-	318 (100.0)

Figures in the parentheses are the percentages to total

The perusal of Table 2.2.3.2 shows that the sample respondents had possession of electric pumps, bullock carts, tractors with them. None of the farmers was found having thresher and combine harvester.

The use of farm equipment and machineries has direct bearing on the cost of production and productivity of crops. Mechanization has contributed significantly in the increasing agricultural production of the state. It increases the speed of completion of agricultural operations, reducing labour costs and increases the productivity of land and

labour. Amongst the 473 households who were having the possession of farm machinery and equipment., the number of households having electric motors , bullock carts and tractors were 239(51%), 63(13%) and 171(36%) respectively. Across the land holding categories, electric pumps were possessed by more of marginal farmers(62%) followed by small(58%),medium(43%) large(39%) and very large farmers(36%).The bullock carts were possessed by 6 percent, 8 percent , 17 percent ,22 percent and 28 percent of the farmers of the respective land holding categories. More number of medium farmers(40 %) were having the possession of tractors followed by large(39%), very large(36%), small(34%) and marginal farmers(32%) respectively.

Table 2.2.3.2: Distribution of households by farm machinery/equipment possession across landholding categories in Punjab, 2018-19. (Number)

Landholding categories	Households having farm mach/equip (purchased/shared/taken on rent)								
	Tube wells	Bore well	Electric pump	Diesel pump	Bullock cart	Tractor	Thresher	Combine harvester	Total
Marginal	-	-	53 (62.0)	-	5 (6.0)	27 (32.0)	-	-	85 (100.0)
Small	-	-	91 (58.0)	-	12 (8.0)	53 (34.0)	-	-	156 (100.0)
Medium	-	-	52 (43.0)	-	20 (17.0)	48 (40.0)	-	-	120 (100.0)
Large	-	-	35 (39.0)	-	20 (22.0)	35 (39.0)	-	-	90 (100.0)
Very large	-	-	8 (36.0)	-	6 (28.0)	8 (36.0)	-	-	22 (100.0)
Total	-	-	239 (51.0)	-	63 (13.0)	171 (36.0)	-	-	473 (100.0)

Figures in the parentheses are the percentages to total

CHAPTER 3

CROP AND INPUT MARKETS

This chapter has been discussed under the following heads:

3.1 Distribution of households growing different crops; average area and yield of different crops

3.2 Value of the output and marketed surplus; main marketing channels; reasons for dissatisfaction with sale; whether the price received is adequate and reasons if not

3.3 Details of all the inputs used and their procurement channels (farm saved, purchased etc)

3.4 Expenditure incurred and quality of inputs

3.5 Whether price paid for inputs is reasonable and reasons if not

3.1 Distribution of households growing different crops; average area and yield of different crops

The perusal of table 3.1.1 reveals that wheat was grown by all the respondent farmers i.e. 300 farmers (26.64%) while paddy was grown by 227 farmers (20.16%). The other crops i.e. maize, cotton, sugarcane, kharif fodder, potato, mungbean, spring maize rabi fodder were grown by 70 (6.22%), 16 (1.42%), 6 (0.53%), 234 (20.78%), 23 (2.04%) 7(0.62%), 9 (0.80%) and 234 (20.78) households respectively in the study area. Across the landholding categories, majority of the large farmers (23.18%) cultivated paddy while wheat was grown by majority of the marginal farmers(30.12%). Maize was grown by 11.11 percent, 7.69 percent and 1.38 percent of marginal, small and medium farmers respectively. Majority of the medium farmers (1.83%) cultivated cotton as compared to the farmers of other landholding categories i.e. marginal(1.46%), small(1.33%) and large farmers(1.32%) respectively. Sugarcane, kharif fodder, wheat, potato mungbean spring maize and rabi fodder was cultivated by 0.66 percent , 19.87 percent, 23.18 percent, 6.62 percent, 3.31 percent,1.99 percent and 19.87 percent of the large farmers. The area was brought under cultivation of 21.05 percent each for paddy, kharif fodder, wheat, and rabi fodder by very large farmers besides sugarcane and potato (5.26 % each) , mungbean and spring maize (2.63 % each) was also cultivated by very large farmers.

Overall, the gross cropped area was to the tune of 1569.23 hectares of which 620.09 hectares was brought under paddy crop followed by maize (75.47 ha), cotton (9.36ha), sugarcane (16.80 ha) and kharif fodder (49.69 ha) in kharif season (Table 3.1.2). The area cultivated under wheat crop was 669.89 hectares followed by potato (43.62 ha), rabi fodder (49.69 ha), mungbean (24.09 ha) and spring maize (10.93 ha) in rabi season.

The cropping pattern across landholding categories prescribed in Table 3.1.2 depicts that paddy and wheat were the major kharif and rabi crops as these were found to be 39.51 per cent and 42.68 per cent of the gross cropped area followed by maize (4.80%), rabi fodder (3.17%), potato (2.78%) mungbean (1.52%), sugarcane (1.07 %), cotton (0.60%) respectively. Maize was found to be the next important crop grown by the respondent farmers after wheat and paddy crops. The area under paddy and wheat was 26.07 percent and 44.62 percent of the gross cropped area on marginal farms while the area under other crops viz. maize cotton, kharif fodder, rabi fodder was 17.05 percent, 1.50 percent, 5.38 percent, and 5.38 percent of the gross cropped area on these farms. It was observed that marginal farmers did not cultivate sugarcane and potato crops. On small farms, area under paddy and wheat was 31.88 percent and 44.30 percent as compared to maize (11.60%), cotton (0.95%), sugarcane (0.24%), kharif fodder (4.79%), potato(1.33%), rabi fodder (4.79%) and spring maize (0.12%). The area under paddy was found more on large farms (45.10%) followed by very large farms(44.42%) while on medium farms area under wheat was more i.e. 43. 48 percent of their gross cropped area. It was observed that marginal, small and medium farmers cultivated more area under wheat and paddy crops followed by maize and cotton crops while large and very large farmers besides growing wheat and paddy preferred to cultivate potato and mungbean crop. Maize crop was not cultivated by large and very large farmers in the study area.

Table 3.1.1: Cropping pattern across the landholding categories in Punjab, 2018-19.

Landholding categories	Number of households growing different crops										
	Paddy	Maize	Cotton	Sugarcane	Kharif fodder	Wheat	Potato	Mungbean	Spring maize	Rabbi fodder	Total
Marginal	62	38	5	-	67	103	-	-	-	67	342
%	18.13	11.11	1.46	-	19.59	30.12	-	-	-	19.59	100.00
Small	73	29	5	1	81	102	4	-	1	81	377
%	19.36	7.69	1.33	0.27	21.49	27.06	1.06	-	0.27	21.49	100.00
Medium	49	3	4	2	48	52	7	1	4	48	218
%	22.48	1.38	1.83	0.92	22.02	23.85	3.21	0.46	1.83	22.02	100.00
Large	35	-	2	1	30	35	10	5	3	30	151
%	23.18	-	1.32	0.66	19.87	23.18	6.62	3.31	1.99	19.87	100.00
Very large	8	-	-	2	8	8	2	1	1	8	38
%	21.05	-	-	5.26	21.05	21.05	5.26	2.63	2.63	21.05	100.00
Total	227	70	16	6	234	300	23	7	9	234	1126
%	20.16	6.22	1.42	0.53	20.78	26.64	2.04	0.62	0.80	20.78	100.00

Table 3.1.2: Cropping pattern across the landholding categories in Punjab, 2018-19.

Landholding categories	Area under the crops (ha)										
	Paddy	Maize	Cotton	Sugarcane	Kharif fodder	Wheat	Potato	Rabbi fodder	Mungbean	Spring maize	GCA
Marginal	41.40	27.09	2.38	0.00	8.54	70.86	0.00	8.54	-	-	158.81
Small	109.02	39.68	3.24	0.81	16.39	151.53	4.55	16.39	-	0.40	342.01
Medium	142.15	8.70	2.53	1.82	11.40	147.51	7.89	11.40	1.82	4.05	339.27
Large	228.24	-	1.21	4.05	10.22	209.21	22.67	10.22	15.79	4.45	506.06
Very large	99.29	-	-	10.12	3.14	90.79	8.50	3.14	6.48	2.02	223.48
Overall	620.09	75.47	9.36	16.80	49.69	669.89	43.62	49.69	24.09	10.93	1569.63
Percent to total cropped area											
Marginal	26.07	17.05	1.50	-	5.38	44.62	-	5.38	-	-	100.00
Small	31.88	11.60	0.95	0.24	4.79	44.30	1.33	4.79	-	0.12	100.00
Medium	41.90	2.55	0.75	0.54	3.36	43.48	2.33	3.36	0.54	1.19	100.00
Large	45.10	-	0.24	0.80	2.02	41.34	4.48	2.02	3.12	0.88	100.00
Very large	44.42	-	-	4.53	1.41	40.63	3.80	1.41	2.90	0.90	100.00
Overall	39.51	4.80	0.60	1.07	3.17	42.68	2.78	3.17	1.52	0.70	100.00

:

The yield per hectare of different crops is presented in Table 3.1.3. The average yield per hectare of paddy and wheat was 7220 kgs and 4665 kgs respectively, while the yield of maize, cotton, sugarcane, potato, mungbean and spring maize was 3063 kgs, 2211 kgs, 75618 kgs, 28809kgs, 1362 kgs and 7538 kgs respectively. The average yield of paddy, wheat and sugarcane was found more on very large farms i.e. 7367 kgs, 4796kgs and 79040 kgs respectively.

Table 3.1.3: Yield of different crops across the landholding categories in Punjab, 2018-19.

Landholding categories	Yield (kg per ha)							
	Paddy	**Maize**	**Cotton**	**Sugarcane**	**Wheat**	**Potato**	**Mungbean**	**Spring maize**
Marginal	7356	3376	2104	-	4361	-	-	-
Small	7011	2934	2223	71630	4516	12899	-	6175
Medium	7126	2677	2055	67239	4705	21913	1647	8028
Large	7290	-	2717	71630	4791	31801	1279	7275
Very large	7367	-	-	79040	4796	35756	1482	7410
Overall	7220	3063	2211	75618	4665	28809	1362	7538

3.2 Value of the output and marketed surplus; main marketing channels; reasons for dissatisfaction with sale; whether the price received is adequate and reasons if not

The value of crops produced is presented in Table 3.2.1. The total value of all crops produced by all the sampled farmers came out to be of Rs, 16.03 crore. The total value of paddy was found highest i.e. Rs. 7.92 crore followed by wheat (Rs. 6.34 crore) potato (Rs.63.81 lakh) sugarcane (Rs 41.01 lakh) , maize(Rs. 30.53 lakh) , mungbean (Rs. 16.37 lakh) , spring maize (Rs.13. 49 lakh) , cotton (Rs. 11.51 lakh) respectively. Across landholding categories, the highest value of paddy and wheat was received by large farmers i.e. Rs 2.94 crore and Rs. 2.02 crore respectively. For maize and cotton, the total value was found highest on small farms with value of Rs. 15.31 lakh and Rs 4 lakh respectively as compared to the farmers of other landholding categories. The total value of sugarcane was estimated highest on very large farms (Rs. 25.78 lakh). For potato and mungbean, the value was estimated highest on large farms (Rs. 34. 64 lakh and Rs. 10.12 lakh respectively) while for spring maize produce the value was found highest on small farms (Rs. 5.40 lakh)

Per farm value of the crops produced on marginal, small, medium, large and very large farms was worked out to be Rs. 1.27 lakh, Rs 2.95 lakh, Rs. 6.66 lakh, Rs. 15.96 lakh , Rs 33.15 lakh respectively (Table 3.2.1). Overall, per farm value of the crops produced came out to be Rs. 5.34 lakh and from paddy and wheat average value was estimated to be Rs. 2.64 lakh and Rs.2.11 lakh respectively while from other crops viz. maize, cotton , sugarcane, potato , mungbean and spring maize, the average value per farm was Rs. 10177, Rs. 3839, Rs. 13671. Rs. 21271, Rs. 5458 and Rs. 4500 respectively. Per farm value of paddy on very large farms was found highest (Rs. 16.18 lakh) followed by large (Rs. 8.42 lakh), medium (Rs. 3.44 lakh), small(Rs. 1.32 lakh) and marginal (Rs. 52328) respectively. In case of wheat , per farm value of the produce was found highest on very large farms (Rs. 11.04 lakh) and least was found on marginal farms (Rs. 61089). From maize, per farm value of the produce was estimated highest on small farms (Rs. 15013) as compared to the farms of other landholding categories.

The total sale value of crops is presented in Table 3.2.2(a). The total sale value from paddy crop was Rs.7.90 crore and from maize, cotton sugarcane, wheat, potato, mungbean and spring maize, the total sale value of the crop was Rs.26.78 lakh, Rs.10.99 lakh, Rs.35.38 lakh, Rs.5.02 crore, Rs53.36 lakh, Rs.15.55lakh and Rs.12.33 lakh respectively. Across land holding categories, the highest sale value of paddy crop was received by large farmers (Rs 2.94 crore) followed by medium (Rs 1.78 crore), small (Rs 1.34 crore), very large (Rs 1.29 crore) and marginal farmers (Rs 53.8 lakh) respectively. For

the produce of maize, small farmers received the highest sale value i,e, Rs 13.57 lakh followed by marginal (Rs 10.46 lakh), and medium farmers(Rs 2.74 lakh). Large farmers received the highest total sale value for the wheat crop (Rs 1.67 crore) , potato (Rs 30.03 lakh) and mungbean crop (Rs 9.55 lakh) than the farmers of other land holding categories.

Per hectare sale value of different crops is presented in table 3.2.2(b). For paddy , maize, cotton, sugarcane, wheat, potato ,mungbean and spring maize, the per hectare sale value was worked out to Rs. 1.27 lakh, Rs 35491, Rs 1.17 lakh, Rs 2.10 lakh, Rs 75081, Rs 1.22 lakh, Rs 64584 and Rs 1.12 lakh respectively.

Per farm sale value of different crops is presented in table 3.2.2(c). For paddy, maize, cotton, sugarcane, wheat, potato, mungbean and spring maize. the per farm sale value was estimated to the tune of Rs.2.63 lakh , Rs.8928 , Rs 3666 , Rs.11796 , Rs.1.67 lakh , Rs.17879, Rs.5186 and Rs.4112 respectively.

All the sampled farmers sold their crops in their first disposal and none of the farmers used second and third disposal for selling their crops. A perusal of Tables 3.2.3 to3.2.10 reveals that all the paddy growers (227) and wheat growers (300) sold their paddy and wheat crop to the cooperative and government agency while maize, cotton, mungbean and spring maize was sold to processors and potato was sold to regional traders and local private traders by the sampled farmers respectively. The paddy crop was sold by 27.32 percent, 32 16 percent , 21 58 percent , 15.42 percent and 3.52 percent of the marginal, small, medium, large and very large farmers respectively. All the maize growers i.e. 38 marginal (54.28%), 29 small (41.42%), and 3 medium (4.28%) thus a total of 70 farmers sold their maize produce in mandi. Cotton crop was sold in mandi by each of 5 (31.25% each) marginal and small,4 medium (25%) and 2 large farmers(12.50%) . Sugarcane was sold to processors by all the sugarcane growers i.e. 1 small (16.66%), 2 medium (33.33%), 1 large(16.66%) and 2 very large farmer (33.33%)s. Potato was sold by 4 small (19.09%), 7 medium (33.33%), 8 large (38.09%) and 2 very large farmers (9.52%) to the regional traders while 2 of the large farmers also sold potato to local private traders. The mungbean crop was sold in mandi by 1 (11.11%), 5 (44.44%) and 1(11.11%) medium, large and very large farmers respectively. Further, spring maize was sold in mandi by all the spring maize growers i.e. 1 small, (11.11%), 4 medium (44.44%), 3 large (33.33 %), and 1 very large farmer (11.11%).

Table 3.2.1: Value of crops produced in Punjab, 2018-19.

Landholding categories	Paddy	Maize	Cotton	Sugarcane	Wheat	Potato	Mungbean	Spring maize	Total
Total value of crops (Rs)									
Marginal	5389792	1216445	274800	-	6292213	-	-	-	13173249
Small	13529154	1531280	400760	189660	13906518	507850	-	40500	30105722
Medium	17928065	305362	295850	399400	14088534	966800	148500	540250	34672761
Large	29475043	-	180400	933800	20284773	3464900	1012700	526100	55877716
Very large	12946665	-	-	2578340	8835760	1441600	476300	243000	26521665
Total	79268718	3053087	1151810	4101200	63407798	6381150	1637500	1349850	160351113
Average value of crops produced (Rs/farm)									
Marginal	52328	11810	2668	-	61089	-	-	-	127896
Small	132639	15013	3929	1859	136338	4979	-	397	295154
Medium	344770	5872	5689	7681	270933	18592	2856	10389	666784
Large	842144	-	5154	26680	579565	98997	28934	15031	1596506
Very large	1618333	-	-	322293	1104470	180200	59538	30375	3315208
Overall	264229	10177	3839	13671	211359	21271	5458	4500	534504

Table 3.2.2(a): Total sale value of crops produced in Punjab, 2018-19. **(Rs)**

Landholding categories	Paddy	Maize	Cotton	Sugarcane	Wheat	Potato	Mungbean	Spring maize	Total
Marginal	5380588	1046250	262600	-	3709366	-	-	-	10398804
Small	13466319	1357420	384160	159650	10140277	391270	-	33000	25932096
Medium	17881337	274800	280200	331855	12095084	791530	141600	494000	32290406
Large	29409170	-	172900	790500	16764700	3003836	955825	483000	51579931
Very large	12941355	-	-	2256800	7586320	1177200	458400	223500	24643575
Total	79078768	2678470	1099860	3538805	50295747	5363836	1555825	1233500	144844812

Table :3.2.2(b) Per hectare sale value of crops produced in Punjab, 2018-19. **(Rs)**

Landholding categories	Paddy	Maize	Cotton	Sugarcane	Wheat	Potato	Mungbean	Spring maize	Overall
Marginal	129966	38621	110336	-	52348	-	-	-	73371
Small	123522	34209	118568	197099	66919	85993	-	82500	83860
Medium	125792	31586	110751	182338	81995	100321	77802	121975	102033
Large	128852	-	142893	195185	80133	132503	60534	108539	106215
Very large	130339	-	-	223004	83559	138494	70741	110644	113460
Overall	127528	35491	117506	210643	75081	122967	64584	112855	98517

Table :3.2.2(c) Per farm sale value of crops produced in Punjab, 2018-19. (Rs)

Landholding categories	Paddy	Maize	Cotton	Sugarcane	Wheat	Potato	Mungbean	Spring maize	Total
Marginal	52239	10158	2550	-	36013	-	-	-	100959
Small	132023	13308	3766	1565	99414	3836	-	324	254236
Medium	343872	5285	5388	6382	232598	15222	2723	9500	620969
Large	840262	-	4940	22586	478991	85824	27309	13800	1473712
Very large	1617669	-	-	282100	948290	147150	57300	27938	3080447
Overall	263596	8928	3666	11796	167652	17879	5186	4112	482816

Table 3.2.3: Agencies through which paddy crop was sold in first major disposal in Punjab, 2018-19. **(Number)**

Landholding categories	Local private	Mandi	Input dealers	Cooperative & govt agency	Processors	Others	Total
Marginal	-	-	-	62 (27.32)	-	-	62 (27.32)
Small	-	-	-	73 (32.16)	-	-	73 (32.16)
Medium	-	-	-	49 (21.58)	-	-	49 (21.58)
Large	-	-	-	35 (15.42)	-	-	35 (15.42)
Very large	-	-	-	8 (3.52)	-	-	8 (3.52)
Total	-	-	-	227 (100.0)	-	-	227 (100.0)

Figures in the parentheses are the percentages to total

Table 3.2.4: Agencies through which maize crop was sold in first major disposal in Punjab, 2018-19. **(Number)**

Landholding Categories	Local private	Mandi	Input dealers	Cooperative & govt agency	Processors	Others	Total
Marginal	-	38 (54.28)	-	-	-	-	38 (54.28)
Small	-	29 (41.42)	-	-	-	-	29 (41.42)
Medium	-	3 (4.28)	-	-	-	-	3 (4.28)
Large	-	-	-	-	-	-	-
Very large	-	-	-	-	-	-	-
Total	-	70 (100.00)	-	-	-	-	70 (100.00)

Figures in the parentheses are the percentages to total

Table 3.2.5: Agencies through which cotton crop was sold in first major disposal in Punjab, 2018-19. **(Number)**

Landholding Categories	Local private	Mandi	Input dealers	Cooperative & govt agency	Processors	Others	Total
Marginal	-	5 (31.25)	-	-	-	-	5 (31.25)
Small	-	5 (31.25)	-	-	-	-	5 (31.25)
Medium	-	4 (25.00)	-	-	-	-	4 (25.00)
Large	-	2 (12.50)	-	-	-	-	2 (12.50)
Very large	-	-	-	-	-	-	-
Total	-	16 100.00)	-	-	-	-	16 (100.00)

Figures in the parentheses are the percentages to total

Table 3.2.6: Agencies through which sugarcane crop was sold in first major disposal in Punjab, 2018-19. **(Number)**

Landholding Categories	Local private	Mandi	Input dealers	Cooperative & Govt agency	Processors	Others	Total
Marginal	-	-	-	-	-	-	-
Small	-	-	-	-	1 (16.66)	-	1 (16.66)
Medium	-	-	-	-	2 (33.33)	-	2 (33.33)
Large	-	-	-	-	1 (16.66)	-	1 (16.66)
Very large	-	-	-	-	2 (33.33)	-	2 (33.33)
Total	-	-	-	-	6 (100.00)	-	6 (100.00)

Figures in the parentheses are the percentages to total

Table 3.2.7: Agencies through which wheat crop was sold in first major disposal in Punjab, 2018-19. **(Number)**

Landholding Categories	Local private	Mandi	Input dealers	Cooperative & govt agency	Processors	Others	Total
Marginal	-	-	-	103 (34.33)	-	-	103 (34.33)
Small	-	-	-	102 (34.00)	-	-	102 (34.00)
Medium	-	-	-	52 (17.33)	-	-	52 (17.33)
Large	-	-	-	35 (11.66)	-	-	35 (11.66)
Very large	-	-	-	8 (2.66)	-	-	8 (2.66)
Total	-	-	-	300 (100.00)	-	-	300 (100.00)

Figures in the parentheses are the percentages to total

Table 3.2.8: Agencies through which potato crop was sold in first major disposal in Punjab, 2018-19. **(Number)**

Landholding categories	Local private	Mandi	Input dealers	Cooperative & govt agency	Processors	Regional trader	Total
Marginal	-	-	-	-	-	-	-
Small	-	-	-	-	-	4 (19.04)	4 (17.39)
Medium	-	-	-	-	-	7 (33.33)	7 (30.43)
Large	2 (100.00)	-	-	-	-	8 (38.09)	10 (43.47)
Very large	-	-	-	-	-	2 (9.52)	2 (8.69)
Total	2 (100.00)	-	-	-	-	21 (100.00)	23 (100.00)

Figures in the parentheses are the percentages to total

Table 3.2.9: Agencies through which mungbean crop was sold in first major disposal in Punjab, 2018-19. **(Number)**

Landholding Categories	Local private	Mandi	Input dealers	Cooperative & Govt agency	Processors	Others	Total
Marginal	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-
Medium	-	1 (14.28)	-	-	-	-	1 (14.28)
Large	-	5 (71.42)	-	-	-	-	5 (71.42)
Very large	-	1 (14.28)	-	-	-	-	1 (14.28)
Total	-	7 (100.00)	-	-	-	-	7 (100.00)

Figures in the parentheses are the percentages to total

Table 3.2.10: Agencies through which spring maize crop was sold in first major disposal in Punjab, 2018-19. **(Number)**

Landholding categories	Local private	Mandi	Input dealers	Cooperative & govt agency	Processors	Others	Total
Marginal	-	-	-	-	-	-	-
Small	-	1 (11.11)	-	-	-	-	1 (11.11)
Medium	-	4 (44.44)	-	-	-	-	4 (44.44)
Large	-	3 (33.33)	-	-	-	-	3 (33.33)
Very large	-	1 (11.11)	-	-	-	-	1 (11.11)
Total	-	9 (100.00)	-	-	-	-	9 (100.00)

Figures in the parentheses are the percentages to total

Satisfaction/Dissatisfaction regarding disposal channels and reasons for dissatisfaction there of :

The satisfaction /dissatisfaction regarding disposal channels for selling their produce revealed by the farmers is presented in Table3.2.11 to Table 3.2.13. All the paddy farmers (100%) were satisfied with the disposal channels of their produce. In case of maize crop, on the whole 32 farmers (45.71 %) were satisfied with the disposal channels, out of which, amongst different land holding categories, 60.53 percent, 27.59 percent and 33.33 percent of marginal, small and medium farmers were satisfied regarding disposal channels of maize. The dissatisfaction regarding the disposal channels for sale of their crops was revealed by 38 farmers (54.29 %) for getting the price lower than the market price. This was revealed by

39.47 percent, 72.41 percent and 66.67 percent of marginal, small and medium farmers respectively.

In case of cotton crop, out of 16 cotton growers, only 2 farmers were satisfied with the disposal channels for selling their produce of cotton. Rest of the 14 farmers (87.50%) were dissatisfied with the disposal channels of cotton crop as they received lower price than the market price. This reason for dissatisfaction regarding disposal channels were revealed by 100 percent each of small, medium and large farmers and 60 percent of the marginal farmers(Table 3.2.11).

Only one sugarcane farmer (16.67%)out of 6 sugarcane growers revealed satisfaction over the disposal channels for sugarcane crop while 5 farmers(83.33 %) were dissatisfied with the disposal channel for getting lower price than the market price for sugarcane produce. This was revealed by 100 percent each of medium, large and very large farmers. In case of wheat crop, all the wheat growers (100%) were satisfied with the disposal channels of wheat.

In case of potato, all the 23 potato growers (100%) revealed dissatisfaction with the disposal channels for receiving lower price than the market price for potato produce. This was reported by 100 percent each of small, medium and very large farmers(Table 3.2.12).

All the mungbean growers were dissatisfied with the disposal channels for receiving lower price than the market price for mungbean crop and this was reported by 100 percent each of the medium , large and very large farmers.

In case of spring maize, 33.33 percent of the farmers were satisfied with the disposal channels while 66.67 percent of the farmers revealed dissatisfaction with the disposal channels for receiving lower price than the market price of their spring maize produce (Table 3.2.13).

Table: 3.2.11 Reasons for dissatisfaction regarding disposal channels of paddy, maize and cotton crop in Punjab, 2018-19. **(Number)**

Landholding categories	Satisfactory	Lower than market price	Delayed payments	Deductions for loans borrowed	Faulty weighing and grading	Total
Paddy						
Marginal	62	-	-	-	-	62
%	100.0	-	-	-	-	100.0
Small	73	-	-	-	-	73
%	100.0	-	-	-	-	100.0
Medium	49	-	-	-	-	49
%	100.0	-	-	-	-	100.0
Large	35	-	-	-	-	35
%	100.0	-	-	-	-	100.0
Very large	8	-	-	-	-	8
%	100.0	-	-	-	-	100.0
Total	227	-	-	-	-	227
%	100.0	-	-	-	-	100.0
Maize						
Marginal	23	15	-	-	-	38
%	60.53	39.47	-	-	-	100.0
Small	8	21	-	-	-	29
%	27.59	72.41	-	-	-	100.0
Medium	1	2	-	-	-	3
%	33.33	66.67	-	-	-	100.0
Large	-	-	-	-	-	-
%	-	-	-	-	-	-
Very large	-	-	-	-	-	-
%	-	-	-	-	-	-
Total	32	38	-	-	-	70
%	45.71	54.29	-	-	-	100.0
Cotton						
Marginal	2	3	-	-	-	5
%	40.0	60.0	-	-	-	100.0
Small	-	5	-	-	-	5
%	-	100.0	-	-	-	100.0
Medium	-	4	-	-	-	4
%	-	100.0	-	-	-	100.0
Large	-	2	-	-	-	2
%	-	100.0	-	-	-	100.0
Very large	-	-	-	-	-	-
%	-	-	-	-	-	-
Total	2	14	-	-	-	16
%	12.50	87.50	-	-	-	100.0

Table:3.2.12 Reasons for dissatisfaction regarding disposal channel of sugarcane, wheat and potato crop in Punjab, 2018-19. **(Number)**

Landholding categories	Satisfactory	Lower than market price	Delayed payments	Deductions for loans borrowed	Faulty weighing and grading	Total
Sugarcane						
Marginal	-	-	-	-	-	-
%	-	-	-	-	-	-
Small	1	-	-	-	-	1
%	100.0	-	-	-	-	100.0
Medium	-	2	-	-	-	2
%	-	100.0	-	-	-	100.0
Large	-	1	-	-	-	1
%		100.0	-	-	-	100.0
Very large	-	2	-	-	-	2
%	-	100.0	-	-	-	100.0
Total	1	5	-	-	-	6
%	16.67	83.33	-	-	-	100.0
Wheat						
Marginal	103	-	-	-	-	103
%	100.0	-	-	-	-	100.0
Small	102	-	-	-	-	102
%	100.0	-	-	-	-	100.0
Medium	52	-	-	-	-	52
%	100.0	-	-	-	-	100.0
Large	35	-	-	-	-	35
%	100.0	-	-	-	-	100.0
Very large	8	-	-	-	-	8
%	100.0	-	-	-	-	100.0
Total	300	-	-	-	-	300
%	100.0	-	-	-	-	100.0
Potato						
Marginal	-	-	-	-	-	-
%		-	-	-	-	-
Small	-	4	-	-	-	4
%		100.0	-	-	-	100.0
Medium	-	7	-	-	-	7
%		100.0	-	-	-	100.0
Large	-	10	-	-	-	10
%	-	-	-	-	-	100.0
Very large	-	2	-	-	-	2
%		100.0	-	-	-	100.0
Total	-	23	-	-	-	23
%	-	100.0	-	-	-	100.0

Table: 3.2.13 Reasons for dissatisfaction regarding disposal channel of mungbean and spring maize crop in Punjab, 2018-19. (Number)

Landholding categories	Satisfactory	Lower than market price	Delayed payments	Deductions for loans borrowed	Faulty weighing and grading	Total
Mungbean						
Marginal	-	-	-	-	-	-
%	-	-	-	-	-	-
Small	-	-	-	-	-	-
%	-	-	-	-	-	-
Medium	-	1	-	-	-	1
%	-	100.0	-	-	-	100.0
Large	-	5	-	-	-	5
%		100.0	-	-	-	100.0
Very large	-	1	-	-	-	1
%		100.0	-	-	-	100.0
Total	-	7	-	-	-	7
%	-	100.	-	-	-	100.0
Spring maize						
Marginal	-	-	-	-	-	-
%	-	-	-	-	-	-
Small	1	-	-	-	-	1
%	100.0	-	-	-	-	100.0
Medium	-	4	-	-	-	4
%	-	100.0	-	-	-	100.0
Large	2	1	-	-	-	3
%	66.67	33.33	-	-	-	100.0
Very large	-	1	-	-	-	1
%	-	100.0	-	-	-	100.0
Total	3	6	-	-	-	9
%	33.33	66.67	-	-	-	100.0

Reasonable Prices for the crops:

The prices for the various crops availed were reasonable, regarding this opinion of the farmers has been presented in Table 3.2.14. About 73.12 per cent of the sampled farmers growing paddy out of 227 farmers revealed that prices which they received for paddy crop was reasonable. Out of the total farmers growing wheat, maize, cotton, sugarcane, spring maize, 79.66 percent, 45.71 percent, 12.5 percent, 16.00 percent, 16.00 percent respectively reported the prices as reasonable for their crops. None of the potato and mungbean farmers reported that the prices for these crops as reasonable. The paddy prices were revealed reasonable by majority of the marginal farmers (32.53 %) followed by small (31.93 %) , medium (18.67%), large (14.46%)and very large farmers(2.41 %). In case of maize, cotton, and wheat , the prices were reported as reasonable by 71.88 percent, 100 percent and 39.75

percent of the marginal farmers. Only few of large(14.46) and very large farmers(2.41) stated the price of paddy and in case of wheat crop, 10.04 percent and 1.67 percent of these farmers reported the prices as s reasonable.

Reasons for unreasonable prices:

The farmers reported the reasons for the unreasonable prices for their crops and the same has been presented in Table 3.2.15 to 3.2 22 separately for various crops. Overall, the major reasons revealed by the sampled farmers for unreasonable prices of wheat and paddy were high input costs (52.46%) and high lease rent (34.43%). For maize, cotton, potato and mungbean and spring maize, farmers revealed unreasonable prices as there was no procurement of these crops by the government agencies. High input costs for unreasonable prices for paddy crop were revealed by 75 percent of the marginal farmers followed by small (60%), medium (50%) and large farmers (45.45%).None of the very large farmer revealed the high cost of inputs for unreasonable price for paddy crop. But high lease rent was reported as the reason for unreasonable paddy price by 75 percent of the very large farmers along with marginal (25%), small (30%), medium (27.78%) and large farmers (45.45%) respectively. Both high input cost and high lease rent was revealed by 10 percent, 22.22 percent, 9.09 percent and 25 percent of the small, medium, large and very large farmers respectively for unreasonable paddy price (Table3.2.15)

The prices were considered unreasonable for maize crops (Table3.2.16) due to no government purchase and high input costs by 78 95 percent and 21.05 percent of the maize growers. The marginal (73.33%), small (85.71%) and medium farmers (50%) revealed maize prices as unreasonable due to no purchase of the crop by government agencies. High input cost for unreasonable prices were revealed by 26.67 percent, 14.29 percent and 50 percent of the farmers of the respective categories.

Majority of the cotton growers (81.25%) revealed that the crop was not purchased by the government and they got less price for their produce, Another reason for unreasonable cotton price revealed by 6.25 percent of the farmers was collusion of private buyers, Both high input costs and high lease rent and both no government purchase and high lease rent was revealed by each 6.25 percent of the farmers. No government purchase of cotton was reported as the reason for unreasonable cotton price by 100 percent, 60 percent, 75 percent and 100 percent of the marginal, small, medium and large farmers respectively. Collusion of private buyers and both no government purchase and high lease rent was reported by each 20 percent of the marginal and small farmers respectively while 25 percent of the medium farmers considered both high input costs and high lease rent for unreasonable cotton prices (Table3.2.17).

Eighty percent of the sugarcane growers reported that sugarcane prices were unreasonable due to high input costs while 20 percent considered the prices as unreasonable due to both high input costs and high lease rent (Table3.2.18). Across the landholding categories, 100 percent each of the medium and large farmers and 50 percent of the very large farmers reported high input costs for unreasonable sugarcane prices, Both high input costs and high lease rent were reported as the reasons for unreasonable sugarcane prices by 50 percent of the very large farmers.

On the whole, wheat prices were considered unreasonable by the wheat growers due to high input cost (52.46 %) , high lease rent (34.43 %) and both high input costs and high lease rent (13.11%) respectively. Across land holding categories, majority of the marginal farmers (75%) revealed high input cost for unreasonable wheat prices while majority of the very large farmers (75%) reported high lease rent for unreasonable prices of wheat. Both high input costs and high lease rent were revealed as unreasonable wheat prices by 10 percent, 22.22 percent, 9.09 percent and 25 percent of the small, medium, large and very large farmers respectively (Table 3.2.19).

The prices for potato crop were reported as unreasonable due to no government purchase , no minimum fixed price, high input cost ,high lease rent ,both high input cost and high lease rent by 39.13 percent, 21.74 percent, 4.35 percent, 8.70 percent each of the farmers respectively of different landholding categories. Due to all the reasons stated above were revealed as the reasons by 17. 39 percent of the farmers for unreasonable prices of potato crop. Majority of the small farmers (50%) considered no minimum fixed price while 71.43 percent of the medium farmers opined no government purchase of the crop for unreasonable prices. Very large farmers were of the view that high input costs (50%) and high lease rent (50%) were the reasons for unreasonable potato prices (Table 3.2.20).

For mungbean crop, on the whole, 14.29 percent and 85 percent of the farmers respectively revealed very few buyers and no purchase of the crop by government agencies as the reasons for unreasonable crop prices. No government purchase was revealed by 100 percent each of the marginal and very large farmers and 80 percent of the large farmers while 20 percent of the large farmers also considered few buyers of the mungbean crop as the reasons for unreasonable mungbean prices (Table 3.2.21).

In the case of spring maize (Table 3.2.22)., no government purchase (66.66%) , high input cost(16.67%) , and both high input cost and high lease rent(16.67%) were revealed as the reasons for unreasonable spring maize prices. Majority of the medium (75%) and large

farmers(100%) considered no purchase of the crop by the government agencies while high input costs were reported by 25 percent of the medium farmers for unreasonable prices.

.

Table 3.2.14: Reasonable price received for the reported crops in Punjab, 2018-19.

Landholding categories	Price received for the crops reasonable															
	Paddy		Maize		Cotton		Sugarcane		Wheat		Potato		Mungbean		Spring maize	
	No.	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
Marginal	54	32.53	23	71.88	2	100.00	-	-	95	39.75	-	-	-	-	-	-
Small	53	31.93	8	25.00	-	-	1	100.00	82	34.31	-	-	-	-	1	33.33
Medium	31	18.67	1	3.13	-	-	-	-	34	14.23	-	-	-	-	-	-
Large	24	14.46	-	-	-	-	-	-	24	10.04	-	-	-	-	2	66.67
Very large	4	2.41	-	-	-	-	-	-	4	1.67	-	-	-	-	-	-
Total (%)	166 (73.12)	100.00	32 (45.71)	100.00	2 (12.50)	100.00	1 (16.0)	100.00	239 (79.66)	100.00	-	-	-	-	3 (16.0)	100.00

Table 3.2.15: Reasons for unreasonable prices received for the paddy crop in Punjab, 2018-19. **(Number)**

Landholding categories	Very few buyers	No government purchase	Private buyers collude	No minimum fixed price	All of the above	High input costs	High lease rent	Both high input costs and high lease rent	Total
Marginal	-	-	-	-	-	6	2	-	8
%	-	-	-	-	-	75.00	25.00	-	100.00
Small	-	-	-	-	-	12	6	2	20
%	-	-	-	-	-	60.00	30.00	10	100.00
Medium	-	-	-	-	-	9	5	4	18
%	-	-	-	-	-	50.00	27.78	22.22	100.00
Large	-	-	-	-	-	5	5	1	11
%	-	-	-	-	-	45.45	45.45	9.09	100.00
Very large	-	-	-	-	-		3	1	4
%	-	-	-	-	-	0.00	75.00	25.00	100.00
Total	-	-	-	-	-	32	21	8	61
%	-	-	-	-	-	52.46	34.43	13.11	100.00

Table 3.2.16: Reasons for unreasonable prices received for the maize crop in Punjab, 2018-19. **(Number)**

Landholding categories	Very few buyers	No government purchase	Private buyers collude	No minimum fixed price	All of the above	High input costs	High lease rent	Both high input costs and high lease rent	Total
Marginal	-	11	-	-	-	4	-	-	15
%	-	73.33	-	-	-	26.67	-	-	100.00
Small	-	18	-	-	-	3	-	-	21
%		85.71				14.29			100.00
Medium	-	1	-	-	-	1	-	-	2
%	-	50.00	-	-	-	50.00	-	-	100.00
Large	-	-	-	-	-	-	-	-	-
Very large	-	-	-	-	-	-	-	-	-
Total	-	30	-	-	-	8	-	-	38
%	-	78.95	-	-	-	21.05	-	-	100.00

Table 3.2.17: Reasons for unreasonable prices received for the cotton crop in Punjab, 2018-19. **(Number)**

Landholding categories	Very few buyers	No government purchase	Private buyers collude	No minimum fixed price	All of the above	High input costs	High lease rent	Both high input costs and high lease rent	Both no govt purchase and high lease rent	Total
Marginal	-	5	-	-	-	-	-	-	-	5
%	-	100.00	-	-	-	-	-	-	-	100.00
Small	-	3	1	-	-	-	-	-	1	5
%	-	60.00	20.00	-	-	-	-	-	20.00	100.00
Medium	-	3	-	-	-	-	-	1	-	4
%	-	75.00	-	-	-	-	-	25.00	-	100.00
Large	-	2	-	-	-	-	-	-	-	2
%	-	100.00	-	-	-	-	-	-	-	100.00
Very large	-	-	-	-	-	-	-	-	-	-
%	-	-	-	-	-	-	-	-	-	-
Total	-	13	1	-	-	-	-	1	1	16
%	-	81.25	6.25	-	-	-	-	6.25	6.25	100.00

Table 3.2.18: Reasons for unreasonable prices received for the sugarcane crop in Punjab, 2018-19. **(Number)**

Landholding categories	Very few buyers	No government purchase	Private buyers collude	No minimum fixed price	All of the above	High input costs	High lease rent	Both high input costs and high lease rent	Total
Marginal	-	-	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-	-	-
Medium	-	-	-	-	-	2	-	-	2
%	-	-	-	-	-	100.00	-	-	100.00
Large	-	-	-	-	-	1	-	-	1
%	-	-	-	-	-	100.00	-	-	100.00
Very large	-	-	-	-	-	1	-	1	2
%	-	-	-	-	-	50.00	-	50.00	100.00
Total	-	-	-	-	-	4	-	1	5
%	-	-	-	-	-	80.00	-	20.00	100.00

Table 3.2.19: Reasons for unreasonable prices received for the wheat crop in Punjab, 2018-19. **(Number)**

Landholding categories	Very few buyers	No government purchase	Private buyers collude	No minimum fixed price	All of the above	High input costs	High lease rent	Both high input costs and high lease rent	Total
Marginal	-	-	-	-	-	6	2	-	8
%	-	-	-	-	-	75.00	25.00	-	100.00
Small	-	-	-	-	-	12	6	2	20
%	-	-	-	-	-	60.00	30.00	10	100.00
Medium	-	-	-	-	-	9	5	4	18
%	-	-	-	-	-	50.00	27.78	22.22	100.00
Large	-	-	-	-	-	5	5	1	11
%	-	-	-	-	-	45.45	45.45	9.09	100.00
Very large	-	-	-	-	-	-	3	1	4
%	-	-	-	-	-	0.00	75.00	25.00	100.00
Total	-	-	-	-	-	32	21	8	61
%	-	-	-	-	-	52.46	34.43	13.11	100.00

Table 3.2.20: Reasons for unreasonable prices received for the potato crop in Punjab, 2018-19. **(Number)**

Landholding categories	Very few buyers	No government purchase	Private buyers collude	No minimum fixed price	All of the above	High input costs	High lease rent	Both high input costs and high lease rent	Total
Marginal	-	-	-	-	-	-	-	-	-
%	-	-	-	-	-	-	-	-	-
Small	-	1	-	2	1	-	-	-	4
%	-	25.00	-	50.00	25.00	-	-	-	100.00
Medium	-	5	-	1	1	-	-	-	7
%	-	71.43	-	14.29	14.29	-	-	-	100.00
Large	-	3	-	2	2	-	1	2	10
%	-	30.00	-	20.00	20.00	-	10.00	20.00	100.00
Very large	-	-	-	-	-	1	1	-	2
%	-	-	-	-	-	50.00	50.00		100.00
Total	-	9	-	5	4	1	2	2	23
%	-	39.12	-	21.74	17.39	4.35	8.70	8.70	100.00

Table 3.2.21: Reasons for unreasonable prices received for the mungbean crop in Punjab, 2018-19. **(Number)**

Landholding categories	Very few buyers	No government purchase	Private buyers collude	No minimum fixed price	All of the above	High input costs	High lease rent	Both high input costs and high lease rent	Total
Marginal	-	-	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-	-	-
Medium	-	1	-	-	-	-	-	-	1
%	-	100.00	-	-	-	-	-	-	100.00
Large	1	4	-	-	-	-	-	-	5
%	20.00	80.00	-	-	-	-	-	-	100.00
Very large	-	1	-	-	-	-	-	-	1
%	-	100.00	-	-	-	-	-	-	100.00
Total	1	6	-	-	-	-	-	-	7
%	14.29	85.71	-	-	-	-	-	-	100.00

Table 3.2.22: Reasons for unreasonable prices received for the spring maize crop in Punjab, 2018-19. **(Number)**

Landholding categories	Very few buyers	No government purchase	Private buyers collude	No minimum fixed price	All of the above	High input costs	High lease rent	Both high input costs and high lease rent	Total
Marginal	-	-	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-	-	-
Medium	-	3	-	-	-	1	-	-	4
%	-	75.00	-	-	-	25.00	-	-	100.00
Large	-	1	-	-	-	-	-	-	1
%	-	100.00	-	-	-	-	-	-	100.00
Very large	-	-	-	-	-	-	-	1	1
%	-	-	-	-	-	-	-	100.00	100.00
Total	-	4	-	-	-	1	-	1	6
%	-	66.66	-	-	-	16.67	-	16.67	100.00

3.3 Details of all the inputs used and their procurement channels (farm saved, purchased etc)

The farmers procured seed for various crops & it has been presented in Table 3.3.1 to Table 3.3.6. It was found that majority of paddy farmers (84.58%) purchased the paddy seed while 35 (15.42%) farmers used farm saved seeds for paddy crop. Majority of the paddy farmers (81.50%) purchased the seeds from input dealers while the others (3.08%) purchased from local traders.. All the farmers who were growing maize, cotton, mungbean used only purchased seeds which they procured from input dealers as well as local traders. Out of 70 maize farmers 36 farmers (51.43%) purchased seeds from input dealers while 34 farmers (48.57%) purchased maize seeds from local traders. Similarly all the cotton farmers (16) used purchased seeds and out of these 16 cotton farmers 15 farmers (93.75%) purchased seeds from input dealers and only one farmer (6.25%) purchased cotton seed from local trader. In case of wheat crop, farmers (272) used farm saved seeds. Only 28 farmers procured seeds of wheat crop which were purchased from local trader (0.33%), input dealers (5.67%) and cooperative and government agency(3.33%).Out of 23 potato growers, 18 farmers(78.26%) used farm saved seeds while only 5 farmers (21.74%) purchased the seed for potato production. It was further observed that mungbean and spring maize farmers purchased the seeds and they procured from input dealers alone.

Across the landholdings categories, majority of the marginal farmers (95.16%) used purchased paddy seeds while majority of the medium farmers (24.49%) used farm saved paddy seeds. The purchased seeds on marginal farms (88.71%) were purchased from input dealers and 6.45 percent of the marginal farmers purchased from local traders, the purchased seeds were used by 82.19 percent, 75.51 percent, 82.86 percent and 87.50 percent of small, medium, large and very large farmers while farm saved seeds were used by 17.81 percent, 24.49 percent, 17.14 percent and 12.50 percent of the farmers respectively on the respective categories of farms. The paddy seeds from input-dealers were purchased by 78.08 percent, 75.51 percent, 82.86 percent, 87.50 percent of small, medium, large and very large farmers respectively.

In all landholdings categories 100 percent of the farmers used purchased seeds of maize crop. About 58 percent of marginal farmers purchased from local traders while 42.11 percent purchased from input dealers.. All the medium (100%) farmers purchased maize seeds from input dealers. All the farmers (100%) in all the categories used purchased seeds for cotton crop and all the marginal, small, large farmers purchased seeds from input dealers. Only medium farmers (25%) purchased cotton seeds from local traders. In case of sugarcane

crop, 100 percent of the farmers in each of the category used farm saved seeds procured through their own farms.

Farm saved wheat seeds were used by 90.67 percent to 92.23 percent of the farmers in different categories of farms, only 7.77 percent, 7.84 percent, 13.46 percent, 8.57 percent and 25 percent of the marginal, small, medium, large and very large farmers respectively used purchased seeds of wheat. The seeds were purchased by 6.80 percent, 2.94 percent, 7.69 percent, 5.71 percent, 12.50 percent of the farmers in the respective categories from cooperative and government agencies and only 0.97 percent of the marginal farmers purchased seed from local traders.

In case of potato , the small (75%) and large (60%) farmers used farm saved seed for potato crop and it was found that 100 percent each of the medium and very large farmers used farm saved seeds. Only 25 percent and 40 percent of the small and large farmers respectively used purchased seeds. The seeds were purchased by 25 percent of the marginal and 30 percent of the large farmers from input dealers. From local traders 10 percent of the large farmers purchased the potato seeds.

In case of mungbean 100 percent of the farmers in marginal, large and very large land holdings categories used purchased seeds and all the farmers in the respective categories purchased the seeds from input dealers. Similarly, 100 percent the spring maize growers in small, medium, large and very large land holdings categories used purchased seeds which all of them purchased from input dealers.

Table 3.3.1: Procurement of seed for crop production of paddy, maize and cotton crop in Punjab, 2018-19. **(Number)**

Landholding categories	How procured					Agency through which procured				
	Farm saved	Exchange	Purchase	Borrowed	Total	Own farm	Local trader	Input dealer	Cooperative & Govt. Agency	Total
Paddy										
Marginal	3	-	59	-	62	3	4	55	-	62
Small	13	-	60	-	73	13	3	57	-	73
Medium	12	-	37	-	49	12	-	37	-	49
Large	6	-	29	-	35	6	-	29	-	35
Very large	1	-	7	-	8	1	-	7	-	8
Total	35	-	192	-	227	35	7	185	-	227
Maize										
Marginal	-	-	38	-	38	-	22	16	-	38
Small	-	-	29	-	29	-	12	17	-	29
Medium	-	-	3	-	3	-		3	-	3
Large	-	-	-	-	-	-	-	-	-	-
Very large	-	-	-	-	-	-	-	-	-	-
Total	-	-	70	-	70	-	34	36	-	70
Cotton										
Marginal	-	-	5	-	5	-	-	5	-	5
Small	-	-	5	-	5	-	-	5	-	5
Medium	-	-	4	-	4	-	1	3	-	4
Large	-	-	2	-	2	-	-	2	-	2
Very large	-	-	-	-	-	-	-	-	-	-
Total	-	-	16	-	16	-	1	15	-	16

Table 3.3.2: Procurement of seed for crop production of paddy, maize and cotton crop in Punjab, 2018-19. **(Percent)**

Landholding categories	How procured					Agency through which procured				
	Farm saved	Exchange	Purchase	Borrowed	Total	Own farm	Local trader	Input dealer	Cooperative & Govt. Agency	Total
Paddy										
Marginal	4.84	-	95.16	-	100.00	4.84	6.45	88.71	-	100.00
Small	17.81	-	82.19	-	100.00	17.81	4.11	78.08	-	100.00
Medium	24.49	-	75.51	-	100.00	24.49	-	75.51	-	100.00
Large	17.14	-	82.86	-	100.00	17.14	-	82.86	-	100.00
Very large	12.50	-	87.50	-	100.00	12.50	-	87.50	-	100.00
Total	15.42	-	84.58	-	100.00	15.42	3.08	81.50	-	100.00
Maize										
Marginal	-	-	100.00	-	100.00	-	57.89	42.11	-	100.00
Small	-	-	100.00	-	100.00	-	41.38	58.62	-	100.00
Medium	-	-	100.00	-	100.00	-	0.00	100.00	-	100.00
Large	-	-	-	-	-	-	-	-	-	-
Very large	-	-	-	-	-	-	-	-	-	-
Total	-	-	100.00	-	100.00	-	48.57	51.43	-	100.00
Cotton										
Marginal	-	-	100.00	-	100.00	-	-	100.00	-	100.00
Small	-	-	100.00	-	100.00	-	-	100.00	-	100.00
Medium	-	-	100.00	-	100.00	-	25.00	75.00	-	100.00
Large	-	-	100.00	-	100.00	-	-	100.00	-	100.00
Very large	-	-	-	-	-	-	-	-	-	-
Total	-	-	100.00	-	100.00	-	6.25	93.75	-	100.00

Table 3.3.3: Procurement of seed for crop production of sugarcane, wheat and potato crop in Punjab, 2018-19. (Number)

Landholding categories	How procured					Agency through which procured				
	Farm saved	Exchange	Purchase	Borrowed	Total	Own farm	Local trader	Input dealer	Cooperative &govt.agency	Total
Sugarcane										
Marginal		-	-	-	-	-	-	-	-	-
Small	1	-	-	-	1	1	-	-	-	1
Medium	2	-	-	-	2	2	-	-	-	2
Large	1	-	-	-	1	1	-	-	-	1
Very large	2	-	-	-	2	2	-	-	-	2
Total	6	-	-	-	6	6	-	-	-	6
Wheat										
Marginal	95	-	8	-	103	95	1	7	-	103
Small	94	-	8	-	102	94	-	3	5	102
Medium	45	-	7	-	52	45	-	4	3	52
Large	32	-	3	-	35	32	-	2	1	35
Very large	6	-	2	-	8	6	-	1	1	8
Total	272	-	28	-	300	272	1	17	10	300
Potato										
Marginal	-	-	-	-	-	-	-	-	-	-
Small	3	-	1	-	4	3	-	1	-	4
Medium	7	-	-	-	7	7	-	-	-	7
Large	6	-	4	-	10	6	1	3	-	10
Very large	2	-	-	-	2	2	-	-	-	2
Total	18	-	5	-	23	18	1	4	-	23

Table 3.3.4: Procurement of seed for crop production of sugarcane, wheat and potato crop in Punjab, 2018-19. (Percent)

Landholding categories	How procured					Agency through which procured				
	Farm saved	Exchange	Purchase	Borrowed	Total	Own farm	Local trader	Input dealer	Cooperative &govt.agency	Total
Sugarcane										
Marginal	-	-	-	-	-	-	-	-	-	-
Small	100.00	-	-	-	100.00	100.00	-	-	-	100.00
Medium	100.00	-	-	-	100.00	100.00	-	-	-	100.00
Large	100.00	-	-	-	100.00	100.00	-	-	-	100.00
Very large	100.00	-	-	-	100.00	100.00	-	-	-	100.00
Total	100.00	-	-	-	100.00	100.00	-	-	-	100.00
Wheat										
Marginal	92.23	-	7.77	-	100.00	92.23	0.97	6.80	-	100.00
Small	92.16	-	7.84	-	100.00	92.16	-	2.94	4.90	100.00
Medium	86.54	-	13.46	-	100.00	86.54	-	7.69	5.77	100.00
Large	91.43	-	8.57	-	100.00	91.43	-	5.71	2.86	100.00
Very large	75.00	-	25.00	-	100.00	75.00	-	12.50	12.50	100.00
Total	90.67	-	9.33	-	100.00	90.67	0.33	5.67	3.33	100.00
Potato										
Marginal	-	-	-	-	-	-	-	-	-	-
Small	75.00	-	25.00	-	100.00	75.00	-	25.00	-	100.00
Medium	100.00	-	-	-	100.00	100.00	-	-	-	100.00
Large	60.00	-	40.00	-	100.00	60.00	10.00	30.00	-	100.00
Very large	100.00	-	-	-	100.00	100.00	-	-	-	100.00
Total	78.26	-	21.74	-	100.00	78.26	4.35	17.39	-	100.00

Table 3.3.5: Procurement of seed for crop production of mungbean and spring maize crop in Punjab, 2018-19. **(Number)**

Landholding categories	How procured					Agency through which procured				
	Farm saved	Exchange	Purchase	Borrowed	Total	Own farm	Local trader	Input dealer	Cooperative & govt.agency	Total
Mungbean										
Marginal	-	-	-	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-	-	-	-
Medium	-	-	1	-	1	-	-	1	-	1
Large	-	-	5	-	5	-	-	5	-	5
Very large	-	-	1	-	1	-	-	1	-	1
Total	-	-	7	-	7	-	-	7	-	7
Spring maize										
Marginal	-	-	-	-	-	-	-	-	-	-
Small	-	-	1	-	1	-	-	1	-	1
Medium	-	-	4	-	4	-	-	4	-	4
Large	-	-	3	-	3	-	-	3	-	3
Very large	-	-	1	-	1	-	-	1	-	1
Total	-	-	9	-	9	-	-	9	-	9

Table 3.3.6: Procurement of seed for crop production of mungbean and spring maize crop in Punjab, 2018-19. (Percent)

Landholding categories	How procured					Agency through which procured				
	Farm saved	Exchange	Purchase	Borrowed	Total	Own farm	Local trader	Input dealer	Cooperative &govt. Agency	Total
Mungbean										
Marginal	-	-	-	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-	-	-	-
Medium	-	-	100.00	-	100.00	-	-	100.00	-	100.00
Large	-	-	100.00	-	100.00	-	-	100.00	-	100.00
Very large	-	-	100.00	-	100.00	-	-	100.00	-	100.00
Total	-	-	100.00	-	100.00	-	-	100.00	-	100.00
Spring maize										
Marginal	-	-	-	-	-	-	-	-	-	-
Small	-	-	100.00	-	100.00	-	-	100.00	-	100.00
Medium	-	-	100.00	-	100.00	-	-	100.00	-	100.00
Large	-	-	100.00	-	100.00	-	-	100.00	-	100.00
Very large	-	-	100.00	-	100.00	-	-	100.00	-	100.00
Total	-	-	100.00	-	100.00	-	-	100.00	-	100.00

Procurement of fertilizers, manures and plant protection chemicals for various crop production has been presented in Table 3.3.7 to Table 3.3.10. All the sampled farmers procured the purchased fertilizers. Majority (292 farmers i.e.97.33%) of them procured from cooperative and government agency and only 8 households (7.77%) purchased from input dealers. In case of manures, out of 20 households, 12(60%) used purchased manures while 8 farmers (40%) used farm saved manures. The plant protection chemicals used by all the sampled farmers were purchased ones.

Across the local holdings categories 100 percent marginal, small, medium, large and very large farmers used purchased fertilizers and 98.12 percent, 97.06 percent, 100 percent, 97.14 percent and 100 percent of the farmers of respective categories purchased the chemical fertilizers from cooperative and government agencies while rest of the farmers purchased from input dealers.

Farm saved manures were used by 60 percent, 16.67 percent, 50 percent and 33.33 percent of small, medium, large and very large farms respectively. None of the marginal farmer used farm saved manures for crop production. It was found that majority of medium farmers (83.33%) used purchased manures while on other categories of farms the use of purchased manures varied between 50 to 66.67 percent of the farmers. The manures were purchased by farmers of each category from others.

All the farmers (100%) of each of the landholdings category used purchased plant protection chemicals and these chemicals were purchased from input dealers by 98 to 100 percent of the farmers in each category. Only 1.94 percent and 0.98 percent of the marginal and small farmers purchased these protection chemicals from local traders. All the sampled farmers (100%) in each category used purchased diesel and that was purchased from input dealers and the quality of diesel was revealed good by all the farmers (100%).

The human labour was purchased by all the farmers in each category. In case of irrigation, 100 percent farmers in all the categories except very large farmers used purchased irrigation. Diesel for irrigation was procured from input dealers by 5.71 percent of marginal, 7.69 percent of small farmers, 100 percent each of medium and large farmers. About 92 to 94 percent of the irrigation was purchased from others.

Table 3.3.7: Procurement of fertilizers, manures and plant protection chemicals for crop production in Punjab, 2018-19. (Number)

Landholding categories	How procured					Agency through which procured					
	Farm saved	Exchange	Purchase	Borrowed	Total	Own farm	Local trader	Input dealer	Cooperative &govt.agency	Others	Total
Fertilizers											
Marginal	-	-	103	-	103	-	-	4	99	-	103
Small	-	-	102	-	102	-	-	3	99	-	102
Medium	-	-	52	-	52	-	-	-	52	-	52
Large	-	-	35	-	35	-	-	1	34	-	35
Very large	-	-	8	-	8	-	-	-	8	-	8
Total	-	-	300	-	300	-	-	8	292	-	300
Manures											
Marginal	-	-	-	-	-	-	-	-	-	-	-
Small	3	-	2	-	5	3	-	-	-	2	5
Medium	1	-	5	-	6	1	-	-	-	5	6
Large	3	-	3	-	6	3	-	-	-	3	6
Very large	1	-	2	-	3	1	-	-	-	2	3
Total	8	-	12	-	20	8	-	-	-	12	20
Plant protection chemicals											
Marginal	-	-	103	-	103	-	2	101	-	-	103
Small	-	-	102	-	102	-	1	101	-	-	102
Medium	-	-	52	-	52	-	-	52	-	-	52
Large	-	-	35	-	35	-	-	35	-	-	35
Very large	-	-	8	-	8	-	-	8	-	-	8
Total	-	-	300	-	300	-	3	297	-	-	300

Table 3.3.8: Procurement of fertilizers, manures and plant protection chemicals for crop production in Punjab, 2018-19. (Percent)

Landholding categories	How procured					Agency through which procured					
	Farm saved	Exchange	Purchase	Borrowed	Total	Own farm	Local trader	Input dealer	Cooperative &govt. Agency	Others	Total
Fertilizers											
Marginal	-	-	100.00	-	100.00	-	-	3.88	96.12	-	100.00
Small	-	-	100.00	-	100.00	-	-	2.91	97.06	-	100.00
Medium	-	-	100.00	-	100.00	-	-	-	100.00	-	100.00
Large	-	-	100.00	-	100.00	-	-	0.97	97.14	-	100.00
Very large	-	-	100.00	-	100.00	-	-		100.00	-	100.00
Total	-	-	100.00	-	100.00	-	-	7.77	97.33	-	100.00
Manures											
Marginal	-	-	-	-	-	-	-	-	-	-	-
Small	60.00	-	40.00	-	100.00	60.00	-	-	-	40.00	100.00
Medium	16.67	-	83.33	-	100.00	16.67	-	-	-	83.33	100.00
Large	50.00	-	50.00	-	100.00	50.00	-	-	-	50.00	100.00
Very large	33.33	-	66.67	-	100.00	33.33	-	-	-	66.67	100.00
Total	40.00	-	60.00	-	100.00	40.00	-	-	-	60.00	100.00
Plant protection chemicals											
Marginal	-	-	100.00	-	100.00	-	1.94	98.06	-	-	100.00
Small	-	-	100.00	-	100.00	-	0.98	99.02	-	-	100.00
Medium	-	-	100.00	-	100.00	-	-	100.00	-	-	100.00
Large	-	-	100.00	-	100.00	-	-	100.00	-	-	100.00
Very large	-	-	100.00	-	100.00	-	-	100.00	-	-	100.00
Total	-	-	100.00	-	100.00	-	1.00	99.00	-	-	100.00

Table 3.3.9: Procurement of diesel, human labour and irrigation for crop production in Punjab, 2018-19. (Number)

Landholding categories	How procured					Agency through which procured					
	Farm saved	Exchange	Purchase	Borrowed	Total	Own farm	Local trader	Input dealer	Cooperative &govt.agency	Others	Total
Diesel											
Marginal	-	-	27	-	27	-	-	27	-	-	27
Small	-	-	53	-	53	-	-	53	-	-	53
Medium	-	-	48	-	48	-	-	48	-	-	48
Large	-	-	35	-	35	-	-	35	-	-	35
Very large	-	-	8	-	8	-	-	8	-	-	8
Total	-	-	171	-	171	-	-	171	-	-	171
Human labour											
Marginal	-	-	103	-	103	-	-	-	-	103	103
Small	-	-	102	-	102	-	-	-	-	102	102
Medium	-	-	52	-	52	-	-	-	-	52	52
Large	-	-	35	-	35	-	-	-	-	35	35
Very large	-	-	8	-	8	-	-	-	-	8	8
Total	-	-	300	-	300	-	-	-	-	300	300
Irrigation											
Marginal	-	-	52	-	52	-	-	3	-	49	52
Small	-	-	13	-	13	-	-	1	-	12	13
Medium	-	-	3	-	3	-	-	3	-	-	3
Large	-	-	7	-	7	-	-	7	-	-	7
Very large	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	75	-	75	-	-	14	-	61	75

Table 3.3.10: Procurement of diesel, human labour and irrigation for crop production in Punjab, 2018-19. (Percent)

Landholding categories	How procured					Agency through which procured					
	Farm saved	Exchange	Purchase	Borrowed	Total	Own farm	Local trader	Input dealer	Cooperative &govt.agency	Others	Total
Diesel											
Marginal	-	-	100.00	-	100.00	-	-	100.00	-	-	100.00
Small	-	-	100.00	-	100.00	-	-	100.00	-	-	100.00
Medium	-	-	100.00	-	100.00	-	-	100.00	-	-	100.00
Large	-	-	100.00	-	100.00	-	-	100.00	-	-	100.00
Very large	-	-	100.00	-	100.00	-	-	100.00	-	-	100.00
Total	-	-	100.00	-	100.00	-	-	100.00	-	-	100.00
Human labour											
Marginal	-	-	100.00	-	100.00	-	-	-	-	100.00	100.00
Small	-	-	100.00	-	100.00	-	-	-	-	100.00	100.00
Medium	-	-	100.00	-	100.00	-	-	-	-	100.00	100.00
Large	-	-	100.00	-	100.00	-	-	-	-	100.00	100.00
Very large	-	-	100.00	-	100.00	-	-	-	-	100.00	100.00
Total	-	-	100.00	-	100.00	-	-	-	-	100.00	100.00
Irrigation											
Marginal	-	-	100.00	-	100.00	-	-	5.77	-	94.23	100.00
Small	-	-	100.00	-	100.00	-	-	7.69	-	92.31	100.00
Medium	-	-	100.00	-	100.00	-	-	100.00	-	-	100.00
Large	-	-	100.00	-	100.00	-	-	100.00	-	-	100.00
Very large	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	100.00	-	100.00	-	-	18.67	-	81.33	100.00

3.4 Expenditure incurred and quality of inputs

This is shown in Table 3.4.1 that overall expenses incurred on inputs for producing various crops were to the tune of Rs.6.89 crore. The major item of expenditure was rent for lease in land and it was estimated to be Rs.2,.61 crore. The next major item of expenditure was cost of human labour (Rs.87.72 lakh) followed by cost of hiring of machinery (Rs.81.71 lakh), plant protection chemicals (Rs.75.09 lakh), fertilizers (Rs.64.48 lakh), diesel (Rs.42.73 lakh), seeds (Rs.38.54 lakh). The expenditure on seeds varied between Rs. 3.51 lakh and Rs.12.58 lakh among different landholding categories. The highest expenditure (Rs 12.58 lakh) on seeds was incurred by large farmers followed by small (Rs 7.72 lakh), medium (Rs 7.64 lakh), very large (Rs7.07 lakh) and marginal farmers(Rs 3.51 lakh) respectively. The highest amount on fertilisers was spent by large farmers(Rs 22.16 lakh) followed by small (Rs 13.58 lakh), medium(Rs 12.95 lakh) , very large(Rs 9.82 lakh) and marginal farmers (Rs 5.95 lakh) respectively. The expenditure on manure varied between Rs, 39200 and Rs. 1.18 lakh among the farmers of different landholding categories. The expenses on plant protection chemicals were incurred maximum by large farmers to the tune of Rs. 25.72 lakh and least were incurred on marginal farms of Rs. 6.31 lakh. The expenditure on diesel on marginal, small, medium, large and very large farms was Rs. 1.31 lakh, Rs. 5.66 lakh, Rs.10.25 lakh , Rs. 17.30 lakh, Rs. 8.18 lakh respectively. On large farms the expenditure on diesel was incurred more as compared to the other farm categories. The wages paid for the use of human labor was found maximum on large farms (Rs 28.23 lakh) followed by small (Rs 18.81 lakh), medium(Rs 17.11 lakh), very large (Rs 14.45 lakh) and marginal farmers(Rs 9.09 lakh) respectively. None of very large farmer spent any amount for irrigation. The expenses incurred for irrigation on large farms was maximum i.e. Rs. 2.62 lakh and least were incurred on medium farms (Rs. 41600).For the repair of machinery, expenses incurred was found maximum on medium farms (Rs, 3.68 lakh) followed by small(Rs, 3.06 lakh), large (Rs, 2.76 lakh), marginal (Rs, 1.23 lakh) and very large farms(Rs, 66500) respectively. The cost of hiring of machinery was found maximum on small farms which was to the tune of Rs. Rs 23.75 lakh followed by Rs 21.37 lakh, Rs 15.74 lakh, Rs 12.59 lakh and Rs. 8.24 lakh on large, medium, marginal and very large farms respectively. The other expenses on marginal, small , medium, large and very large farms were Rs. 1.09 lakh, Rs 2.39 lakh, Rs 2.27 lakh, Rs 2.48 lakh and Rs.64600 respectively. The interest on variable expenses was estimated to the tune of Rs. 95498, Rs.2.06 lakh, Rs. 1.97 lakh, Rs. 3.07 lakh and Rs. 1.36 lakh respectively on the farms of

the respective landholding categories. The rent for the paid for the leased in land was found maximum on large farms which was to the tune of Rs. 1.18 crore. The rent paid for leased in land by marginal, small, medium and very large farmers was Rs. 2.92 lakh, Rs.14.69 lakh, Rs. 43.83 lakh and Rs.81.03 lakh respectively. The total expenses incurred for the use of various inputs for crop production on different farms i.e. marginal, small,, medium, large and very large farms were Rs.46.32 lakh, Rs. 1.08 crore, Rs. 1.33 crore, Rs. 2.58 crore and Rs. 1.43 crore respectively. Overall the total expenses incurred were estimated to the tune of Rs.6.89 crore.

Table 3.4.1: Total expenses incurred for the purchase of different inputs in Punjab, 2018-19 (Rs)

Landholding categories	Seeds	Fertilisers	Manures	Plant protection chemicals	Diesel	Human labour	Irrigation	Repair of mach.	Cost of hiring of machinery	Other expenses	Interest	Lease rent for land	Total
Marginal	351169	595280	-	631619	131777	909960	131706	123500	1259356	109993	95498	292750	4632608
Small	772711	1358863	39200	1506276	566996	1881314	115758	306400	2375222	239350	206147	1469000	10837237
Medium	764249	1295456	91400	1679585	1025376	1711745	41600	368000	1574273	227763	197538	4383500	13360485
Large	1258899	2216586	118000	2572725	1730621	2823690	262600	276500	2137813	248725	307039	11887000	25840198
Very large	707343	982276	35600	1119375	818533	1445450	-	66500	824350	64600	136441	8103000	14303468
Total	3854371	6448461	284200	7509580	4273303	8772159	551664	1140900	8171014	890431	942663	26135250	68973996

Table 3.4.2: Total expenses incurred for the purchase of inputs (mean value) in Punjab, 2018-19. (Rs)

Landholding categories	Total expenses	Expenses per ha	Expenses per unit of crop produced
Marginal	4632608	32689	6.52
Small	10837237	35046	6.41
Medium	13360485	42216	6.47
Large	25840198	53210	6.92
Very large	14303468	65852	6.23
Total/overall	68973995	46913	6.57

On an average, the total expenses (mean value) incurred on the purchase of inputs on different categories of farms is presented in Table 3.4.2. The expenses incurred on per hectare basis varied between Rs.32689 to Rs.65852 across land holding categories. It was found that per hectare expenses increased with farm size. The expenses per unit of crop produced was estimated to be the least i.e. Rs.6.23 on very large farms followed by small (Rs.6.41), medium (Rs.6.47) marginal (Rs.6.52) and large farms (Rs.6.92). Overall, per hectare expenses spent for the purchase of inputs were Rs.46913 while per unit of crop, the expenses came out to be Rs.6.57.

This is shown in Table 3.4.3 that overall expenses incurred per farm on inputs for producing various crops were to the tune of Rs.2.29 lakh The major item of expenditure was rent for lease in land and it was estimated to be Rs.87118. The next major item of expenditure was cost of human labour (Rs.29241) followed by cost of hiring of machinery (Rs.27237), plant protection chemicals (Rs.25032), fertilizers (Rs.21495), diesel (Rs.14242), seed (Rs.12848). The expenditure on seeds varied between Rs.3409 and Rs.88418 among different landholding categories. The highest expenditure (Rs.88418) on seeds was incurred by very large farmers followed by large (Rs 35969), medium(Rs 14697), small (Rs7576) and marginal farmers(Rs 3409) respectively. The highest amount on fertilisers was spent by large farmers(Rs 1.22 lakh) followed by large (Rs 63331), medium (Rs 24913), small (Rs 13322) and marginal farmers respectively(Rs 5779).The expenditure on manure varied between Rs, 384 and Rs. 4450 among the farmers of different landholding categories. The expenses on plant protection chemicals were incurred maximum by very large farmers to the tune of Rs.1.39 lakh and least were incurred on marginal farms of Rs. 6132. The expenditure on diesel on marginal, small, medium, large and very large farms was Rs. 1279. Rs. 5559, Rs.19719, Rs.49446, Rs 1.02 lakh respectively. On very large farms the expenditure on diesel was incurred more as compared to the other farm categories. The wages paid for the use of human labor was found maximum on very large farms (Rs 1.80 lakh) followed by large (Rs 80677), medium (Rs 32918) , small (Rs 18444) and marginal farmers (Rs 8835) respectively. None of very large farmer spent any amount for irrigation . The expenses incurred for irrigation on large farms was maximum i.e. Rs.7503 and least were incurred on medium farms (Rs.800). For the repair of machinery, expenses incurred was found maximum on very large farms (Rs. 8313) followed by large (Rs. 7900), medium (Rs. 7077), small (Rs.3004) and marginal (Rs. 1199) respectively. The cost of hiring of machinery was found maximum on very large farms which was to the tune of Rs.1.03 lakh followed by Rs. 61080, Rs 30274. Rs 23286 and Rs 12227 on large, medium, small and

marginal respectively. The other expenses on marginal, small, medium, large and very large farms were Rs 1068, Rs2347, Rs 4380, Rs 7106 and Rs 8075 respectively. The interest on variable expenses was estimated to the tune of Rs. 927, Rs 2021, Rs 3799, Rs 8773 and Rs 17055 respectively on the farms of the respective landholding categories. The rent for the paid for the leased in land was found maximum on very large farms which was to the tune of Rs 10.12 lakh. The rent paid for leased in land by marginal, small, medium and large farmers was Rs 2842, Rs 14402, Rs 84298 and Rs 3.39 lakh respectively. The total expenses incurred for the use of various inputs for crop production on different farms i.e. marginal, small, medium, large and very large farms were Rs 44977, Rs 1.06 lakh , Rs 2.56 lakh, Rs 7.38 lakh and Rs 17.87 lakh respectively. Overall the total expenses incurred were estimated to the tune of Rs 2.29 lakh.

Table 3.4.3 Per farm expenses incurred for the purchase of different inputs in Punjab, 2018-19. **(Rs)**

Landholding categories	Seeds	Fertilisers	Manures	Plant protection chemicals	Diesel	Human labour	Irri-gation	Repair of mach.	Cost of hiring of mach.	Other expenses	Interest	Lease rent for land	Total
Marginal	3409	5779	-	6132	1279	8835	1279	1199	12227	1068	927	2842	44977
Small	7576	13322	384	14767	5559	18444	1135	3004	23286	2347	2021	14402	106247
Medium	14697	24913	1758	32300	19719	32918	800	7077	30274	4380	3799	84298	256932
Large	35969	63331	3371	73506	49446	80677	7503	7900	61080	7106	8773	339629	738291
Very large	88418	122785	4450	139922	102317	180681	-	8313	103044	8075	17055	1012875	1787934
Overall	12848	21495	947	25032	14244	29241	1839	3803	27237	2968	3142	87118	229913

Table 3.4.4 Per farm expenses incurred for the purchase of inputs (mean value) in Punjab, 2018-19 **(Rs)**

Landholding categories	Expenses per farm	Expenses per ha	Expenses per unit of crop produced
Marginal	44977	32689	6.52
Small	106247	35046	6.41
Medium	256932	42216	6.47
Large	738291	53210	6.92
Very large	1787934	65852	6.23
Total/overall	229913	46913	6.57

Quality of inputs:

The quality of inputs used for the production of various crops is presented in Tables 3.4.5 and 3.4.6. In case paddy seeds, overall 97.36 percent of the farmers revealed the paddy seeds of good quality and seeds of satisfactory level were reported by 2.64 percent of the farmers. Across land holding categories , paddy seeds of good quality were reported by 100 percent each of the large and very large farmers and 98.39 percent , 94.52 percent and 97.96 percent of the marginal, small and medium farmers respectively.

\ Majority of the maize farmers (90.00%) revealed the quality of seed as good while 7(10.00%) farmers reported quality of seeds just as satisfactory. Across landholding categories, 100 percent of the medium farmers followed by 89.66 percent and 89.47 percent of the small and marginal farmers respectively revealed the quality of maize seeds as good.

Majority of the cotton farmers (81.25%)) revealed that the cotton seeds were of good quality and satisfactory level of cotton seeds were reported by 18.75 percent of the farmers. The marginal and large farmers (100% each) were of the view that cotton seeds were of good quality and the same was the opinion of 60 percent and 75 percent of the small and medium farmers respectively. The satisfactory level of cotton seeds were revealed by 40 percent and 25 percent of the small and medium farmers respectively.

In case of sugarcane crop all the farmers (100%) used farm saved seeds as they revealed were of good quality.

Overall, 70.67 percent of the wheat growers stated that wheat seeds used by them were of good quality while 29.33 percent of the farmers revealed the wheat seeds of satisfactory level. Across land holding categories, 72.82 percent, 68.63 percent, 69.23 percent, 71.43 percent and 75 percent of the marginal, small, medium, large and very large farmers reported the quality of seeds as good. The satisfactory quality of seeds were reported between 25 percent to 31.37 percent of the farmers of respective landholding categories.

The good quality of potato seeds were revealed by 100 percent of small, medium and very large farmers. Only 60 percent large farmers considered the potato seeds of good quality while 40 percent of them revealed quality of seeds as satisfactory.

In case of mungbean 100 percent of the farmers in marginal, large and very large land holdings categories Similarly, 100 percent the spring maize growers in small, medium, large and very large land holdings categories reported the quality of spring maize seeds as of good.

Overall and across the landholding categories,, 100 percent the respondent farmers revealed that the chemical fertilizers they used were of good quality. In case of manures, all the farmers (100% each of the marginal, small, medium, large and very large farmers)revealed the quality of manures as good. The plant protection chemicals used by 98.67 percent of the sampled farmers were of good quality. Only 1.33 percent the small farmers considered the quality as satisfactory. Across land holding categories, 100 percent each of the medium, large and very large farmers, 98. 06 percent and 98.04 percent of the marginal and small farmers reported the quality of plant protection chemicals of good quality. All the sampled farmers (100%) in each category revealed quality of diesel as good . the quality of human labour was considered good by all the farmers in each land holding category. In case of irrigation, 100 percent farmers in all the categories reported the quality of irrigation as good.

Table 3.4.5: Quality of seed input used for crop production in Punjab, 2018-19. (Number)

Landholding categories	Good	Satisfactory	Poor	Don't know	Total
Paddy					
Marginal	61	1	-	-	62
%	98.39	1.61	-	-	100.00
Small	69	4	-	-	73
%	94.52	5.48	-	-	100.00
Medium	48	1	-	-	49
%	97.96	2.04	-	-	100.00
Large	35	-	-	-	35
%	100.00	0.00	-	-	100.00
Very large	8	-	-	-	8
%	100.00	0.00	-	-	100.00
Total	221	6	-	-	227
%	97.36	2.64	-	-	100.00
Maize					
Marginal	34	4	-	-	38
%	89.47	10.53	-	-	100.00
Small	26	3	-	-	29
%	89.66	10.34	-	-	100.00
Medium	3	-	-	-	3
%	100.00	-	-	-	100.00
Large	-	-	-	-	-
%	-	-	-	-	-
Very large	-	-	-	-	-
%	-	-	-	-	-
Total	63	7	-	-	70
%	90.00	10.00	-	-	100.00
Cotton					
Marginal	5	-	-	-	5
%	100.00	0.00	-	-	100.00
Small	3	2	-	-	5
%	60.00	40.00	-	-	100.00
Medium	3	1	-	-	4
%	75.00	25.00	-	-	100.00
Large	2	-	-	-	2
%	100.00	-	-	-	100.00
Very large	-	-	-	-	-
%	-	-	-	-	-
Total	13	3	-	-	16
%	81.25	18.75	-	--	100.00
Sugarcane					

Marginal	-	-	-	-	
%	-	-	-	-	
Small	1	-	-	-	1
%	100.00	-	-	-	100.00
Medium	2	-	-	-	2
%	100.00	-	-	-	100.00
Large	1	-	-	-	1
%	100.00	-	-	-	100.00
Very large	2	-	-	-	2
%	100.00	-	-	-	100.00
Total	6	-	-	-	6
%	100.00	-	-	-	100.00
Wheat					
Marginal	75	28	-	-	103
%	72.82	27.18	-	-	100.00
Small	70	32	-	-	102
%	68.63	31.37	-	-	100.00
Medium	36	16	-	-	52
%	69.23	30.77	-	-	100.00
Large	25	10	-	-	35
%	71.43	28.57	-	-	100.00
Very large	6	2	-	-	8
%	75.00	25.00	-	-	100.00
Total	212	88	-	-	300
%	70.67	29.33	-	-	100.00
Potato					
Marginal	-	-	-	-	-
%	-	-	-	-	-
Small	4	-	-	-	4
%	100.00	-	-	-	100.00
Medium	7	-	-	-	7
%	100.00	-	-	-	100.00
Large	6	4	-	-	10
%	60.00	40.00	-	-	100.00
Very large	2	-	-	-	2
%	100.00	-	-	-	100.00
Total	19	4	-	-	23
%	82.61	17.39	-	-	100.00
Mungbean					
Marginal	-	-	-	-	-
%	-	-	-	-	-
Small	-	-	-	-	-

%	-	-	-	-	-
Medium	1	-	-	-	1
%	100.00	-	-	-	100.00
Large	5	-	-	-	5
%	100.00	-	-	-	100.00
Very large	1	-	-	-	1
%	100.00	-	-	-	100.00
Total	7	-	-	-	7
%	100.00	-	-	-	100.00
Spring maize					
Marginal	-	-	-	-	-
%	-	-	-	-	-
Small	1	-	-	-	1
%	100.00	-	-	-	100.00
Medium	4	-	-	-	4
%	100.00	-	-	-	100.00
Large	3	-	-	-	3
%	100.00	-	-	-	100.00
Very large	1	-	-	-	1
%	100.00	-	-	-	100.00
Total	9	-	-	-	9
%	100.00	-	-	-	100.00

Table 3.4.6: Quality of different inputs used for crop production in Punjab, 2018-19. (Number)

Landholding categories	**Good**	**Satisfactory**	**Poor**	**Don't know**	**Total**
Fertilizer					
Marginal	103	-	-	-	103
%	100.00	-	-	-	100.00
Small	102	-	-	-	102
%	100.00	-	-	-	100.00
Medium	52	-	-	-	52
%	100.00	-	-	-	100.00
Large	35	-	-	-	35
%	100.00	-	-	-	100.00
Very large	8	-	-	-	8
%	100.00	-	-	-	100.00
Total	300	-	-	-	300
%	100.00	-	-	-	100.00
Manures					
Marginal	-	-	-	-	0

Small	-	-	-	-	5
%	100.00	-	-	-	100.00
Medium	6	-	-	-	6
%	100.00	-	-	-	100.00
Large	6	-	-	-	6
%	100.00	-	-	-	100.00
Very large	3	-	-	-	3
%	100.00	-	-	-	100.00
Total	20	-	-	-	20
%	100.00	-	-	-	100.00
Plant protection measures					
Marginal	101	2	-	-	103
%	98.06	-	-	-	100.00
Small	100	-	-	-	102
%	98.04	-	-	-	100.00
Medium	52	-	-	-	52
%	100.00	-	-	-	100.00
Large	35	-	-	-	35
%	100.00	-	-	-	100.00
Very large	8	-	-	-	8
%	100.00	-	-	-	100.00
Total	296	4	-	-	300
%	98.67	-	-	-	100.00
Diesel					
Marginal	27	-	-	-	27
%	100.00	-	-	-	100.00
Small	53	-	-	-	53
%	100.00	-	-	-	100.00
Medium	48	-	-	-	48
%	100.00	-	-	-	100.00
Large	35	-	-	-	35
%	100.00	-	-	-	100.00
Very large	8	-	-	-	8
%	100.00	-	-	-	100.00
Total	171	-	-	-	171
%	100.00	-	-	-	100.00
Human labour					
Marginal	103	-	-	-	103
%	100.00	-	-	-	100.00
Small	102	-	-	-	102
%	100.00	-	-	-	100.00
Medium	52	-	-	-	52
%	100.00	-	-	-	100.00
Large	35	-	-	-	35

%	100.00	-	-	-	100.00
Very large	8	-	-	-	8
%	100.00	-	-	-	100.00
Total	300	-	-	-	300
%	100.00	-	-	-	100.00
Irrigation					
Marginal	52	-	-	-	52
%	100.00	-	-	-	100.00
Small	13	-	-	-	13
%	100.00	-	-	-	100.00
Medium	3	-	-	-	3
%	100.00	-	-	-	100.00
Large	7	-	-	-	7
%	100.00	-	-	-	100.00
Very large		-	-	-	0
Total	75	-	-	-	75
%	100.00	-	-	-	100.00

3.5 Reasonable/ Unreasonable price paid for inputs and reasons for unreasonable price

The prices paid for the use of various inputs considered reasonable or unreasonable by the farmers and the same has been presented in Table. 3.5.1 to 3.5.10

The seeds were purchased by the 192 paddy farmers, out of which 133 (69.27%) farmers revealed the seed prices as reasonable while 59 farmers (30.73%) reported the prices as unreasonable as majority of the 24 farmers (40.68%) considered no control over seed prices, seed not subsidized was reported by 28 farmers (47.46%) as unreasonable price. Out of 68 maize growers, 24 farmers (35.29%) considered the prices of maize seeds as reasonable while 44 farmers (64.71%) gave their opinion as unreasonable price because of not availing any subsidy in case of seeds (52,27%) and no control over price and all the reasons (20.45%) i.e. seed not subsidised, very few sellers , no govt. sellers. private sellers collude no price control.. In case of 16 cotton farmers 28 wheat farmers, 5 potato farmers, 7 mungbean farmers and 9 spring maize farmers purchased the seeds for their crop . Out of these, 6(37.50%), 11(39.29%), 3(60%), 7(100%) and 1(11.11%) farmers of respective crops revealed the seed prices as reasonable. None of the mungbean farmer considered the prices of seeds as unreasonable.

In case of fertilizers out of 300 farmers, 212 farmers (70.67%) revealed the prices of fertilizers as reasonable while 88 (29.333%) farmers gave their opinion regarding the prices

of fertilizer as unreasonable & it was further reported that they get subsidized fertilizer even then they feel the prices of fertilizer as high. Further out of 12 farmers, only 6 farmers (50%) considered the manure prices as reasonable. The plant protection chemicals prices were considered reasonable by 194 farmers (64.67%) out of 300. The main reason given by rest of the farmers (35.33%) for unreasonable prices of plant protection chemicals revealed of collusion of private dealers and no control over price.

Diesel prices as unreasonable were reported by all the farmers. Costly labour was reported by 13 farmers (4.33%) only while 287 farmers (95.67%) considered the wages of labour as reasonable.

For irrigation, price paid for the use of irrigation was felt reasonable by 55 farmers (73.33%) out of 75 farmers. The unreasonable price paid for irrigation was revealed by 18 farmers(24%). The number of sampled farmers who revealed the price for major repair and maintenance of machinery and equipment as reasonable were 149 (87.13%) out of 171 farmers. Those who were not, satisfied with the price of repair and maintenance were 21 farmers (12.28%) and they were of the view that the prices were high due to reason of no government sellers, no control over price. The cost of hiring machinery and lease rent for land was revealed reasonable by 237 (79%) and 20 farmers (29.41%) respectively out of 300 and 68 farmers. The total expenses incurred for the production of various crops were depicted reasonable by 114 farmers (38%) out of 300 farmers. The major reasons for dissatisfaction were unsubsidized inputs, no price control, inputs costly even after subsidy.

Input prices not reasonable and reasons for unreasonable prices

Seeds : Across the land holding categories, the highest number of medium farmers (54.05%) reported the paddy seed prices as high followed by small (33.33%), large (20.69%), marginal (15.25%) and very large farmers (14.29%). About 78 percent of marginal farmers reported that seeds were not subsidized while farmers of other categories viz. small (40%), medium (50%), large (33.33%) and very large farmers (100%) were also of the same opinion. No control over price was another reason for unreasonable price revealed by marginal (22.22%), small (50%), medium (40%) and large farmers (66.67%).

Maize seeds prices were not considered reasonable due to high prices by majority of the marginal farmers (69.44%) followed by small (62.07%) and medium (33.33%) farmers. The marginal farmers (68%) also revealed the unreasonable price as these were not subsidized. All the medium farmers (100%) were of the view that being no control over the price the maize seed prices were unreasonable.

Majority of the medium farmers (75%) considered the cotton seed price as high followed by 60 percent and 40 percent of the small and marginal farmers respectively. The other reason for unreasonable price stated by 33.33 percent each of the marginal and medium farmers was seeds being not subsidized. No control over price was reported by 66.67 percent each of marginal and medium farmers and 100 percent of small farmers.

Wheat seed prices were considered high by majority of small farmers (85.71%) along with farmers of other categories while 100 percent of the large and very large farmers were opined that availability of non-subsidized seeds and no control over the seed prices were the reasons for unreasonable prices of wheat seeds.

In case of potato seeds, 100 percent of large farmers considered the potato seed prices unreasonable due to availability of non-subsidized seeds. The unreasonable potato seed prices were stated by very large farmers due to all the reasons i.e. very high prices, not subsidized seeds, no control over the prices.

All the mungbean growers (100%) considered the mungbean seed prices as reasonable.

The unreasonable prices of spring maize seeds were considered high by 100 percent each of the small, medium and large farmers, seeds not subsidized by 50 percent of the medium and 33.33 percent of the large farmers and 66.67 percent of medium and large farmers respectively.

Fertilizers: The fertilizer prices were considered unreasonable due to high price by marginal (23.30%), small (30.39%), medium (34.62%), large (34.29%) and very large (37.50%) farmers. Non- availability of subsidized fertilizers were reported by 12.90 percent to 33.33 percent of the farmers of small, medium, large and very large category. Another reason reported for unreasonable fertilizer prices was that fertilizers were available with subsidy but still that were costly too and this reason was reported by 100 percent of the marginal farmers followed by small (87.10%), medium (72.22%), large(66.67%) and very large farmers (66.67%).

Manures: The price for manures were considered high by 50 percent, 60 percent, 33.33 percent, 50 percent and 50 percent of the small, medium, large and very large farmers. All the farmers (100%) of these categories were of the view that there were few sellers of the manure due to which the prices of manures were unreasonable.

Plant protection chemicals: The prices of plant protection chemicals were found high by majority of the medium (53.85%) followed by large (45.71%), very large (37.50%), small (34.31%) and marginal farmers (23.30%). Another reason for unreasonable prices of plant protection chemicals revealed by majority of medium (57.14%) farmers was no price control

while very large farmers (66.67%) reported private sellers collusion as the reason for unreasonable plant protection chemicals prices.

Diesel: The prices of diesel were considered high by 62.50 percent to 96.30 percent of the farmers of all land holdings categories while the prices very high were reported by majority of the very large farmers (37.50%). No control over the diesel price was stated by 100 percent of the farmers.

Human Labour: No control over price was stated by 100 percent each of large and very large farmers, 57.14 percent of marginal farmers and 50 percent of medium farmers as the unreasonable price for human labour.

Irrigation: High irrigation charges were revealed by majority of the large (71.43%) farmers followed by medium (66.67%), small (38.46%) and marginal farmers (11.54%). All the marginal and small farmers (100%) reported as very few sellers for irrigation while 85.71 percent of the large farmers revealed no control over price as the reasons for unreasonable prices paid for irrigation.

Minor repair and maintenance of machinery and equipment: The price paid for minor repair and maintenance of machinery was considered high by majority of the very large farmers (37.50%) while very large farmers (66.67%) stated very few sellers as the reasons for unreasonable price.

Cost of hiring machinery: The cost of hiring machinery was high to 22.33 percent of marginal farmers followed by small (28.43%) and large farmers (25%). Non availability of subsidized machinery was revealed by marginal (60.87%), small (61.76%) and very large (50%) farmers. All the medium farmers (100%) reported no control over price as the reasons for unreasonable price of hiring machinery.

Lease rent for land: Majority of very large farmers (50%) considered lease rent as high along with small (18.15%), medium (25%) and large farmers (37.50%) while majority of the small farmers (72.73%) revealed very high rent for leased in land as the reason for unreasonable price for land rent.

Total expenses: The total input expenses were considered unreasonable due to high costly inputs by 47.57 percent, 54.90 percent, 61.54 percent, 60 percent and 75 percent of marginal, small, medium, large and very large farmers respectively. Almost 75 percent of small, medium, large and very large farmers stated no control on the price as the reasons for unreasonable total expenses of inputs.

Table 3.5.1: Reasonable /unreasonable price paid for seed input for crop production in Punjab, 2018-19. **(Number)**

Landholding categories	Reasonable	High	Very high	Total	Not subsidised	Very few sellers	No govt. Sellers	Pvt. Sellers collude	No price control	All of the above	Total
Paddy											
Marginal	50	9	-	59	7	-	-	-	2	-	9
Small	40	20	-	60	8	-	-	-	10	2	20
Medium	17	20	-	37	10	-	-	-	8	2	20
Large	23	6	-	29	2	-	-	-	4	-	6
Very large	6	1	-	7	1	-	-	-	-	-	1
Total	133	59	-	192	28	-	-	-	24	4	59
Maize											
Marginal	11	25	-	36	17	-	-	-	4	4	25
Small	11	18	-	29	6	-	-	-	7	5	18
Medium	2	1	-	3		-	-	-	1	-	1
Large	-	-	-	-	-	-	-	-	-	-	-
Very large	-	-	-	-	-	-	-	-	-	-	-
Total	24	44	-	68	23	-	-	-	12	9	44
Cotton											
Marginal	2	3	-	5	1	-	-	-	2	-	3
Small	3	2	-	5	-	-	-	-	2	-	2
Medium	1	3	-	4	1	-	-	-	2	-	3
Large	2	-	-	2	-	-	-	-	-	-	-
Very large	-	-	-	-	-	-	-	-	-	-	-
Total	6	5	-	16	1	-	-	-	4	-	5

Table 3.5.2: Reasonable /unreasonable price paid for seed input for crop production in Punjab, 2018-19. **(Percent)**

Landholding categories	Reasonable	High	Very high	Total	Not subsidised	Very few sellers	No govt. Sellers	Pvt. Sellers collude	No price control	All of the above	Total
Paddy											
Marginal	84.75	15.25	-	100.00	77.78	-	-	-	22.22	-	100.00
Small	66.67	33.33	-	100.00	40.00	-	-	-	50.00	10.00	100.00
Medium	45.95	54.05	-	100.00	50.00	-	-	-	40.00	10.00	100.00
Large	79.31	20.69	-	100.00	33.33	-	-	-	66.67	-	100.00
Very large	85.71	14.29	-	100.00	100.00	-	-	-	-	-	100.00
Total	69.27	30.73	-	100.00	47.46	-	-	-	40.68	6.78	100.00
Maize											
Marginal	30.56	69.44	-	100.00	68.00	-	-	-	16.00	16.00	100.00
Small	37.93	62.07	-	100.00	33.33	-	-	-	38.89	27.78	100.00
Medium	66.67	33.33	-	100.00	-	-	-	-	100.00	-	100.00
Large	-	-	-	-	-	-	-	-	-	-	-
Very large	-	-	-	-	-	-	-	-	-	-	-
Total	35.29	64.71	-	100.00	52.27	-	-	-	27.27	20.45	100.00
Cotton											
Marginal	40.00	60.00	-	100.00	33.33	-	-	-	66.67	-	100.00
Small	60.00	40.00	-	100.00	-	-	-	-	100.00	-	100.00
Medium	25.00	75.00	-	100.00	33.33	-	-	-	66.67	-	100.00
Large	100.00	-	-	100.00	-	-	-	-	-	-	-
Very large	-	-	-	-	-	-	-	-	-	-	-
Total	37.50	31.25	-	100.00	20.00	-	-	-	80.00	-	100.00

Table 3.5.3: Reasonable /unreasonable price paid for seed input for crop production in Punjab, 2018-19. **(Number)**

Landholding categories	Reasonable	High	Very high	Total	Not subsidised	Very few sellers	No govt. Sellers	Pvt. Sellers collude	No price control	All of the above	Total
Wheat											
Marginal	4	4	-	8	2	-	-	-	1	1	4
Small	2	6	-	8	3	-	-	-	2	1	6
Medium	1	6	-	7	4	-	-	-	2	-	6
Large	2	1	-	3	1	-	-	-	-	-	1
Very large	1	1	-	2	-	-	-	-	1	-	1
Total	11	18	-	28	10	-	-	-	6	2	18
Potato											
Marginal	-	-	-	-	-	-	-	-	-	-	-
Small	-	1	-	1	-	-	-	-	-	1	1
Medium	-	-	-	-	-	-	-	-	-	-	-
Large	3	1	-	4	1	-	-	-	-	-	1
Very large	-	-	-	-	-	-	-	-	-	-	-
Total	3	2	-	5	1	-	-	-	-	1	2
Mungbean											
Marginal	-	-	-	-	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-	-	-	-	-
Medium	1	-	-	1	-	-	-	-	-	-	-
Large	5	-	-	5	-	-	-	-	-	-	-
Very large	1	-	-	1	-	-	-	-	-	-	-
Total	7	-	-	7	-	-	-	-	-	-	-
Spring maize											
Marginal	-	-	-	-	-	-	-	-	-	1	1
Small	-	1	-	1	-	-	-	-	-	-	-
Medium	-	4	-	4	2	-	-	-	1	1	4
Large	-	3	-	3	1	-	-	-	2	-	3
Very large	1	-	-	1	-	-	-	-	-	-	-
Total	1	8	-	9	-	-	-	-	-	-	8

Table 3.5.4: Reasonable /un reasonable price paid for seed input for crop production in Punjab, 2018-19. **(Percent)**

Landholding categories	Reasonable	High	Very high	Total	Not subsidised	Very few sellers	No govt. Sellers	Pvt. Sellers collude	No price control	All of the above	Total
Wheat											
Marginal	50.00	50.00	-	100.00	50.00	-	-	-	25.00	25.00	100.00
Small	25.00	75.00	-	100.00	50.00	-	-	-	33.33	16.67	100.00
Medium	14.29	85.71	-	100.00	66.67	-	-	-	33.33	-	100.00
Large	66.67	33.33	-	100.00	100.00	-	-	-	-	-	100.00
Very large	50.00	50.00	-	100.00	-	-	-	-	100.00	-	100.00
Total	39.29	64.29	-	100.00	55.56	-	-	-	33.33	11.11	100.00
Potato											
Marginal	-	-	-	-	-	-	-	-	-	-	-
Small	-	100.00	-	100.00	-	-	-	-	-	100.00	100.00
Medium	-	-	-	-	-	-	-	-	-	-	-
Large	75.00	25.00	-	100.00	100.00	-	-	-	-	-	100.00
Very large	-	-	-	-	-	-	-	-	-	-	-
Total	60.00	40.00	-	100.00	50.00	-	-	-	-	50.00	100.00
Mungbean											
Marginal	-	-	-	-	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-	-	-	-	-
Medium	100.00	-	-	100.00	-	-	-	-	-	-	-
Large	100.00	-	-	100.00	-	-	-	-	-	-	-
Very large	100.00	-	-	100.00	-	-	-	-	-	-	-
Total	100.00	-	-	100.00	-	-	-	-	-	-	-
Spring maize											
Marginal	-	-	-	-	-	-	-	-	-	100.00	100.00
Small	-	100.00	-	100.00	-	-	-	-	-	-	-
Medium	-	100.00	-	100.00	50.00	-	-	-	25.00	25.00	100.00
Large	-	100.00	-	100.00	33.33	-	-	-	66.67	-	100.00
Very large	100.00	-	-	100.00	-	-	-	-	-	-	-
Total	11.11	88.89	-	100.00	-	-	-	-	-	-	100.00

Table 3.5.5: Reasonable /unreasonable price paid for different inputs for crop production in Punjab, 2018-19. (Number)

Landholding categories	Reasonable	High	Very high	Total	Not subsidised	Very few sellers	No govt. Sellers	Pvt. Sellers collude	No price control	All of the above	Costly even after subsidized	Total
Fertilizers												
Marginal	79	24	-	103	-	-	-	-	-	-	24	24
Small	71	31	-	102	4	-	-	-	-	-	27	31
Medium	34	18	-	52	5	-	-	-	-	-	13	18
Large	23	12	-	35	4	-	-	-	-	-	8	12
Very large	5	3	-	8	1	-	-	-	-	-	2	3
Total	212	88	-	300	14	-	-	-	-	-	74	88
Manures												
Marginal	-	-	-	-	-	-	-	-	-	-	-	-
Small	1	1	-	2	-	1	-	-	-	-	-	1
Medium	2	3	-	5	-	3	-	-	-	-	-	3
Large	2	1	-	3	-	1	-	-	-	-	-	1
Very large	1	1	-	2	-	1	-	-	-	-	-	1
Total	6	6	-	12	-	6	-	-	-	-	-	6
Plant protection chemicals												
Marginal	79	24	-	103	4	-	-	6	12	2	-	24
Small	67	35	-	102	9	-	-	4	17	5	-	35
Medium	24	28	-	52	8	-	-	2	16	2	-	28
Large	19	16	-	35	3	-	-	4	7	2	-	16
Very large	5	3	-	8	-	-	-	2	1	-	-	3
Total	194	106	-	300	24	-	-	18	53	11	-	106

Table 3.5.6: Reasonable /unreasonable price paid for different inputs for crop production in Punjab, 2018-19. (Percent)

Landholding categories	Reasonable	High	Very high	Total	Not subsidised	Very few sellers	No govt. Sellers	Pvt. Sellers collude	No price control	All of the above	Costly even after subsidized	Total
Fertilizers												
Marginal	76.70	23.30	-	100.00	-	-	-	-	-	-	100.00	100.00
Small	69.61	30.39	-	100.00	12.90	-	-	-	-	-	87.10	100.00
Medium	65.38	34.62	-	100.00	27.78	-	-	-	-	-	72.22	100.00
Large	65.71	34.29	-	100.00	33.33	-	-	-	-	-	66.67	100.00
Very large	62.50	37.50	-	100.00	33.33	-	-	-	-	-	66.67	100.00
Total	70.67	29.33	-	100.00	15.91	-	-	-	-	-	84.09	100.00
Manures												
Marginal	-	-	-	-	-	-	-	-	-	-	-	
Small	50.00	50.00	-	100.00	-	100.00	-	-	-	-	-	100.00
Medium	40.00	60.00	-	100.00	-	100.00	-	-	-	-	-	100.00
Large	66.67	33.33	-	100.00	-	100.00	-	-	-	-	-	100.00
Very large	50.00	50.00	-	100.00	-	100.00	-	-	-	-	-	100.00
Total	50.00	50.00	-	100.00	-	100.00	-	-	-	-	-	100.00
Plant protection chemicals												
Marginal	76.70	23.30	-	100.00	16.67	-	-	25.00	50.00	8.33	-	100.00
Small	65.69	34.31	-	100.00	25.71	-	-	11.43	48.57	14.29	-	100.00
Medium	46.15	53.85	-	100.00	28.57	-	-	7.14	57.14	7.14	-	100.00
Large	54.29	45.71	-	100.00	18.75	-	-	25.00	43.75	12.50	-	100.00
Very large	62.50	37.50	-	100.00	-	-	-	66.67	33.33	-	-	100.00
Total	64.67	35.33	-	100.00	22.64	-	-	16.98	50.00	10.38	-	100.00

Table 3.5.7: Reasonable /unreasonable price paid for different inputs for crop production in Punjab, 2018-19. **(Number)**

Landholding categories	Reasonable	High	Very high	Total	Not subsidised	Very few sellers	No govt. Sellers	Pvt. Sellers collude	No price control	All of the above	Total
Diesel											
Marginal	-	26	1	27	-	-	-	-	27	-	27
Small	-	43	10	53	-	-	-	-	53	-	53
Medium	-	34	14	48	-	-	-	-	48	-	48
Large	-	26	9	35	-	-	-	-	35	-	35
Very large	-	5	3	8	-	-	-	-	8	-	8
Total	-	134	37	171	-	-	-	-	171	-	171
Human labour											
Marginal	96	7	-	103	-	3	-	-	4	-	7
Small	98	4	-	102	-	2	-	-	2	-	4
Medium	51	1	-	52	-	-	-	-	1	-	1
Large	34	1	-	35	-	-	-	-	1	-	1
Very large	8	-	-	8	-	-	-	-	-	-	-
Total	287	13	-	300	-	5	-	-	8	-	13
Irrigation											
Marginal	46	6	-	52	-	5	-	-	1	-	5
Small	8	5	-	13	-	5	-	-	-	-	5
Medium	1	2	-	3	1	-	-	-	1	-	2
Large	-	5	2	7	1	-	-	-	6	-	7
Very large				-	-	-	-	-	-	-	-
Total	55	18	2	75	2	10	-	-	8	-	20

Table 3.5.8: Reasonable /unreasonable price paid for different inputs for crop production in Punjab, 2018-19. **(Percent)**

Landholding categories	Reasonable	High	Very high	Total	Not subsidised	Very few sellers	No govt. Sellers	Pvt. Sellers collude	No price control	All of the above	Total
Diesel											
Marginal	-	96.30	3.70	100.00	-	-	-	-	100.00	-	100.00
Small	-	81.13	18.87	100.00	-	-	-	-	100.00	-	100.00
Medium	-	70.83	29.17	100.00	-	-	-	-	100.00	-	100.00
Large	-	74.29	25.71	100.00	-	-	-	-	100.00	-	100.00
Very large	-	62.50	37.50	100.00	-	-	-	-	100.00	-	100.00
Total	-	78.36	21.64	100.00	-	-	-	-	100.00	-	100.00
Human labour											
Marginal	-	-	-	-	-	42.86	-	-	57.14	-	100.00
Small	96.08	3.92	-	100.00	-	50.00	-	-	50.00	-	100.00
Medium	98.08	1.92	-	100.00	-	-	-	-	100.00	-	100.00
Large	97.14	2.86	-	100.00	-	-	-	-	100.00	-	100.00
Very large	100.00	-	-	100.00	-	-	-	-	-	-	-
Total	95.67	4.33	-	100.00	-	38.46	-	-	61.54	-	100.00
Irrigation											
Marginal	88.46	11.54	-	100.00	-	100.00	-	-	20.00	-	100.00
Small	61.54	38.46	-	100.00	-	100.00	-	-	-	-	100.00
Medium	33.33	66.67	-	100.00	50.00	-	-	-	50.00	-	100.00
Large	-	71.43	28.57	100.00	14.29	-	-	-	85.71	-	100.00
Very large	-	-	-	-	-	-	-	-	-	-	-
Total	73.33	24.00	2.67	100.00	10.00	50.00	-	-	40.00	-	100.00

Table 3.5.9: Reasonable /un reasonable price paid for different inputs for crop production in Punjab, 2018-19. **(Number)**

Landholding categories	Reasonable	High	Very high	Total	Not subsidised	Very few sellers	No govt. Sellers	Pvt. Sellers collude	No price control	All of the above	Costly even after subsidized	Total
Minor repair and maintenance of machinery and equipment												
Marginal	24	3	-	27	-	-	-	-	3	-	-	3
Small	51	2	-	53	-	1	-	-	1	-	-	2
Medium	42	6	-	48	-	1	5	-	-	-	-	6
Large	27	7	1	35	-	3	5	-	-	-	-	8
Very large	5	3		8	-	2	1	-	-	-	-	3
Total	149	21	1	171	-	7	11	-	4	-	-	22
Cost of hiring machinery												
Marginal	80	23		103	14	3	-	-	5	1	-	23
Small	68	29	5	102	21	9	-	-	2	2	-	34
Medium	48	2	2	52	-	-	-	-	4	-	-	4
Large	35	-	-	35	-	-	-	-	-	-	-	-
Very large	6	2	-	8	1	-	-	-	1	-	-	2
Total	237	56	7	300	36	12	-	-	12	3	-	63
Lease rent for land												
Marginal	3	-	2	5	-	-	-	-	2	-	-	2
Small	1	2	8	11	-	-	-	-	10	-	-	10
Medium	7	5	8	20	-	-	-	-	13	-	-	13
Large	7	9	8	24	-	-	-	-	17	-	-	17
Very large	2	4	2	8	-	-	-	-	6	-	-	6
Total	20	20	28	68	-	-	-	-	48	-	-	48
Other expenses												
Marginal	103	-	-	103	-	-	-	-	-	-	-	-
Small	102	-	-	102	-	-	-	-	-	-	-	-
Medium	52	-	-	52	-	-	-	-	-	-	-	-
Large	35	-	-	35	-	-	-	-	-	-	-	-
Very large	8	-	-	8	-	-	-	-	-	-	-	-
Total	300	-	-	300	-	-	-	-	-	-	-	-
Total expenses												
Marginal	54	49	-	103	1	-	1	-	29	2	16	49
Small	41	56	5	102	3	1	-	-	47	2	8	61
Medium	14	32	6	52	2	1	-	-	28	2	5	38
Large	5	21	9	35	4	-	-	-	22	2	2	30
Very large	-	6	2	8	1	2	1	-	6	1	-	8
Total	114	164	22	300	11	2	1	-	132	9	31	186

Table 3.5.10: Reasonable /unreasonable price paid for different inputs for crop production in Punjab, 2018-19. (Percent)

Landholding categories	Reasonable	High	Very high	Total	Not subsidised	Very few sellers	No govt. Sellers	Pvt. Sellers collude	No price control	All of the above	Costly even after subsidized	Total
Minor repair and maintenance of machinery and equipment												
Marginal	88.89	11.11	-	100.00	-	-	-	-	100.00	-	-	100.00
Small	96.23	3.77	-	100.00	-	50.00	-	-	50.00	-	-	100.00
Medium	87.50	12.50	-	100.00	-	16.67	83.33	-	-	-	-	100.00
Large	77.14	20.00	2.86	100.00	-	37.50	62.50	-	-	-	-	100.00
Very large	62.50	37.50	-	100.00	-	66.67	33.33	-	-	-	-	100.00
Total	87.14	12.28	0.58	100.00	-	31.82	50.00	-	18.18	-	-	100.00
Cost of hiring machinery												
Marginal	77.67	22.33		100.00	60.87	13.04	-	-	21.74	4.35	-	100.00
Small	66.67	28.43	4.90	100.00	61.76	26.47	-	-	5.88	5.88	-	100.00
Medium	92.31	3.85	3.85	100.00	-	-	-	-	100.00	-	-	100.00
Large	100.00	-	-	100.00	-	-	-	-	-	-	-	-
Very large	75.00	25.00	-	100.00	50.00	-	-	-	50.00	-	-	100.00
Total	79 00	18.67	2.33	100.00	57.14	19.05	-	-	19.05	4.76	-	100.00
Lease rent for land												
Marginal	60.00	-	40.00	100.00	-	-	-	-	100.00	-	-	100.00
Small	9.09	18.18	72.73	100.00	-	-	-	-	100.00	-	-	100.00
Medium	35.00	25.00	40.00	100.00	-	-	-	-	100.00	-	-	100.00
Large	29.17	37.50	33.33	100.00	-	-	-	-	100.00	-	-	100.00
Very large	25.00	50.00	25.00	100.00	-	-	-	-	100.00	-	-	100.00
Total	29.41	29.41	41.18	100.00	-	-	-	-	100.00	-	-	100.00
Other expenses												
Marginal	100.00	-	-	100.00	-	-	-	-	-	-	-	-
Small	100.00	-	-	100.00	-	-	-	-	-	-	-	-
Medium	100.00	-	-	100.00	-	-	-	-	-	-	-	-
Large	100.00	-	-	100.00	-	-	-	-	-	-	-	-
Very large	100.00	-	-	100.00	-	-	-	-	-	-	-	-
Total	100.00	-	-	100.00	-	-	-	-	-	-	-	-
Total expenses												
Marginal	52.43	47.57	-	100.00	2.04	-	2.04	-	59.18	4.08	32.65	100.00
Small	40.20	54.90	4.90	100.00	4.92	1.64	-	-	77.05	3.28	13.11	100.00
Medium	26.92	61.54	11.54	100.00	5.26	2.63	-	-	73.68	5.26	13.16	100.00
Large	14.29	60.00	25.71	100.00	13.33	-	-	-	73.33	6.67	6.67	100.00
Very large	-	75.00	25.00	100.00	12.50	25.00	12.50	-	75.00	12.50	-	100.00
Total	38.00	54.67	7.33	100.00	5.91	1.08	0.54	-	70.97	4.84	16.67	100.00

CHAPTER 4

ANIMAL PRODUCTS AND INPUT MARKETS

This chapter has been discussed under the following heads:

4.1 Sale of various products (eggs, milk etc) and the Marketing channels

4.2 Usefulness of these channels and reasons for dissatisfaction, if any

4.3 Adequacy of price received and if inadequate, reasons for the same

4.4 Details of all the inputs used and their procurement channels (farm saved, purchased etc)

4.5 Expenditure incurred and quality of inputs

4.6 Whether price paid for inputs is reasonable and reasons if not

4.1 Sale of animal products and their marketing channels

Majority of the households i.e. 137 (79.19%) sold milk to local traders(vendors) followed by government agency(16.76%) . Only six of the households (3.47%) were found selling milk directly to other households (Table 4.1.1). Across landholding categories majority of the marginal (83.02%), small (86%), medium (74.29%), large (70.37%) and very large (62.50%) farmers sold their milk to local traders. Majority of large farmers (37.50%) preferred to sell their milk to cooperative and government agency as compared to marginal (13.21%), small (12%), medium (14.29%), large (29.63%) farmers. None of the large and very large farmers sold milk directly to households and commission agents.

It was brought out that all the sampled farmers used these channels as their first disposal for sale of their animal products.

Table 4.1.1: Agencies through which the milk produce from animal husbandry was sold in first major disposal in Punjab, 2018-19.

(Number)

Landholding categories	Directly to other household	Local trader	Commission agent	Cooperative & Govt agency	Processor	Total
Marginal	2	44	-	7	-	53
%	3.77	83.02	-	13.21	-	100.00
Small	-	43	1	6	-	50
%	-	86.00	2.00	12.00	-	100.00
Medium	4	26	-	5	-	35
%	11.43	74.29	-	14.29	-	100.00
Large	-	19	-	8	-	27
%	-	70.37	-	29.63	-	100.00
Very large	-	5	-	3	-	8
%	-	62.50	-	37.50	-	100.00
Total	6	137	1	29	-	173
%	3.47	79.19	0.58	16.76	-	100.00

Product wise total monthly sale value has been shown in Table 4.1.2 and it is revealed that all the households obtained returns from the sale of milk only. The returns from sale of milk were obtained highest among the households of small category (Rs.8.06lakh) followed by medium (Rs.4.54lakh), marginal (Rs.4.36 lakh) and large category (Rs.4.28lakh). Very large farmers obtained least returns (Rs.95, 100) from sale of milk. The total sale value for the lactation period was to the tune of Rs. 34.90 lakh on marginal, Rs. 64.55 lakh on small, Rs. 36.36 lakh on medium farms , Rs. 34.28 lakh on large farms and Rs. 7.60 lakh on very large farms .On the whole , the total sale value for lactation period was estimated as Rs. 1.77 crore.

Per farm monthly sale value of the products on different categories of farms has been presented in Table 4.1.3. As the sampled farmers received money from the sale of milk only, therefore, the monthly sale value of milk on marginal, small, medium, large and very large farms was Rs. 4236, Rs. 7912, Rs. 8743, Rs. 12244 and Rs. 11888 respectively. For lactation period , per farm sale value on the respective farm situations was Rs. 33888, Rs. 63296, Rs. 69944, Rs. 97952, and Rs. 95104 respectively. Overall, sale value of milk for lactation period was to the tune of Rs. 59240.

Table 4.1.2: Product wise total sale value in Punjab, 2018-19. **(Rs)**

Landholding categories	Milk	Egg	Live animals	Wool	Other produce	Monthly sale value	Total sale value for lactation period
Marginal	436345	-	-	-	-	436345	3490760
Small	806990	-	-	-	-	806990	6455920
Medium	454610	-	-	-	-	454610	3636880
Large	428550	-	-	-	-	428550	3428400
Very large	95100	-	-	-	-	95100	760800
Total	2221595	-	-	-	-	2221595	17772760

Table 4.1.3: Per farm product wise total sale value in Punjab, 2018-19. (Rs)

Landholding categories	Milk	Egg	Live animals	Wool	Other produce	Monthly sale value	Total sale value for lactation period
Marginal	4236	-	-	-	-	4236	33888
Small	7912	-	-	-	-	7912	63296
Medium	8743	-	-	-	-	8743	69944
Large	12244	-	-	-	-	12244	97952
Very large	11888	-	-	-	-	11888	95104
Overall	7405	-	-	-	-	7405	59240

4.2 Usefulness of disposal channels and reasons for dissatisfaction

The satisfaction/dissatisfaction felt with the disposal channels for selling their milk produce by the farmers is presented in Table 4.2.1. The satisfaction was revealed by 37.57 percent of the sampled farmers with the disposal channels for selling their produce. Across the landholding categories, more of large farmers (44.44%) were satisfied with the disposal channels followed by small (40%), marginal (39.62%), very large farmers (37.50%) and medium farmers (25.71%) respectively. Out of 65.43 percent of the farmers who revealed dissatisfaction regarding the disposal channels, 45.66 percent reported dissatisfaction due to receiving lower price than the market price.and 16.77 percent revealed delayed payments for the dissatisfaction with the disposal channels for milk produce. The lower price was revealed by majority of the medium farmers (65.71%) followed by very large (50%) ,small (42%), marginal (39.62%) and large (34.04%) farmers respectively. More number of marginal farmers (20.76%) were dissatisfied with the disposal channels for delayed payments followed by large (18.52%), small (18%), very large (12.50%) and medium (8.58 %) respectively.

Table4.2.1: Reasons for dissatisfaction regarding disposal channels of milk produce in Punjab, 2018-19. (Number)

Landholding categories	Satisfactory	Lower than market price	Delayed payments	Deductions for loans borrowed	Faulty weighing and grading	Total
Marginal	21	21	11	-	-	53
%	39.62	39.62	20.76	-	-	100.00
Small	20	21	9	-	-	50
%	40.0	42.0	18.0	-	-	100.00
Medium	9	23	3	-	-	35
%	25.71	65.71	8.58	-	-	100.00
Large	12	10	5	-	-	27
%	44.44	37.04	18.52	-	-	100.00
Very large	3	4	1	-	-	8
%	37.50	50.0	12.50	-	-	100.0
Total	65	79	29	-	-	173
%	37.57	45.66	16.77	-	-	100.00

4.3 Adequacy of price received and if inadequate, reasons for the same

The sampled farmers revealed the reasons for unreasonable prices received from the sale of milk and the same is presented in Table 4.3.1. The major reason reported by majority58 of the sampled farmers (53.70%) was of no minimum support price for milk. Un-assured procurement by government was another reason reported by 33 sampled farmers (30.56%) while 16 sampled farmers (14.81%) reported that there were few buyers of milk. Buyers collude and pay unreasonable price to the farmers was revealed by one sampled farmer The unreasonable price received from the sale of milk was due to no minimum price as this was revealed by marginal (53.13%), small (46.67%), medium (57.69%), large (60%) and very large farmers (60%). No government purchase of milk was another reason revealed by marginal (43.75%), medium (42.31%), large and very large farmers (40% each) except the small farmers. Very few buyers as the reason for unreasonable price was revealed by only small farmers (53.33%).

Table 4.3.1: Reasons for unreasonable prices received from the sale of milk produce in Punjab, 2018-19. **(Number)**

Landholding categories	Very few buyers	No govt. Purchase	Pvt buyers collude	No minimum price	Total
Marginal	-	14	1	17	32
%	-	43.75	3.13	53.13	100.00
Small	16	-	-	14	30
%	53.33	-		46.67	100.00
Medium	-	11	-	15	26
%	-	42.31		57.69	100.00
Large	-	6	-	9	15
%	-	40.00		60.00	100.00
Very large	-	2	-	3	5
%	-	40.00		60.00	100.00
Total	16	33	1	58	108
%	14.81	30.56	0.93	53.70	100.00

4.4 Details of all the inputs used and their procurement channels (farm saved, purchased etc)

The procurement of various inputs related to animal husbandry and the agency through which these inputs were purchased has been presented in Tables 4.4.1 to 4.4.3. All the farmers on different landholding categories viz. 67 marginal (100%), 80 small (100%), 48 medium (100%), 30 large (100%) and 8 very large (100%) used farm saved green (Table 4.4.1) as well as dry fodder (Table 4.4.2). In the case of concentrates, only very large farmers purchased the concentrates while the other category of farmers i.e. marginal, small, medium

and large farmers used both farm saved and purchased concentrates. It was found that 100 percent of the very large farmers used purchased concentrates while 82 .09 percent, 87.50 percent, 79.17 percent, 93.33 percent of the marginal, small, medium and large farmers used purchased concentrates. Farm saved concentrates were used by marginal (17.91%), small (12.50%), medium (20.83%) and large farmers (6.67%) respectively (Table 4.4.3)

The agencies from whom the farmers procured inputs are presented in (Table 4.4.4 to 4.4.6).

All the households (100%) in each category used own farm green fodder as well as dry fodder. Thus, green fodder and dry fodder was not purchased by any of the farmer in each category from any other agency (Table 4.4.4 and Table 4.4.5)

Farmers used concentrates purchased from input dealers On the whole, 199 sampled farmers (85.41%) out of 233 farmers purchased concentrates from input dealers while 34 farmers (14.59%) used concentrates of their own farm. The concentrates purchased from input dealers by 82.09 percent, 87.50 percent, 79.17 percent, 93.33 percent and 100 percent of marginal, small, medium, large and very large farmers. More of medium farmers (20.83%) used own farm concentrates as compared to the farmers of other categories.

Table 4.4.1: Procurement of green fodder related to animal husbandry in Punjab, 2018-19.

(Number)

Landholding categories	Farm saved	Exchanged	Purchased	Borrowed	Total
Marginal	67	-	-	-	67
%	100.00	-	-	-	100.00
Small	80	-	-	-	80
%	100.00	-	-	-	100.00
Medium	48	-	-	-	48
%	100.00	-	-	-	100.00
Large	30	-	-	-	30
%	100.00	-	-	-	100.00
Very large	8	-	-	-	8
%	100.00	-	-	-	100.00
Total	233	-	-	-	233
%	100.00	-	-	-	100.00

Table 4.4.2: Procurement of dry fodder related to animal husbandry in Punjab, 2018-19.

(Number)

Landholding categories	Farm saved	Exchanged	Purchased	Borrowed	Total
Marginal	67	-	-	-	67
%	100.00	-	-	-	100.00
Small	80	-	-	-	80
%	100.00	-	-	-	100.00
Medium	48	-	-	-	48
%	100.00	-	-	-	100.00
Large	30	-	-	-	30
%	100.00	-	-	-	100.00
Very large	8	-	-	-	8
%	100.00	-	-	-	100.00
Total	233	-	-	-	233
%	100.00	-	-	-	100.00

Table 4.4.3: Procurement of concentrates related to animal husbandry in Punjab, 2018-19.

(Number)

Landholding categories	Farm saved	Exchanged	Purchased	Borrowed	Total
Marginal	12	-	55	-	67
%	17.91	-	82.09	-	100.00
Small	10	-	70	-	80
%	12.50	-	87.50	-	100.00
Medium	10	-	38	-	48
%	20.83	-	79.17	-	100.00
Large	2	-	28	-	30
%	6.67	-	93.33	-	100.00
Very large	-	-	8	-	8
%	-	-	100.00	-	100.00
Total	34	-	199	-	233
%	14.59	-	85.41	-	100.00

Table 4.4.4: Agencies through which green fodder to animal husbandry was procured in Punjab, 2018-19. **(Number)**

Landholding categories	Own farm	Local trader	Input dealer	Cooperative & govt.agency	Others	Total
Marginal	67	-	-	-	-	67
%	100.00	-	-	-	-	100.00
Small	80	-	-	-	-	80
%	100.00	-	-	-	-	100.00
Medium	48	-	-	-	-	48
%	100.00	-	-	-	-	100.00
Large	30	-	-	-	-	30
%	100.00	-	-	-	-	100.00
Very large	8	-	-	-	-	8
%	100.00	-	-	-	-	100.00
Total	233	-	-	-	-	233
%	100.00	-	-	-	-	100.00

Table 4.4.5: Agencies through which dry fodder to animal husbandry was procured in Punjab, 2018-19. **(Number)**

Landholding categories	Own farm	Local trader	Input dealer	Cooperative &govt.agency	Others	Total
Marginal	67	-	-	-	-	67
%	100.00	-	-	-	-	100.00
Small	80	-	-	-	-	80
%	100.00	-	-	-	-	100.00
Medium	48	-	-	-	-	48
%	100.00	-	-	-	-	100.00
Large	30	-	-	-	-	30
%	100.00	-	-	-	-	100.00
Very large	8	-	-	-	-	8
%	100.00	-	-	-	-	100.00
Total	233	-	-	-	-	233
%	100.00	-	-	-	-	100.00

Table 4.4.6: Agencies through which concentrates to animal husbandry was procured in Punjab, 2018-19. **(Number)**

Landholding categories	Own farm	Local trader	Input dealer	Cooperative &govt. Agency	Others	Total
Marginal	12	-	55	-	-	67
%	17.91	-	82.09	-	-	100.00
Small	10	-	70	-	-	80
%	12.50	-	87.50	-	-	100.00
Medium	10	-	38	-	-	48
%	20.83	-	79.17	-	-	100.00
Large	2	-	28	-	-	30
%	6.67	-	93.33	-	-	100.00
Very large	-	-	8	-	-	8
%	-	-	100.00	-	-	100.00
Total	34	-	199	-	-	233
%	14.59	-	85.41	-	-	100.00

4.5 Expenditure incurred and quality of inputs

The total expenses incurred for the purchase of inputs related to animal husbandry has been presented in Table 4.5.1.A perusal of table reveals that the investment on the purchase of animals i.e. on buffalo and cattle were found highest on small farms (Rs.82.47 lakh) followed by large farms (Rs.67.70 lakh), medium farms (Rs.53.10 lakh and very large farms (Rs.15.50 lakh). It was observed that the total investment incurred on the purchase of animals was Rs.2.75 crore. The total monthly variable expenditure for the purchase of inputs related to animal husbandry was Rs. 16.14 lakh, of which on marginal, small, medium, large and very large farms , the expenditure was to the tune of Rs. 3.35 lakh, Rs. 5.06 lakh, Rs. 3.77 lakh , Rs. 3.12 lakh and Rs. 82796 respectively. For lactation period, the total variable expenses related to animal husbandry was Rs. 26.81 lakh, Rs. 40.51 lakh, Rs. 30.20 lakh, Rs. 25.00 lakh and Rs. 6.62 lakh respectively on the farms of respective landholding categories. The monthly total variable expenses was found highest on concentrates (Rs. 8.12 lakh) followed by green fodder (Rs. 4.70 lakh) , dry fodder (Rs. 1.95 lakh) veterinary expenses(Rs. 77390), other expenses (Rs. 36665), Interest (Rs. 12022) and labour charges(Rs 9890) respectively. The expenses on green fodder and concentrates were found highest on small farms (Rs 1.43 lakh and Rs. 2.59 lakh respectively). Further on small farms expenses for veterinary expenses and interest were also found highest.

Table 4.5.1: Total expenses incurred for the purchase of inputs related to animal husbandry in Punjab, 2018-19. **(Rs)**

Landholding categories	Investment on animals			Monthly variable expenses									Total variable expenses for lactation period
				Animal feed			Veterinary charges	Labour charges	Other expenses	Interest	Lease rent for land	Total monthly variable expenses	
	Cattle/ buffalo	Sheep/ Goat/ Piggery	Poultry & duckery	Green fodder	Dry fodder	Concentrates							
Marginal	5310000	-	-	104390	41365	160000	18590	-	8395	2496	-	335236	2681888
Small	8247000	-	-	143514	61163	259280	24050	3100	11500	3770	-	506377	4051016
Medium	5701000	-	-	105170	43325	201344	15550	1950	7450	2811	-	377600	3020800
Large	6770000	-	-	94680	37645	151950	15100	3400	7450	2327	-	312552	2500416
Very large	1550000	-	-	22820	12450	39500	4100	1440	1870	616	-	82796	662368
Total	27578000	-	-	470574	195948	812074	77390	9890	36665	12020	-	1614561	12916488

Per farm expenses incurred on the purchase of inputs related to animal husbandry has been presented in Table 4.5.2. A perusal of table reveals that per farm investment on the purchase of animals i.e. on buffalo and cattle were found highest on very large (Rs.1.93 lakh) and large farms (Rs.1.93 lakh), followed by medium farms (Rs.1.09 lakh), small farms (Rs 80853) and marginal farms (51553) respectively. It was observed that overall, per farm total expenses incurred on the purchase of animals was Rs. 91927. Overall, the total monthly per farm variable expenditure for the purchase of inputs related to animal husbandry was Rs.5382 On marginal ,small, medium ,large and very large farms , monthly per farm variable expenditure was to the tune of Rs. 3254, Rs.4965, Rs.7262 , Rs.8929 and Rs.10351 respectively. For lactation period, the total per farm variable expenses related to animal husbandry was Rs. 26032, Rs. 39720, Rs.58096, Rs.71432 and Rs. 82808 respectively on the farms of respective landholding categories. The monthly total variable expenses was found highest on concentrates(Rs. 2707) followed by green fodder (Rs.1569), dry fodder (Rs.653), veterinary expenses (Rs.258), other expenses (Rs.122), Interest (Rs.40) and labour charges (Rs 33) respectively. The per farm expenses on green fodder, dry fodder and concentrates were found highest on very large farms thus indicting that these expenses increased with farm size.

Table 4.5.2: Per farm expenses incurred for the purchase of inputs related to animal husbandry in Punjab, 2018-19. (Rs/farm)

Landholding categories	Investment on animals			Monthly variable expenses									
				Animal feed			Veterinary charges	Labour charges	Other expenses	Interest	Lease rent for land	Total monthly variable expenses	Total variable expenses for lactation period
	Cattle/ buffalo	Sheep/ Goat/ Piggery	Poultry & duckery	Green fodder	Dry fodder	Concentrates							
Marginal	51553	-	-	1013	402	1553	180	-	82	24	-	3254	26032
Small	80853	-	-	1407	600	2542	236	30	113	37	-	4965	39720
Medium	109635	-	-	2023	833	3872	299	38	143	54	-	7262	58096
Large	193429	-	-	2705	1076	4341	431	97	213	66	-	8929	71432
Very large	193750	-	-	2853	1556	4938	513	180	234	77	-	10351	82808
Total	91927	-	-	1569	653	2707	258	33	122	40	-	5382	43055

Quality of inputs

The quality of animals (cattle / buffalo) was revealed good and satisfactory by 56 percent and 42 percent of the percent of the livestock farmers respectively while both good and satisfactory and both good and poor was revealed by one percent each of the farmer. On the whole, the animals reported was of good quality by majority of the medium farmers (63%), while quality of animals just as satisfactory was revealed by majority of the marginal farmers (54%). Animal feed i.e. green fodder used by 100 percent of the livestock farmers was of good quality (Table 4.5.3). Across the land holding categories, the same was revealed by 67 marginal (100 %), 81small (100 %), 48 medium (100 %), 30 large (100 %) and 8 very large farmers (100 %) respectively.

The good quality of dry fodder was used by 100 percent of the sampled farmers and the same was revealed by 67 marginal (100 %), 81 small (100 %), 48 medium (100 %), 30 large (100 %) and 8 very large farmers (100 %) respectively across the land holding categories.

As the farmers used purchased concentrates, for which quality of concentrates was revealed good by 97 percent of the sampled farmers and only 3 percent of the farmers reported the concentrates of satisfactory quality., Amongst the farmers of different land holding categories, good quality of concentrates was revealed by 100 percent each of small, large and very large farmers followed by 96 percent and 94 percent of the marginal and medium farmers respectively. The satisfactory quality of concentrates was reported by 4 percent and 6 percent of the marginal and medium farmers respectively.

Table 4.5.3: Quality of animals and animal inputs (green fodder, dry fodder and concentrates) in Punjab, 2018-19. (Number)

Landholding categories	Good	%	Satisfactory	%	Both good& satisfactory	%e	Both good and poor	%	Poor	%	Don't know	%	Total	%
Animals-cattle/buffalo														
Marginal	31	46.0	36	54.0	-	-	-	-	-	-	-	-	67	100.00
Small	47	58.75	33	41.25	-	1.0	-	-	-	-	-	-	80	100.00
Medium	30	63.0	18	37.0	-	-	-	-	-	-	-	-	48	100.0
Large	18	60.0	10	33.0	-	-	2	7.0	-	-	-	-	30	100.0
Very large	5	62.0	2	25.0	1	13.0	-	-	-	-	-	-	8	100.0
Total	131	56.0	99	42.0	2	1.0	2	1.0	-	-	-	-	233	100.0
Animal feed - green fodder														
Marginal	67	100.0	-	-	-	-	-	-	-	-	-	-	67	100.0
Small	80	100.0	-	-	-	-	-	-	-	-	-	-	80	100.0
Medium	48	100.0	-	-	-	-	-	-	-	-	-	-	48	100.0
Large	30	100.0	-	-	-	-	-	-	-	-	-	-	30	100.0
Very large	8	100.0	-	-	-	-	-	-	-	-	-	-	8	100.0
Total	233	100.0	-	-	-	-	-	-	-	-	-	-	233	100.0
Animal feed - dry fodder														
Marginal	67	100.0	-	-	-	-	-	-	-	-	-	-	67	100.0
Small	80	100.0	-	-	-	-	-	-	-	-	-	-	80	100.0
Medium	48	100.0	-	-	-	-	-	-	-	-	-	-	48	100.0
Large	30	100.0	-	-	-	-	-	-	-	-	-	-	30	100.0
Very large	8	100.0	-	-	-	-	-	-	-	-	-	-	8	100.0
Total	233	100.0	-	-	-	-	-	-	-	-	-	-	233	100.0
Animal feed - concentrates														
Marginal	64	96.0	3	4.0	-	-	-	-	-	-	-	-	67	100.0
Small	80	100.0			-	-	-	-	-	-	-	-	80	100.0
Medium	45	94.0	3	6.0	-	-	-	-	-	-	-	-	48	100.0
Large	30	100.0	-	-	-	-	-	-	-	-	-	-	30	100.0
Very large	8	100.0	-	-	-	-	-	-	-	-	-	-	8	100.0
Total	227	97.0	6	3.0	-	-	-	-	-	-	-	-	233	100.0

4.6 Reasonable/unreasonable price paid for inputs and reasons for unreasonable price

Farmers' perceptions regarding the prices paid for various inputs used in animal husbandry has been presented in Table 4.6.1 to 4.6.3.As the sampled farmers used green fodder as well as dry fodder of their own farm and they didnôt pay price for these fodders. The sampled farmers paid price for purchased concentrates. It was revealed by 219 sampled farmers(93.99%) that prices paid for concentrates were reasonable while the rest of 13 farmers (5.58%) considered the prices of concentrates as high and only one farmer (0.43%) revealed concentrates prices as very high (Table 4.6.3).

The prices for concentrates were revealed unreasonable by 42.86 percent and 57.14 percent farmers respectively due to non availability of subsidised concentrates and no control over their prices. Non subsidised concentrates for unreasonable prices was reported by 57.14 percent and 50 percent of the small and medium farmers respectively while no control over prices was stated by 100 percent each of the marginal and large farmers, 42.86 percent and 50 percent of the small and medium farmers respectively as the reasons for unreasonable prices (Table 4.6.4).

Table 4.6.1: Reasonable/unreasonable price paid for the green fodder related to animal husbandry in Punjab, 2018-19. **(Number)**

Landholding categories	Reasonable	High	Very high	Total
Marginal	67	-	-	67
%	100.00	-	-	100.00
Small	80	-	-	80
%	100.00	-	-	100.00
Medium	48	-	-	48
%	100.00	-	-	100.00
Large	30	-	-	30
%	100.00	-	-	100.00
Very large	8	-	-	8
%	100.00	-	-	100.00
Total	233	-	-	233
%	100.00	-	-	100.00

Table 4.6.2: Reasonable/unreasonable price paid for the dry fodder related to animal husbandry in Punjab, 2018-19. **(Number)**

Landholding categories	Reasonable	High	Very high	Total
Marginal	67	-	-	67
%	100.00	-	-	100.00
Small	80	-	-	80
%	100.00	-	-	100.00
Medium	48	-	-	48
%	100.00	-	-	100.00
Large	30	-	-	30
%	100.00	-	-	100.00
Very large	8	-	-	8
%	100.00	-	-	100.00
Total	233	-	-	233
%	100.00	-	-	100.00

Table 4.6.3: Reasonable/unreasonable price paid for the concentrates related to animal husbandry in Punjab, 2018-19. **(Number)**

Landholding categories	Reasonable	High	Very high	Total
Marginal	66	1	-	67
%	98.51	1.49	-	100.00
Small	73	7	-	80
%	91.25	8.75	-	100.00
Medium	44	3	1	48
%	91.67	6.25	2.08	100.00
Large	28	2	-	30
%	93.33	6.67	-	100.00
Very large	8	-	-	8
%	100.00	-	-	100.00
Total	219	13	1	233
%	93.99	5.58	0.43	100.00

Table 4.6.4: Reasons for unreasonable prices paid for the concentrates related to animal husbandry in Punjab, 2018-19. **(Number)**

Landholding categories	Not subsidized	Very few sellers	No govt. sellers	Pvt. sellers collude	No price control	Total
Marginal	-	-	-	-	1	1
%	-	-	-	-	100.00	100.00
Small	4	-	-	-	3	7
%	57.14	-	-	-	42.86	100.00
Medium	2	-	-	-	2	4
%	50.00	-	-	-	50.00	100.00
Large	-	-	-	-	2	2
%	-	-	-	-	100.00	100.00
Very large	-	-	-	-	-	-
%	-	-	-	-	-	-
Total	6	-	-	-	8	14
%	42.86	-	-	-	57.14	100.00

CHAPTER 5

LABOUR MARKET

5.1 Details of labour use: Types of labour (family labour, farm servant, hired labouretc); number of days employed and number of hours per day

5.2 Wage rate; whether the wage rate is reasonable and the reasons if not

5.3 Details of labour supply

5.3.1 including the number of households engaged as wage labour duration; wage rate

5.3.2 various constraints to working as wage labour such as low demand, low wage rate, harsh conditions etc.

5.1 Details of labour use: Types of labour employed; number of days employed and number of hours per day

A perusal of Table 5.1.1 reveals the average number of labour employed for farming and livestock operations were 2.69. Out of which, the number of family labour was 2.21 (1.52 male, 0.67 female and 0.02 children) while farm servants and casual labour was 0.15 (0.103 male and 0.05 female) and 0.33 respectively. The proportion of male labour in family labour (68.78%) were found to be more than that of female labour (30.32%). The number of casual labour was employed more on very large category (1.25) as compared to other categories of farmers.

The labour persons employed for average number of hours per day is presented in Table 5.1.2. On the whole, casual labour worked for 2.59 hours for farming and livestock activities while the family labour and farm servants worked for 2.22 hours(1.51 male + 0.70 female + 0.012 children) and 0.77 hours (0.72 male + 0.05 female) respectively. On very large farm, farm servants (7.31 hours) and casual labour (8 hours) found worked for more hours per day as compared to family labour who worked for 4.5 hours (3.13 male + 1.31 female + 0.06 children) per day.

Per farm average number of labour man days used in farming and livestock operations is presented in Table 5.1.3. On the whole, for farming and livestock operations, males in family labour worked for 68.54 man days while the female worked for 32.02 man days in a year. The farm servants were employed for 25.48 man days. Out of which male farm servants worked for 23.18 man days while female farm servants were employed for 2.3 man days in a year. The casual labourers were employed for 12.02 days. It was observed that more of farm servants were employed on large and very large farms as compared to small and medium farmers. None of the farm servants was found to be employed on marginal farms.

Table 5.1.1: Average number of labour employed for farming and livestock operations in Punjab, 2018-19 **(Per annum)**

Landholding categories	Family labour			Farm servants		Casual labour	
	Male	*Female*	*Children*	*Male*	*Female*	*Male*	*Female*
Marginal	1.35	0.56	0.003	-	-	0.16	-
Small	1.55	0.68	0.029	0.04	0.04	0.15	-
Medium	1.54	0.83	-	0.06	0.06	0.56	-
Large	1.71	0.66	-	0.46	0.14	0.86	-
Very large	2.25	1.0	0.25	1.0	0.25	1.25	-
Total	1.52	0.67	0.02	0.103	0.05	0.33	-

Table 5.1.2: Average hours per day of labour employed for farming and livestock operations in Punjab, 2018-19.

Landholding categories	Family labour			Farm servants		Casual labour	
	Male	*Female*	*Children*	*Male*	*Female*	*Male*	*Female*
Marginal	1.08	0.51	0.01	-	-	1.24	-
Small	1.26	0.66	0.02	0.17	0.04	1.18	-
Medium	1.85	0.94	-	0.46	0.07	4.46	-
Large	2.59	0.87	-	3.37	0.17	6.63	-
Very large	3.13	1.31	0.06	7.0	0.31	8	-
Total	1.51	0.70	0.012	0.72	0.05	2.59	-

Table 5.1.3: Per farm average number of man days employed for farming and livestock operations in Punjab, 2018-19 **(Per annum)**

Landholding categories	Family labour			Farm servants		Casual labour	
	Male	*Female*	*Children*	*Male*	*Female*	*Male*	*Female*
Marginal	48.91	24.47	0.44	-	-	1.50	-
Small	57.66	30.11	0.25	4.66	1.79	7.29	-
Medium	84.23	41.24	0.00	10.48	3.07	17.06	-
Large	117.76	39.76	0.00	113.68	7.82	31.14	-
Very large	142.58	59.88	1.56	244.38	14.26	91.25	-
Total	68.54	32.02	0.28	23.18	2.43	12.02	-

5.2 Wage rate; whether the wage rate is reasonable and the reasons if not

The wage rate paid to labour engaged in farming and livestock operations is presented in Table5.2.1. On the whole, the average wage paid to the male farm servants was Rs.310.78per day. Female servants were hired for petty works on monthly basis for Rs 600 or Rs.700 to do work for few hours daily. So per day amount of wages for their work were estimated to the tune of Rs. 22.69 only .The casual labour worked for Rs.316.49 for farming and livestock operations.

Table 5.2.1: Average wage rate paid to labour engaged in farming and livestock operations in Punjab, 2018-19. **(Rs/day)**

Landholding categories	Farm servants		Casual labour	
	Male	***Female***	***Male***	***Female***
Marginal	-	-	300.0	-
Small	333.33	24.0	313.33	-
Medium	311.0	21.67	321.03	-
Large	308.43	22.0	320.69	-
Very large	305.71	24.0	323.75	-
Overall	310.78	22.69	316.49	-

Opinion of farmers regarding wage rate:

The opinion regarding wage rate paid to labour was taken from 101 sampled farmers who hired labour for their farming and livestock operations. It was revealed by 77 sampled farmers(76.24 %) that the wages paid to the labour for farming and livestock services were reasonable while 24 respondents(23.76%) reported it as unreasonable. Majority of the medium farmers (35.71%) mainly reported the wages as unreasonable (Table 5.2.2). The wages paid to labour were considered reasonable by 100 percent of the very large farmers. The wage rate paid to labour for farming and livestock operations were considered high by marginal (6.25%), small (21.05%) and large farmers (30%). None of the very large farmer reported the wages paid to labour for farming and livestock operations high.

The reasons reported by 14 sampled farmers (58.33%). for unreasonable wages as limited labour supply which was due to labourersô intension of doing MGNREGA work. Due to shortage of labour supply, farmers had to pay high wages for farming and livestock activities (Table5.2.3.) Majority of the medium farmers (60%) considered wages not reasonable due to working in MNREGA. Limited labour supply was revealed by 100 percent, 40 percent and 66.67 percent of small, medium and large farmers respectively.

Table 5.2.2: Whether wage rate paid to labour for farming and livestock operations is reasonable in Punjab, 2018-19. **(Number)**

Landholding categories	Reasonable	High	Very high	Total
Marginal	15	1	-	16
%	93.75	6.25	-	100.00
Small	15	4	-	19
%	78.95	21.05	-	100.00
Medium	18	10	-	28
%	64.29	35.71	-	100.00
Large	21	9	-	30
%	70.00	30.00	-	100.00
Very large	8	-	-	8
%	100.00	-	-	100.00
Total	77	24	-	101
%	76.24	23.76	-	100.00

Table 5.2.3: Reasons for unreasonable wage rate paid to labour for farming and livestock operations in Punjab, 2018-19. **(Number)**

Landholding categories	Limited labour supply	Working in mnrega	Labour contractors' control	Others	Total
Marginal	-	1	-	-	1
%	-	100.00	-	-	100.00
Small	4	-	-	-	4
%	100.00	-	-	-	100.00
Medium	4	6	-	-	10
%	40.00	60.00	-	-	100.00
Large	6	3	-	-	9
%	66.67	33.33	-	-	100.00
Very large	-	-	-	-	-
%	-	-	-	-	-
Total	14	10	-	-	24
%	58.33	41.67	-	-	100.00

5.3 Details of labour supply

None of the sampled farmer was found to be engaged as wage labour in the study area.

Table 5.3.1: Engagement as wage labour in Punjab, 2018-19.

Landholding categories	Number of households engaged in wage labour	Duration of engagement(in months)		Wage rate (Rs per day)	
		Others' farm	Mnregs	Others' farm	Mnregs
Marginal	-	-	-	-	-
Small	-	-	-	-	-
Medium	-	-	-	-	-
Large	-	-	-	-	-
Very large	-	-	-	-	-
Total	-	-	-	-	-

CHAPTER 6

CREDIT MARKET

This chapter has been discussed under the following heads:

6.1 Sources of borrowing in the study region

6.2 Number, amount, interest rate, purpose of borrowing and the number of loans taken in the last one year from each source

6.3 Number of households that repaid the loan and the amount

6.4 Reasons for non-repayment

6.1 Sources of borrowing in the study region

Credit availed by different categories of farmers from different sources is presented in Table 6.1.1. The cooperative societies were the most preferred source of credit of 288 farmers (57.83%). while from government banks and micro finance/community group/NGOôs credit was borrowed by 99 (19.88%). and 111 farmers (22.29%). respectively, category-wise it was also found that majority of the marginal (61.49%)and small(59.88%) farmers borrowed loan from cooperative societies. From micro finance/ community group/ NGOs , more percentage of large (32.86%) and very large (33.33%) farmers borrowed money as compared to marginal (19.88%), small (17.90%) and medium (24.44%) farmers. From government banks more percentage of small farmers (22.22%) borrowed money than farmers of the other categories.

Table 6.1.1: Sources of money borrowed by the landholding categories in Punjab, 2018-19.

(Number)

Landholding categories	Cooperative societies	Government banks	Micro finance/ community groups and NGO's	Total
Marginal	99	30	32	161
%	61.49	18.63	19.88	100.00
Small	97	36	29	162
%	59.88	22.22	17.90	100.00
Medium	52	16	22	90
%	57.78	17.78	24.44	100.00
Large	32	15	23	70
%	45.71	21.43	32.86	100.00
Very large	8	2	5	15
%	53.33	13.33	33.33	100.00
Total	288	99	111	498
%	57.83	19.88	22.29	100.00

6.2 Number, amount, interest rate, purpose of borrowing and the number of loans taken in the last one year from each source

It was found that on the whole 296 farmers availed credit for performing various operations (Table 6.2.1.)The amount of credit was borrowed by 33.78 percent, 34.12 percent, 17.57 percent, 11.82 percent and 2.70 percent of marginal, small, medium, large and very large farmers respectively. The more number of marginal farmers availed credit while least number of very large farmers borrowed credit.

Table 6.2.1: Number of households borrowed money during the last two years in Punjab, 2018-19.

Landholding categories	Number of households	Percent
Marginal	100	33.78
Small	101	34.12
Medium	52	17.57
Large	35	11.82
Very large	8	2.70
Total	296	100.00

On an average the amount of credit borrowed was found to be more from government banks (Rs 4.06 lakh) followed by micro finance/ community group/NGOôs (Rs1.89 lakh) and Cooperative societies (Rs 1.54 lakh). The big amount of Rs 7.07lakh was borrowed by large farmers from government bank and from cooperative societies, the highest amount of Rs 3.27lakh was borrowed by very large farmers. The medium farmers availed the highest amount of Rs 2.25lakh from micro finance/ community groups/NGOôs. The amount of credit availed from government bank varied between Rs 1.78 lakh and Rs 7.07 lakh among different categories of farmers. From cooperative societies the availed amount varied between Rs 66131 and Rs 3.27lakh and from micro finance, the amount of credit varied between Rs 1.48lakh and Rs 2.25lakh among different categories of farmers (Table 6.2.2)

Table 6.2.2: Amount borrowed from the sources (mean value) in Punjab, 2018-19. (Rs)

Landholding categories	Cooperative societies	Government banks	Micro finance/ commodity groups and NGO's
Marginal	66131	178067	148875
Small	131299	401667	194655
Medium	240923	541625	211364
Large	313913	707333	225000
Very large	327500	575000	150000
Total	154431	406343	189045

The rate of interest charged by the different sources of credit is presented in Table 6.2.3.It was revealed that rate of interest paid by the farmers of different categories for availing loan from cooperative societies was 7 percent. The various categories of farmers i.e. marginal, small, medium, large and very large farmers were charged 7.15 percent, 8.36 percent, 9.25 percent, 10 percent and 11.50 percent by government banks. Overall, the government banks charged 8.45 percent as rate of interest for disbursing loan amount. The rate of interest charged by micro finance/ community groups/NGOôs was much more as compared to cooperative societies and government banks. On an average 17.92 percent rate of interest was charged on loan amount. The farmers of marginal, small, medium, large and very large categories paid 17.91, 17.80, 17.86, 18.00 and 18.00 percent rate of interest respectively on agricultural credit from micro finance/ community groups/NGOôs.

Table 6.2.3: Rate of interest charged by the reported sources from whom money was borrowed (mean value) in Punjab, 2018-19.

Landholding categories	Rate of interest (%)		
	Cooperative societies	Government banks	Micro finance/ commodity groups and NGO's
Marginal	7.00	7.15	17.91
Small	7.00	8.36	17.90
Medium	7.00	9.25	17.86
Large	7.00	10.00	18.00
Very large	7.00	11.50	18.00
Total	7.00	8.45	17.92

The purpose for which the loan amount was borrowed from various sources is presented in Table 6.2.4 to Table 6.2.6. From the government bank, majority of the borrowing farmers availed credit for both current expenditure in farm business and consumption expenditure. The number of marginal, small, medium, large and very large farmers who availed credit for both these purposes were 27 (90%), 33 (91.67%), 15 (93.75%), 14 (93.33%) and 2 (100%) respectively It was found that 90 percent of the marginal farmers borrowed loan from government banks for both current expenditure in farm business and consumption expenditure while only 6.67 percent had taken loan for consumption expenditure (Table 6.2.4). From cooperative societies, majority of the farmers i.e. 251 farmers (87.15%) borrowed loan for current expenditure in farm business .The number of marginal, small, medium, large and very large farming who borrowed from cooperative societies for this purpose was 88 (88.89%), 91 (93.81%), 44 (84.62%), 20 (62.50%) and 8 (100%) respectively. The number of farmers in the marginal, small, medium and large categories

borrowed loan for both the purposes i.e. for current expenditure in farm business and for consumption expenditure were 11 (11.11%), 6 (6.19%), 7 (13.46%) and 10 (31.25%) respectively. None of the very large farmer borrowed for both the purpose from cooperative societies (Table 6.2.5).

From micro finance/ community groups/NGsOôs, overall 103 farmers (92.73%) borrowed loan for both current expenditure in farm business and consumption expenditure. Only 6 farmers (5.41%) borrowed loan for consumption expenditure from micro finance/community group/NGOôs. Category-wise 89.60 percent to 100 percent of the farmers borrowed money for both current expenditure in farm business and consumption expenditure. The amount was borrowed for consumption expenditure by 10.34 percent, 9.09 percent and 4.35 percent of the small, medium and large farms respectively (Table 6.2.6).

Table 6.2.4: Purpose of borrowing money from the government banks in Punjab, 2018-19. **(Number)**

Landholding categories	Capital exp. in farm business	Current exp. in farm business	Non-farm business	Consump. exp.	Marriages & ceremonies	Education	Medical	For migrating outside the village	Both *B* and *D*	Both *B, D* and *E*	Total
	A	***B***	***C***	***D***	***E***	***F***	***G***	***H***			
Marginal	-	-	-	2 (6.67)	-	-	-	-	27 (90.00)	1 (3.33)	30 (100.00)
Small	-	1 (2.78)	-	2 (5.56)	-	-	-	-	33 (91.66)		36 (100.00)
Medium	-	1 (6.75)	-		-	-	-	-	15 (93.75)	-	16 (100.00)
Large	-	-	-	1 (6.67)	-	-	-	-	14 (93.33)	-	15 (100.00)
Very large	-	-	-		-	-	-	-	2 (100.00)	-	2 (100.00)
Total	-	2 (2.02)	-	5 (5.05)	-	-	-	-	91 (91.92)	1 (1.01)	99 (100.00)

Figures in the parentheses are the percentages to total

Table 6.2.5: Purpose of borrowing money from the cooperative societies in Punjab, 2018-19. **(Number)**

Landholding categories	Capital exp. in farm business	Current exp. in farm business	Non-farm business	Consump. Exp.	Marriages & ceremonies	Education	Medical	For migrating outside the village	Both *B* and *C*	Both *C* and *D*	Total
	A	***B***	***C***	***D***	***E***	***F***	***G***	***H***			
Marginal	-	88 (88.89)	-	-	-	-	-	-	-	11 (11.11)	99 (100.00)
Small	-	91 (93.81)	-	-	-	-	-	-	-	6 (6.19)	97 (100.00)
Medium	1 (1.92)	44 (84.62)	-	-	-	-	-	-	-	7 (13.46)	52 (100.00)
Large	1 (3.13)	20 (62.50)	-	-	-	-	-	-	1 (3.13)	10 (31.25)	32 (100.00)
Very large	-	8 (100.00)	-	-	-	-	-	-	-	-	8 (100.00)
Total	2 (0.69)	251 (87.15)	-	-	-	-	-	-	1 (0.35)	34 (11.81)	288 (100.00)

Figures in the parentheses are the percentages to total

Table 6.2.6: Purpose of borrowing money from the Micro finance/community groups and NGO's in Punjab, 2018-19. (Number)

Landholding categories	Capital exp. in farm business	Current exp. in farm business	Non-farm business	Consump. exp.	Marriages & ceremonies	Education	Medical	For migrating outside the village	Both *B*and *D*	Both *B*, Dand *E*	Both *C* and *D*	Total
	A	***B***	***C***	***D***	***E***	***F***	***G***	***H***				
Marginal	-	-	-	-	-	-	-	-	31 (96.88)	1 (3.12)	-	32 (100.00)
Small	-	-	-	3 (10.34)	-	-	-	-	26 (89.60)	-	-	29 (100.00)
Medium	-	-	-	2 (9.09)	-	-	-	-	20 (90.91)	-	-	22 (100.00)
Large	-	-	-	1 (4.35)	-	-	-	-	21 (91.30)	-	1 (4.35)	23 (100.00)
Very large	-	-	-	-	-	-	-	-	5 (100.00)	-	-	5 (100.00)
Total	-	-	-	6 (5.41)	-	-	-	-	103 (92.79)	1 (0.90)	1 (0.90)	111 (100.00)

Figures in the parentheses are the percentages to total

It was revealed by the farmers that on an average two loans each were taken from government bank and cooperative societies while from micro finance/ community groups/NGOôs, the number of loans taken were 2.66 (Table 6.2.7). It was found that more number of loans from this agency were taken by small (2.95 loans) and medium farmers (2.87 loans)

Table 6.2.7: Number of loans taken from the sources during the last one year (mean value) in Punjab, 2018-19.

Landholding categories	Cooperative societies	Government banks	Micro finance /commodity groups and NGO's
Marginal	2	2	2.28
Small	2	2	2.62
Medium	2	2	2.95
Large	2	2	2.87
Very large	2	2	3.00
Total	2	2	2.66

6.3 Number of households that repaid the loan the amount

The number of households who have repaid the loan taken from different sources is presented in Table 6.3.1. On the whole 288 farmers (57.83%) borrowed loan from cooperative society while from government bank and micro finance/ community group/ NGO's the loan was borrowed by 99 (19.88%) and 111 (22.29%) farmers respectively. All the farmers in different landholdings categories repaid the loan borrowed from cooperative societies and government banks. But the loan borrowed from micro finance/ community group/ NGO's were fully repaid by 48 (43.24 %) farmers and not fully repaid by 63 farmers (56.75 %) . From this source 32 of the marginal farmers (29.0 %) borrowed loan but loan was fully repaid by only 4(8 %) farmers and 28 farmers ((44 %) did not repay the loan fully. Loan was fully repaid by the small(21%), medium(34%),, large(31%), and very large farmers(6 %), while in the respective categories of farmers the borrowed loan was not fully repaid by 30percent, 10 percent,13 percent , and 3 percent of the farmers respectively.

Table 6.3.1 Number of households who have repaid the loan in Punjab, 2018-19.

Landholding categories	Cooperative societies		Government banks		Micro finance/ commodity groups and NGO's		
	Received by	*Fully repaid by*	*Received by*	*Fully repaid by*	*Received by*	*Fully repaid by*	*Not fully repaid by*
Marginal	99 (34.0)	99 (34.0)	30 (30.0)	30 (30.0)	32 (29.0)	4 (8.0)	28 (44.0)
Small	97 (34.0)	97 (34.0)	36 (37.0)	36 (37.0)	29 (26.0)	10 (21.0)	19 (30.0)
Medium	52 (18.0)	52 (18.0)	16 (16.0)	16 (16.0)	22 (20.0)	16 (34.0)	6 (10.0)
Large	32 (11.0)	32 (11.0)	15 (15.0)	15 (15.0)	23 (21.0)	15 (31.0)	8 (13.0)
Very large	8 (3.0)	8 (3.0)	2 (2.0)	2 (2.0)	5 (4.0)	3 (6.0)	2 (3.0)
Total	288 (100.0)	288 (100.0)	99 (100.0)	99 (100.0)	111 (100.0)	48 (100.0)	63 (100.0)

Figures in the parentheses are the percentages to total

On an average, the amount of loan repaid to cooperative societies, government banks and micro finance/ community groups and NGOôs was Rs 1.65 lakh, Rs 4.53 lakh and Rs 1.78 lakh respectively Table (6.3.2). Among the different categories the loan amount repaid to cooperative societies was Rs 70761, Rs 1.40 lakh, Rs 2.57 lakh, Rs 3.35 lakh and Rs 3.50 lakh by the marginal, small, medium, large and very large farmers respectively. The amount repaid to government bank by different categories of farmers varied between Rs 1.98 lakh to Rs 7.88 lakh. The amount repaid to micro finance/ community group/NGOôs by marginal, small, medium, large and very large farmers was Rs 1.02 lakh, Rs 1.49 lakh, Rs 3.05 lakh, Rs 2.00 lakh and Rs 1.60 lakh respectively.

Table 6.3.2: Amount repaid to the source from whom money was borrowed (mean value) in Punjab, 2018-19.

Landholding categories	Amount repaid (Rs/farm)		
	Cooperative societies	Government banks	Micro finance/ commodity groups and NGO's
Marginal	70761	198544	102860
Small	140490	447858	149669
Medium	257788	603912	305909
Large	335886	788677	200761
Very large	350425	641125	160800
Total	165241	453073	178229

6.4 Reasons for non-repayment

The reasons for non repayment of loan amount were reported by farmers are presented in Table 6.4.1 to Table 6.4.3. All the farmers repaid their amount of loan to cooperative societies and government banks. But the loan was not repaid to micro finance/ community groups/NGOôs by the farmers. The reasons reported by the 63.49 percent of farmers due to both income being always less than their expenditure and also it was decided by them they would repay the loan when they will get payment after harvesting. The rest of the farmers i.e. 11 (17.46%) farmers each reported less income than their expenditure and payment would be made after harvesting as the reasons for not repaid the loan . Further, across land holding categories, majority of small farmers (26.32%) revealed short of their income than their expenditure as the reason for non-repayment of their loan followed by marginal(17.86%), and large farmers(12.50%) respectively. The non repayment of loan was due to the reason of making payment after harvesting was by 15.79 percent , 50 percent , 37.50 percent and 100 percent of small, medium, large and very large farmers respectively. Majority of the small farmers (78.57%)did not repay loan due to both short of income than expenditure as well as for making payment made after harvesting followed by small, (57.89%) medium(50 %) and large farmers(50%)respectively.

Table 6.4.1: Reasons for non-repayment of the borrowed money from government banks in Punjab, 2018-19. **(Number)**

Landholding categories	Income always less than exp.	Crop loss	Debt has been waived	Expecting debt waiver	Debt repayment postponed	Payment will be made after harvesting	Major medical or other expenses	Total
Marginal	-	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-	-
Medium	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-
Very large	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-

Table 6.4.2: Reasons for non-repayment of the borrowed money from cooperative societies in Punjab, 2018-19. **(Number)**

Landholding categories	Income always less than exp.	Crop loss	Debt has been waived	Expecting debt waiver	Debt repayment postponed	Payment will be made after harvesting	Major medical or other expenses	Total
Marginal	-	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-	-
Medium	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-
Very large	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-

Table 6.4.3: Reasons for non-repayment of the borrowed money from micro finance/community groups/NGOs in Punjab, 2018-19.

(Number)

Landholding categories	Income always less than expenditure	Payment will be made after harvesting	Major medical or other expenses	Both *A* and *B*	Total
	A	***B***	***C***		
Marginal	5	-	1	22	28
%	17.86	-	3.57	78.57	100.00
Small	5	3	-	11	19
%	26.32	15.79	-	57.89	100.00
Medium	-	3	-	3	6
%	-	50.00	-	50.00	100.00
Large	1	3	-	4	8
%	12.50	37.50	-	50.00	100.00
Very large	-	2	-	-	2
%	-	100.00	-	-	100.00
Total	11	11	1	40	63
%	17.46	17.46	1.59	63.49	100.00

Figures in the parentheses are the percentages to total

CHAPTER 7

ASSET ENDOWMENTS OF THE HOUSEHOLDS, GOVERNMENT SUPPORT PROGRAMS AND INSURANCE

This chapter has been discussed under the following heads:

7.1 Assets: Number of households possessing various types of farm and non-farm assets; types of assets possessed

7.2 Expenditures incurred on purchase and maintenance of various assets; receipts from sale of these assets; net expenditure on productive assets

7.3 Technical advice: Sources of technical advice (KVKs, extension officials etc); frequency of such advice; reasons for not availing advice

7.4 Whether the advice was followed; if yes, whether the advice was useful and its impact

7.5 If not followed the advice, reasons for not following

7.6 MSP: Awareness about MSP and the agencies available in the study region for crop procurement

7.7 Public procurement agencies to which the crops have been sold; quantity, price, total value\

7.8 Reasons if not sold to any agency and quantity sold at below MSP

7.9 PM-AASHA: Whether received any deficiency payments under PM-AASHA; details such as number of households; quantity sold; payment received and time taken

7.10 PM-KISAN: Assistance under PM-KISAN, if any; number of households; payment received and time taken

7.11 Insurance:

7.11.1 crops insured and reasons if not insured

7.11.2 whether experienced crop loss and reasons for the loss

7.11.3 estimated crop loss, total premium paid and the claim amount received; delay in receipt of payment

7.11.4 Reasons for not receiving the claim amount

7.1 Assets: Number of households possessing various types of farm and non-farm assets; types of assets possessed

The various types of productive assets purchased by the sampled households is presented in Table 7.1.1 and Table 7.1,2. It was observed that only large ((20%)) and very large ((2%)) farmers purchased land and none of the marginal small and medium farmers spent on the purchase of land. Livestock was owned by all the farmers across the landholding categories and it was found that majority of the marginal farmers(100 %) purchased livestock followed

by small(85.71%)), medium(76.92%)), large(20%)) and very large farmers(60%). The tractors were purchased by 7.69 percent of medium farmer and 20 percent each of large and very large farmers. Only one large farmer purchased thresher. I the case of assets for non farming business, 14.29 percent of small,7.69 percent of medium and 20 percent of large category purchased machinery and equipment.

Table 7.1.1: Number of households reporting purchase of various productive assets in Punjab, 2018-19. (Number)

Landholding categories	Assets for farm business									Assets for non-farm business		Residential building including land	Total
	Land	Building for farm business	Fish tank	Livestock	Poultry/ duckery	Sickle/ chaff-cutter/ axe/ spade/ plough	Power tiller/ tractor	Thresher	Pump	Land & building	Machinery/ equipment		
Marginal	-	-	-	3	-	-	-	-	-	-	-	-	3
Small	-	-	-	6	-	-	-	-	-	-	1	-	7
Medium	-	-	-	10	-	1	1	-	-	-	1	-	13
Large	1	-	-	1	-	-	1	1	-	-	1	-	5
Very large	1	-	-	3	-	-	1	-	-	-	-	-	5
Total	2	-	-	23	-	1	3	1	-	-	3	-	32

Table 7.1.2: Number of households reporting purchase of various productive assets in Punjab, 2018-19. (Percent)

Landholding categories	Assets for farm business									Assets for non-farm business		Residential building including land	Total
	Land	Building for farm business	Fish tank	Livestock	Poultry/ Duckery	Sickle/ Chaff-cutter/ Axe/ Spade/ Plough	Power tiller/ Tractor	Thresher	Pump	Land& Building	Machinery/ Equipment		
Marginal	-	-	-	100.00	-	-	-	-	-	-	-	-	100.00
Small	-	-	-	85.71	-	-	-	-	-	-	14.29	-	100.00
Medium	-	-	-	76.92	-	7.69	7.69	--	-	-	7.69	-	100.00
Large	20.00	-	-	20.00	-	-	20.00	20.00	-	-	20.00	-	100.00
Very large	20.00	-	-	60.00	-	-	20.00	-	-	-	-	-	100.00
Total	6.25	-	-	71.88	-	3.13	9.38	3.13	-	-	9.38	-	100.00

7.2 Expenditure incurred on purchase and maintenance of various assets; receipts from sale of these assets; net expenditure on productive assets

The expenditure incurred by the sampled farmers of various categories on productive assets is presented in Table 7.2.1. The total expenditure incurred by 32 households was Rs.66.02lakh. The highest amount spent on productive assets was Rs.20.21lakh by 13 households of medium category. The large (4) and very large farmers (5) spent by Rs.13.34lakh and Rs.27.25lakh respectively on the purchase of productive assets. The least amount of Rs.1,50,000/- was spent by marginal farmers on productive assets. The detailed expenditure made by farmers of different land holding categories are presented in Table 7.2.2.

Table 7.2.1: Total expenditure incurred on the purchase of productive assets in Punjab, 2018-19. **(Rs)**

Landholding categories	Total expenditure	Number of households reporting	Average expenditure
Marginal	150000	3	50000
Small	372000	7	53143
Medium	2021000	13	155462
Large	1334000	4	333500
Very large	2725000	5	545000
Total	6602000	32	206313

The total expenses incurred for purchase of various productive assets (for farm business) i.e for land (Rs.28.00 lakh) , livestock (Rs.17.44 lakh), sickle/chaff-cutter/axe/spade/plough (Rs.19000) power tiller/tractor (13.95 lakh). and for non farm business i.e for machinery/ equipment (4.60 lakh) were estimated

A perusal of Table 7.2.3 shows per farm expenditure on the productive assets and it was found that that large and very large farmers spent Rs.10.00 lakh and Rs.18.00 lakh on the purchase of land while for the purchase of livestock highest amount was spent by medium category (Rs.10.02 lakh) followed by small (Rs.3.07 lakh), very large farmers (Rs.2.35lakh) and marginal farmers (Rs.1.50lakh). The expenses incurred for the purchase of livestock was found lowest in case of large farmers. Very large farmers made expenditure of Rs.6.90 lakh on the purchase of power tiller/tractor followed by medium (Rs.6.50 lakh) and large farmers (Rs.55000). No expenses were incurred by marginal and small farmers for tiller/tractor. One thresher was purchased for Rs.1.84 lakh by only large farmer. Total investment of Rs.4.60lakh was made for acquiring assets for non farm business. The small medium and large farmers spent Rs.6.50 lakh, Rs.3.50 lakh and Rs.45000 for acquiring machinery/equipment for non-farm business. Overall ,the per farm expenditure on productive

assets was to the tune of Rs. 2.06 lakh. Across landholding categories, expenditure on productive assets was more on large farms i.e. Rs. 5.45 lakh than on other farms.

Table 7.2.2: Total expenditure (asset -wise) incurred on the purchase of productive assets in Punjab, 2018-19. **(Rs)**

Landholding categories	Assets for farm business									Assets for non-farm business		Residential building including land	Total
	Land	Building for farm business	Fish tank	Livestock	Poultry/ duckery	Sickle/chaff-cutter/ axe/ spade/ plough	Power tiller/ tractor	Thresher	Pump	Land& building	Machinery/ equipment		
Marginal	-	-	-	150000	-	-	-	-	-	-	-	-	150000
Small	-	-	-	307000	-	-	-	-	-	-	65000	-	372000
Medium	-	-	-	1002000	-	19000	650000	-	-	-	350000	-	2021000
Large	1000000	-	-	50000	-	-	55000	184000	-	-	45000	-	1334000
Very large	1800000	-	-	235000	-	-	690000	-	-	-	-	-	2725000
Total	2800000	-	-	1744000	-	19000	1395000	184000	-	-	460000	-	6602000

Table 7.2.3: Per farm expenditure incurred on the purchase of productive assets in Punjab, 2018-19. **(Rs)**

Landholding categories	Assets for farm business									Assets for non-farm business		Residential building including land	Overall
	Land	Building for farm business	Fish tank	Livestock	Poultry/ duckery	Sickle/chaff-cutter /axe /spade /plough	Power tiller/ tractor	Thresher	Pump	Land& building	Machinery/ equipment		
Marginal	-	-	-	50000	-	-	-	-	-	-	-	-	50000
Small	-	-	-	51167	-	-	-	-	-	-	65000	-	53143
Medium	-	-	-	100200	-	19000	650000	-	-	-	350000	-	155462
Large	1000000	-	-	50000	-	-	55000	184000	-	-	45000	-	266800
Very large	1800000	-	-	78333	-	-	690000	-	-	-	-	-	545000
Overall	1400000	-	-	75826	-	19000	465000	184000	-	-	153333	-	206313

A perusal of Table 7.2.4 reveals that total expenses incurred on repair/maintenance of productive assets reported by 11 sampled farmers were Rs.1.47lakh . The highest expenses were found on small farms (Rs.81000 followed by medium and large farms (each Rs.30000). The expenses were estimated to be the least on marginal farms i.e. Rs.6500. Nothing was spent by very large farmers on repair/maintenance of productive assets.

It is shown in Table 7.2.5 that the number of sampled households reporting the expenses on repair/maintenance were 11, out of which maximum 54.54 percent of farmers incurred such expenses on repair/maintenance of power tiller/tractor followed by 27.27 percent on sickle/chaff cutter/axe/spade /plough9.09 percent each on thresher and assets for non-farm business(land and building)The repair /improvement of power tiller/tractor was reported by 40 percent, 50 percent and 6.67 percent of marginal, small and large farmers. None of the very large farmer reported the repair of power tiller / tractor..

The total expenditure on the repair of power tiller/tractor came out to be Rs.87500 (Table 7.2.6) followed by repair of sickle/chaff cutter implements (Rs.32000), land building (Rs.20000) and thresher (Rs.8000). Across landholding categories, the expenditure made for the repair of sickle/chaff cutter implements was Rs. 10000 each on small and medium farms while on large farms the expenditure on sickle/chaff cutter implements was Rs. 12000. For the repair of power tiller/tractor the expenditure was found highest on small farms as compared to the farms of other land holding categories.

Per farm expenditure on the repair/improvement of productive assets is presented in Table7.2.7. On an average, per farm expenditure on the repair/improvement of productive assets was estimated to be Rs. 13409. Overall , per farm expenditure was found more on power tiller/ tractor(Rs. 14583) under assets for farm business while on land and building under assets for non-farm business was found more i.e. Rs 20000.

Table 7.2.4: Total expenditure incurred on the repair/improvement of productive assets in Punjab, 2018-19. (Rs)

Landholding categories	Total expenditure	Number of households reporting	Expenditure (per farm)
Marginal	6500	1	6500
Small	81000	5	16200
Medium	30000	2	15000
Large	30000	3	10000
Very large	-	-	-
Total	147500	11	13409

Table 7.2.5: Number of households reporting repair/improvement of productive assets in Punjab, 2018-19. (Number)

Landholding categories	Assets for farm business									Assets for non-farm business		Residential building including land	Total
	Land	Building for farm business	Fish tank	Livestock	Poultry/ duckery	Sickle/ chaff-cutter/ Axe/ spade/ plough	Power tiller/ tractor	Thresher	Pump	Land & building	Machinery/ equipment		
Marginal	-	-	-	-	-	-	1	-	-	-	-	-	1
%							100.00						100.00
Small	-	-	-	-	-	1	2	1		1	-	-	5
%						20.00	40.00	20.00		20.00			100.00
Medium	-	-	-	-	-	1	1	-	-	-	-	-	2
%						50.00	50.00						100.00
Large	-	-	-	-	-	1	2	-	-	-	-	-	3
%						33.33	66.67						100.00
Very large	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	3 (27.27)	6 (54.55)	1 (9.09)	-	1 (9.09)	-	-	11 (100.00)

Figures in the parentheses indicate percentages to total number of households

Table 7.2.6: Total expenditure on repair/improvement of productive assets in Punjab, 2018-19. **(Rs)**

Landholding categories	Assets for farm business									Assets for non-farm business		Residential building including land	Total
	Land	Building for farm business	Fish tank	Livestock	Poultry/ duckery	Sickle/ chaff-cutter/axe /spade/plough	Power tiller/ tractor	Thresher	Pump	Land & Building	Machinery /equipment		
Marginal	-	-	-	-	-	-	6500	-	-	-	-	-	6500
Small	-	-	-	-	-	10000	43000	8000	-	20000	-	-	81000
Medium	-	-	-	-	-	10000	20000	-	-	-	-	-	30000
Large	-	-	-	-	-	12000	18000	-	-	-	-	-	30000
Very large	-	-	-	-	-	-	-	-	-	-	-	-	
Total	-	-	-	-	-	32000	87500	8000	-	20000	-	-	147500

Table : 7.2.7 Per farm expenditure on repair/improvement of productive assets in Punjab, 2018-19. **(Rs/farm)**

Landholding categories	Assets for farm business									Assets for non-farm business		Residential building including land	Total
	Land	Building for farm business	Fish tank	Livestock	Poultry/ duckery	Sickle/ chaff-cutter/ axe/ spade/ plough	Power tiller/ tractor	Thresher	Pump	Land& building	Machinery/ equipment		
Marginal	-	-	-	-	-		6500	-	-	-	-	-	6500
Small	-	-	-	-	-	10000	21500	8000	-	20000	-	-	16200
Medium	-	-	-	-	-	10000	20000	-	-	-	-	-	15000
Large	-	-	-	-	-	12000	9000	-	-	-	-	-	10000
Very large	-	-	-	-	-	-	-	-	-	-	-	-	
Total	-	-	-	-	-	10667	14583	8000	-	20000	-	-	13409

It was reported by 24 sampled farmers that total receipt from the sale of productive assets was of Rs.76.01lakh. The maximum receipt from sale was obtained by large farms (Rs.41.06 lakh) followed by small farms (Rs.27.58lakh). The marginal medium and very large farmers received Rs.1.63lakh, Rs.4.84lakh and Rs.80000 from the sale of productive assets (Table 7.2.8).

On the whole 25 sample farmers reported the sale of productive assets and maximum number (8 farmers) of medium farmers sold the productive assets and it was found that they (5 farmers) mostly sold livestock while only 2 farmers sold tractor/power tiller and one farmer sold implements. On the whole out of 25 sampled farmers, majority (18) of the farmers sold livestock. (Table 7.2.9). On the whole, 24 farmers reported the sale of productive assets, however, one farmer sold land as well as livestock. Therefore, this farmer was counted twice in respect of component wise sale of productive assets. Therefore there were 25 farmers under the head of component wise sale of productive assets irrespective of 24 farmers.

Overall, the total receipts from the sale of land was Rs.64.00 lakh followed by livestock (Rs.8.43lakh), power tiller/tractor (Rs.3.02lakh) and implements (Rs.65000). The large farmers received maximum amount from the sale of land (Rs.40.00lakh) while the maximum amount was received from the sale of livestock by medium farmers across the landholding categories (Table 7.2.10).

Per farm receipts from the sale of productive assets is presented in Table 7.2.11. The receipts from the sale of land, livestock sickle/chaff-cutter axe/ spade/ plough, power tiller and tractor was to the tune of Rs.21.33 lakh, Rs. 46333,Rs 65000 and Rs 1.00 lakh respectively. The highest receipts from the sale of land (24.00 lakh) and livestock (Rs.59667)were received by small farmers. From the sale of power tiller /tractor, maximum amount was received by medium farmers (Rs. 1.11 lakh).

Net expenditure on productive assets by the sampled households is presented in Table 7.2.12. The net expenditure was calculated as the difference between the total expenditure incurred in the purchase of productive assets and receipts from the sale of those assets. On the whole, net expenditure was found positive only on medium (Rs 15.57 lakh) and on very large farms (Rs 26.45lakh) on other farms i.e. on marginal, small, large farms and over all farm situation the net expenditure was Rs - 6500, Rs. ï 23.05lakh, Rs ï 27.42lakh and Rs - 8.51lakh respectively. Per farm net expenditure on marginal, medium, large and very large farms was Rs - 63, Rs - 22598, Rs 29942, Rs - 78343 and 3.30 lakh and overall was estimated as Rs -2838.

Table 7.2.8: Total receipt obtained from the sale of productive assets in Punjab, 2018-19.

Landholding categories	Total receipt (Rs)	Number of households reporting	Receipt per farm (Rs)
Marginal	163000	4	40750
Small	2758000	7	394000
Medium	494000	8	61750
Large	4106000	4	1026500
Very large	80000	1	80000
Total	7601000	24	316708

Table 7.2.9: Number of households reporting sale of productive assets in Punjab, 2018-19. **(Number)**

Landholding categories	Assets for farm business									Assets for non-farm business		Residential building including land	Total
	Land	Building for farm business	Fish tank	Livestock	Poultry/ duckery	Sickle/ chaff-cutter/ axe/ spade/ plough	Power tiller/ tractor	Thresher	Pump	Land& building	Machinery/ equipment		
Marginal	-	-	-	4 (22.22)	-	-	-	-	-	-	-	-	4 (16.00)
Small	1 (33.33)	-	-	6 (33.33)	-	-	-	-	-	-	-	-	7 (28.00)
Medium	-	-	-	5 (27.78)	-	1 (100.00)	2 (66.67)	-	-	-	-	-	8 (32.00)
Large	2 (66.67)	-	-	3 (16.67)	-	-	-	-	-	-	-	-	5 (20.00)
Very large	-	-	-	-	-	-	1 (33.33)	-	-	-	-	-	1 (4.00)
Total	3 (100.00)	-	-	18 (100.00)	-	1 (100.00)	3 (100.00)	-	-	-	-	-	25 (100.00)

Figures in parentheses indicate percent to total number of households

Table 7.2. 10: Total receipts from sale of productive assets in Punjab, 2018-19. **(Rs)**

Landholding categories	Assets for farm business									Assets for non-farm business		Residential building Including land	Total
	Land	Building for farm business	Fish tank	Livestock	Poultry/ duckery	Sickle/ chaff-cutter/ axe/ spade/ plough	Power tiller/ tractor	Thresher	Pump	Land& building	Machinery/ equipment		
Marginal	-	-	-	163000	-	-	-	-	-	-	-	-	163000
Small	2400000	-	-	358000	-	-	-	-	-	-	-	-	2758000
Medium	-	-	-	207000	-	65000	222000	-	-	-	-	-	494000
Large	4000000	-	-	106000	-	-	-	-	-	-	-	-	4106000
Very large	-	-	-	-	-	-	80000	-	-	-	-	-	80000
Total	6400000	-	-	834000	-	65000	302000	-	-	-	-	-	7601000

Table 7.2.11: Per farm receipts from sale of productive assets in Punjab, 2018-19. **(Rs)**

Landholding categories	Assets for farm business									Assets for non-farm business		Residential building Including land	Total
	Land	Building for farm business	Fish tank	Livestock	Poultry/ duckery	Sickle/ chaff-cutter/ axe/ spade/ plough	Power tiller/ tractor	Thresher	Pump	Land& building	Machinery/ equipment		
Marginal	-	-	-	40750	-	-	-	-	-	-	-	-	40750
Small	2400000	-	-	59667	-	-	-	-	-	-	-	-	394000
Medium	-	-	-	41400	-	65000	111000	-	-	-	-	-	61750
Large	2000000	-	-	35333	-	-	-	-	-	-	-	-	821200
Very large	-	-	-	-	-	-	80000	-	-	-	-	-	80000
Total	2133333	-	-	46333	-	65000	100667	-	-	-	-	-	304040

Table 7.2.12: Net expenditure on productive assets in Punjab, 2018-19. (Rs)

Landholding categories	Net expenditure	Net expenditure per farm)
Marginal	-6500	-63
Small	-2305000	-22598
Medium	1557000	29942
Large	-2742000	-78343
Very large	2645000	330625
Total	-851500	-2838

Note: Net expenditure has been calculated as the difference between the total expenditure incurred in the purchase of productive assets and receipts from the sale of those assets

7.3 Technical advice: Sources of technical advice (KVKs, extension officials etc); frequency of such advice; reasons for not availing advice

For technical advice for their crops, the farmers accessed various sources and the same is presented in Table 7.3.1 The number of farmers accessing extension agents, Krishi Vigyan Kendras, Agricultural universities/colleges, private commercial agents, progressive farmers, radio/newspapers/internet, veterinary department were 1 (0.27%), 8 (2.20%), 24 (6.59%), 216 (59.34%), 40 (10.99%), 65 (17.86%) and 10 (2.75%) respectively. None of the farmer approached to NGOôs for taking any technical advice regarding their crops. Majority of the farmers (59.34%) acquired services of private commercial agents while 65 farmers (17.86%) went through radio/newspapers or internet for any query regarding their crops. The extension agents were least accessed by the farmers. Progressive farmers, agricultural universities/colleges, veterinary department, Krishi Vigyan Kendras were accessed by (10.99%), (6.59%), (2.75%) 1and (2.20%), farmers respectively.

Table 7.3.1: Sources of technical advice accessed for crops grown in Punjab, 2018-19. **(Number)**

Landholding categories	Extension agents	Krishi Vigyan Kendras	Agri. university/ colleges	Private commercial agents	Progressive farmer	Radio/tv/ newspaper/ Internet	Veterinary department.	NGOs	Total
Marginal	-	-	3 (2.61)	75 (65.22)	13 (11.30)	23 (20.00)	1 (0.87)	-	115 (100.00)
Small	-	-	8 (6.78)	72 (61.02)	13 (11.02)	22 (18.64)	3 (2.54)	-	118 (100.00)
Medium	-	3 (4.84)	5 (8.06)	36 (58.06)	7 (11.29)	10 (16.13)	1 (1.61)	-	62 (100.00)
Large	1 (1.75)	4 (7.02)	6 (10.53)	30 (52.63)	4 (7.02)	8 (14.04)	4 (7.02)	-	57 (100.00)
Very large	-	1 (8.33)	2 (16.67)	3 (25.00)	3 (25.00)	2 (16.67)	1 (8.33)	-	12 (100.00)
Total	1 (0.27)	8 (2.20)	24 (6.59)	216 (59.34)	40 (10.99)	65 (17.86)	10 (2.75)	-	364 (100.00)

Figures in the parentheses are the percentages to total
Note: Multiple responses

Frequency of advice

The farmers who accessed various sources for having technical advice regarding their crops reported the frequency of contact with the sources and the same is presented in Tables 7.3.2 to Table 7.3.8.

Only one farmer accessed the extension agent (Table 7.3.2) and that was contacted only one time seasonally. Krishi Vigyan Kendras were accessed by 8 farmers (3 medium, 4 large and 1 very large)out which 2 farmers (25%)contacted weekly while 6 farmers(75%) reported their contact at KVKs need based. All the medium and large farmers (100% each)contacted need based and weekly respectively while 25 percent and 75 percent of the large farmers accessed KVKs weekly and need based respectively.(7.3.3). Agricultural universities/colleges were visited seasonally and need based by 5 farmers(20.83%) and 19 farmers(79,17%) respectively. Out of 24 farmers (Table 7.3.4) , the number of marginal ,small. medium, large and very large farmers was 3.8.5.6 and 2 respectively. It was found that 100 percent of medium and large farmers contacted agricultural universities/colleges need based while majority of marginal (66.67 %) farmers contacted weekly. Private commercial agents were contacted need based by 212 farmers while monthly and seasonally were contacted by 2 farmers each respectively. The number of marginal, small, medium, large and very large farmers was 75,72,36,30 and 30 respectively (Table 7.3.5). Majority of the large farmers (100%) followed by marginal(97.34%), medium (97.22%) and very large farmers(96.67%) contacted private commercial agents need based while these were contacted least by small farmers (37.96%). The contact with the progressive farmers for getting technical advice by 38 farmers was need based. Out of 40 farmers, on the whole, each of 13 marginal and small farmers, 7 medium 4 large and 3 large farmers contacted progressive farmers. Mostly contact with progressive farmers was made by 92 to 100 percent of farmers was need based (Table 7.3.6). Newspapers/radio/internet was accessed by 56 farmers (86.15%) daily while weekly and monthly these sources were accessed by 2 (3.08 %) and one (1.54 %) farmers respectively. Out of total of 65 farmers, the number of marginal, small, medium large and very large farmers accessed newspapers/radio/internet was 23, 22, 20, 8 and 2 respectively. (Table 7.3.7) This source was accessed daily by 86.96 percent , 90.91 percent, 70 percent, 100 percent and 50 percent of the farmers of the respective land holding categories. The veterinary department was contacted by 10 farmers including one farmer each of marginal, medium and very large farmer while 3 small and 4 large farmers accessed to the veterinary department respectively. The veterinary department was accessed on a need based basis and weekly by 9 farmers(90 %) and one farmer respectively(Table 7.3.8).

Table 7.3.2: Frequency of contact with the extension agents in Punjab, 2018-19. (Number)

Landholding categories	Daily	Weekly	Monthly	Seasonally	Need based	Casual contact	Total
Marginal	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-
Medium	-	-	-	-	-	-	-
Large	-	-	-	1 (100.00)	-	-	1 (100.00)
Very large	-	-	-	-	-	-	-
Total	-	-	-	1 (100.00)	-	-	1 (100.00)

Figures in the parentheses are the percentages to total

Table 7.3.3: Frequency of contact with the Krishi Vigyan Kendras in Punjab, 2018-19.

(Number)

Landholding categories	Daily	Weekly	Monthly	Seasonally	Need based	Casual contact	Total
Marginal	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-
Medium	-	-	-	-	3 (100.00)	-	3 (100.00)
Large	-	1 (25.00)	-	-	3 (75.00)	-	4 (100.00)
Very large	-	1 (100.00)	-	-	-	-	1 (100.00)
Total	-	2 (25.00)	-	-	6 (75.00)	-	8 (100.00)

Figures in the parentheses are the percentages to total

Table 7.3.4: Frequency of contact with the agricultural university /colleges in Punjab, 2018-19.

(Number)

Landholding categories	Daily	Weekly	Monthly	Seasonally	Need based	Casual contact	Total
Marginal	-	-	-	2 (66.67)	1 (33.33)	-	3 (100.00)
Small	-	-	-	1 (12.500)	7 (87.50)	-	8 (100.00)
Medium	-	-	-		5 (100.00)	-	5 (100.00)
Large	-	-	-	2 (33.33)	4 (66.67)	-	6 (100.00)
Very large	-	-	-	-	2 (100.00)	-	2 (100.00)
Total	-	-	-	5 (20.83)	19 (79.17)	-	24 (100.00)

Figures in the parentheses are the percentages to total

Table 7.3.5: Frequency of contact with the private commercial agents including drilling contractors in Punjab, 2018-19. **(Number)**

Landholding categories	Daily	Weekly	Monthly	Seasonally	Need based	Casual contact	Total
Marginal	-	-	1 (1.33)	1 (1.33)	73 (97.34)	-	75 (100.00)
Small	-	-	-	-	72 (33.96)	-	72 (100.00)
Medium	-	-	-	1 (2.78)	35 (97.22)	-	36 (100.00)
Large	-	-	1 (3.33)		29 (96.67)	-	30 (100.00)
Very large	-	-	-	-	3 (100.00)	-	3 (100.00)
Total	-	-	2 (0.93)	2 (0.93)	212 (98.15)	-	216 (100.00)

Figures in the parentheses are the percentages to total

Table 7.3.6: Frequency of contact with the progressive farmers in Punjab, 2018-19.

(Number)

Landholding categories	Daily	Weekly	Monthly	Seasonally	Need based	Casual contact	Total
Marginal	-	-	-	1 (7.69)	12 (92.31)	-	13 (100.00)
Small	-	-	-	1 (7.69)	12 (92.31)	-	13 (100.00)
Medium	-	-	-	-	7 (100.00)	-	7 (100.00)
Large	-	-	-	-	4 (100.00)	-	4 (100.00)
Very large	-	-	-	-	3 (100.00)	-	3 (100.00)
Total	-	-	-	2 (5.00)	38 (95.00)	-	40 (100.00)

Figures in the parentheses are the percentages to total

Table 7.3.7: Frequency of contact with the radio/tv/newspaper/internet in Punjab, 2018-19.

(Number)

Landholding categories	Daily	Weekly	Monthly	Seasonally	Need based	Casual contact	Total
Marginal	20	1	1	-	1	-	23
%	86.96	4.35	4.35	-	4.35	-	100.00
Small	20	1	-	-	1	-	22
%	90.91	4.55	-	-	4.55	-	100.00
Medium	7	-	-	-	3	-	10
%	70.00	-	-	-	30.00	-	100.00
Large	8	-	-	-	-	-	8
%	100.00	-	-	-	-	-	100.00
Very large	1	-	-	-	1	-	2
%	50.00	-	-	-	50.00	-	100.00
Total	56	2	1	-	6	-	65
%	86.15	3.08	1.54	-	9.23	-	100.00

Figures in the parentheses are the percentages to total

Table 7.3.8: Frequency of contact with the veterinary department in Punjab, 2018-19.

(Number)

Landholding categories	Daily	Weekly	Monthly	Seasonally	Need based	Casual contact	Total
Marginal	-	-	-	-	1 (100.00)	-	1 (100.00)
Small	-	1 (33.33)	-	-	2 (66.67)	-	3 (100.00)
Medium	-	-	-	-	1 (100.00)	-	1 (100.00)
Large	-	-	-	-	4 (100.00)	-	4 (100.00)
Very large	-		-	-	1 (100.00)	-	1 (100.00)
Total	-	1 (10.00)	-	-	9 (90.00)	-	10 (100.00)

Figures in the parentheses are the percentages to total

Reasons for not accessing the sources:

The reasons for not accessing the various sources for getting technical advice by the farmers are presented in Tables 7.3.9to 7.3.16 .

The extension agents were not accessed by 299 farmers as 245 of farmers(81.94%) of them were not aware of them while 54 farmers(18.06%) did not require to asses them .Hundred percent of very large farmers did not require to access this source. The percentage of marginal, small medium, and large farmers who were not aware of this source was 100 percent,96.08 percent, 59,62 percent and 38.24 percent respectively. It was found that 100 percent of the marginal farmers were not aware about this source of technical advice.

The reasons for not accessing Krishi Vigyan Kendras were reported by 292 farmers including 103 marginal, 102 small, 49 medium, 31 large and 7 very large farmers. Majority of the farmers (72.60 %) did not want to take advice while 33 farmers (12.67 %) were not aware of the KVKs and non-availability of KVKs were also reported by 43 farmers (14.73 %). For technical advice regarding their crops 276 farmers did not access to agricultural universities/colleges as they did not require their advice and this was stated by 100 percent of the farmers of all the land holding categories (Table 7.3.11). Similar were the views of 84 farmers that they did not want any technical advice from private commercial agents (Tables 7.3.12). Progressive farmers were not approached by 260 farmers as 2.69 percent of them reported the non-availability of progressive farmers while 97.31 percent farmers did not require the technical advice from progressive farmers. Across the land holding categories 89 to 100 percent of the farmers did not require to access the progressive farmers (Table 7.3.13). The radio/ newspaper, internet were not accessed by 235 farmers including each of 80 marginal, and small, 42 medium, 27 large and 6 very large farmers(Table 7.3.14). The veterinary department was not assessed by 290 farmers as 140 farmers revealed non-availability of veterinary department while 150 farmers did not require accessing the veterinary department. These sources were not required to access by 47.06 percent, 33.33 percent, 72 55 percent, 80.65 percent and 100 percent of the farmers of land holding categories (Table 7.3.15). On the whole, these sources were not required by 51.72 percent of the farmers while 48.28 percent of the farmers reported the non-availability of these sources. These sources were not required by 48 to 92 percent of the farmers across landholding categories. All the farmers did not access any NGO as 218 farmers (72.67 %) were not aware of any NGO while 82 farmers (27.33%) did not require to access them for any technical guidance regarding their crops (Table 7.3.16). The highest percentage of marginal farmers (89.32%) were not aware of NGOs while 77.14 percent of the large farmers did not require to access this source for any technical guidance.

Table 7.3.9: Reasons for not accessing the extension agents for technical advice in Punjab, 2018-19. **(Number)**

Landholding categories	Not aware	Not available	Not required	Others	Total
Marginal	103	-	-	-	103
%	(100.00)	-	-	-	(100.00)
Small	98	-	4	-	102
%	(96.08)	-	(3.92)	-	(100.00)
Medium	31	-	21	-	52
%	(59.62)	-	(40.38)	-	(100.00)
Large	13	-	21	-	34
%	(38.24)	-	(61.76)	-	(100.00)
Very large	-	-	8	-	8
%	-	-	(100.00)	-	(100.00)
Total	245	-	54	-	299
%	(81.94)	-	(18.06)	-	(100.00)

Figures in the parentheses are the percentages to total

Table 7.3.10: Reasons for not accessing the Krishi Vigyan Kendras for technical advice in Punjab, 2018-19. **(Number)**

Landholding categories	Not aware	Not available	Not required	Others	Total
Marginal	23	-	80	-	103
%	(22.33)	-	77.67	-	(100.00)
Small	8	11	83	-	102
%	(7.84)	(10.78)	81.37	-	(100.00)
Medium	6	12	31	-	49
%	(12.24)	(24.49)	63.27	-	(100.00)
Large	-	13	18	-	31
%	-	(41.94)	58.06	-	(100.00)
Very large	-	7	-	-	7
%	-	(100.00)	-	-	(100.00)
Total	37	43	212	-	292
%	(12.67)	(14.73)	72.60	-	(100.00)

Figures in the parentheses are the percentages to total

Table 7.3.11: Reasons for not accessing the agricultural university /colleges for technical advice in Punjab, 2018-19. **(Number)**

Landholding categories	Not aware	Not available	Not required	Others	Total
Marginal	-	-	100 (100.00)	-	100 (100.00)
Small	-	-	94 (100.00)	-	94 (100.00)
Medium	-	-	47 (100.00)	-	47 (100.00)
Large	-	-	29 (100.00)	-	29 (100.00)
Very large	-	-	6 (100.00)	-	6 (100.00)
Total	-	-	276 (100.00)	-	276 (100.00)

Figures in the parentheses are the percent to total

Table 7.3.12: Reasons for not accessing the private commercial agents including drilling contractors for technical advice in Punjab, 2018-19. **(Number)**

Landholding categories	Not aware	Not available	Not required	Others	Total
Marginal	-	-	28 (100.00)	-	28 (100.00)
Small	-	-	30 (100.00)	-	30 (100.00)
Medium	-	-	16 (100.00)	-	16 (100.00)
Large	-	-	5 (100.00)	-	5 (100.00)
Very large	-	-	5 (100.00)	-	5 (100.00)
Total	-	-	84 (100.00)	-	84 (100.00)

Figures in the parentheses are the percent to total

Table 7.3.13: Reasons for not accessing the progressive farmers for technical advice in Punjab, 2018-19. **(Number)**

Landholding categories	Not aware	Not available	Not required	Others	Total
Marginal	-	-	90 (100.00)	-	90 (100.00)
Small	-	-	89 (100.00)	-	89 (100.00)
Medium	-	5 (11.11)	40 (88.89)	-	45 (100.00)
Large	-	2 (6.45)	29 (93.55)	-	31 (100.00)
Very large	-	-	5 (100.00)	-	5 (100.00)
Total	-	7 (2.69)	253 (97.31)	-	260 (100.00)

Figures in the parentheses are the percent to total

Table 7.3.14: Reasons for not accessing the radio/tv/newspaper/internet for technical advice in Punjab, 2018-19. **(Number)**

Landholding categories	Not aware	Not available	Not required	Others	Total
Marginal	-	41 (51.25)	39 (48.75)	-	80 (100.00)
Small	-	45 (56.25)	35 (43.75)	-	80 (100.00)
Medium	-	10 (23.81)	32 (76.19)	-	42 (100.00)
Large	-	2 (7.41)	25 (92.59)	-	27 (100.00)
Very large	-	1 (16.67)	5 (83.33)	-	6 (100.00)
Total	-	**99** (42.13)	**136** 57.87)	-	**235** (100.00)

Figures in the parentheses are the percentages to total

Table 7.3.15: Reasons for not accessing the veterinary department for technical advice in Punjab, 2018-19. **(Number)**

Landholding categories	Not aware	Not available	Not required	Others	Total
Marginal	-	54 (52.94)	48 (47.06)	-	102 (100.00)
Small	-	66 (66.67)	33 (33.33)	-	99 (100.00)
Medium	-	14 (27.45)	37 (72.55)	-	51 (100.00)
Large	-	6 (19.35)	25 (80.65)	-	31 (100.00)
Very large	-	- -	7 (100.00)	-	7 (100.00)
Total	-	140 (48.28)	150 (51.72)	-	290 (100.00)

Figures in the parentheses are the percentages to total

Table 7.3.16: Reasons for not accessing the NGOs for technical advice in Punjab, 2018-19.

(Number)

Landholding categories	Not aware	Not available	Not required	Others	Total
Marginal	92 (89.32)	-	11 (10.68)	-	103 (100.00)
Small	86 (84.31)	-	16 (15.69)	-	102 (100.00)
Medium	29 (55.77)	-	23 (44.23)	-	52 (100.00)
Large	8 (22.86)	-	27 (77.14)	-	35 (100.00)
Very large	3 (37.50)	-	5 (62.50)	-	8 (100.00)
Total	218 (72.67)	-	82 (27.33)	-	300 (100.00)

Figures in the parentheses are the percentages to total

7.4 Whether the advice was followed if yes, whether the advised was useful and its impact

The adoption, usefulness and impact of advice is presented in Tables 7.4.1 to 7.4 4

Only one sampled farmer had taken technical guidance from the extension agent and the advice taken was adopted by him and he did not know about the advice taken was useful or not.

From Krishi Vigyan Kendras (KVKs), the technical advice was taken by 8 sampled farmers of which there were 37 percent, 50 percent and 1 percent were medium, large and very large farmers respectively. Out of 8 farmers the advice taken was beneficial for 5 (63%) farmers and moderately beneficial for 3 farmers (37%). To the medium farmers, out of 3 farmers, advice was beneficial for 33 percent of farmers while advice taken was moderately beneficial for 67 percent of the farmers. In case of large farmers who adopted the advice from KVKs, 75 percent of them reported the advice as beneficial while 25 percent revealed it as moderately beneficial. The technical advice taken by only one very large farmer from KVKs was reported as beneficial for him.

The technical advice was adopted by 24 sampled farmers from agricultural university/ college of which 84 percent of farmers revealed the adopted advice as useful while 8 percent of the farmers considered it as not useful and another 8 percent did not know about the advice as useful or not. The impact of the adoption was beneficial to 38 percent of the farmers while to 46 percent of the farmers the impact was moderately beneficial. There was no effect of the advice taken to 8 percent the farmers while another 8 percent of the farmers did not know the impact.

From private/ commercial agents 216 farmers (72%) out of 300 farmers adopted advice and adopted advice was useful to 92 percent of farmers while 7 percent revealed that they did not know whether the advice was useful or not and the advice was not useful to one percent of the farmers. The impact of taken advice was beneficial for 23 percent and moderately beneficial to 69 percent of the farmers. There was not effect of taken advice to one percent of farmers while 7 percent of them revealed they did not know about the impact. Across land holding categories , 75 marginal farmers adopted advice from private/ commercial agents out of which 95 percent revealed the adopted advice was useful while rest of 5 percent of the farmers did not know about advice. The impact of adoption of advice was beneficial for 15 percent and moderately beneficial for 80 percent of the farmers. In case of 72 small farmers who were the adopters of the advice from private/ commercial agents, the adopted advice was useful to 93 percent of the farmers while 7 percent of the farmers did not know about the useful of the advice. The impact of the adoption of advice was beneficial to 19 percent of the farmers while advice was moderately benefited to 74 percent of the farmers. Among the 36 medium, 36 large and 3 very

large farmers who were adopters of the technical advice from private/ commercial agents, the advice was useful to 83 percent, 93 percent and 100 percent of the farmers respectively. The impact of advice was beneficial to 64 percent, 40 percent and 33 percent of the farmers respectively of the farmer of said categories.

The number of farmers who adopted advice from progressive farmers was 40 including 13 marginal (32%), 13 small (32%), 7 medium (18%) 4 large (10%) and 3 very large (8%) respectively. The advice was revealed useful to 22 farmers including 4 marginal (31%),5 small (39%), 6 medium (86%), 4 large (100%) and 3 very large farmers(100%).Among the land holding categories impact of adopted advice was beneficial for 100 percent each of the large and very large farmers while impact was moderately benefited to 8 percent and 29 percent of the small and medium farmers respectively.

From radio/ newspaper and internet there were 65 sampled farmers including 23 marginal(35%), 22 small(34%), 10 medium(15%), 8 large(12%), and 2 very large(3%)who adopted the advice. It was revealed by 18 percent of the farmers that the advice was useful to them while advice was not considered useful by 2 percent of the farmers. Majority of the farmers (80%) didnôt know whether the advice was useful or not. The impact of the advice was beneficial to 6 percent of the farmers and moderately beneficial to 12 percent of the farmers. Among the farmers of different categories ,majority of the adopters of advice were 50 percent of the large farmers followed by marginal (22%), medium (20%), small (14%) and very large farmers(13%). The impact of adoption was revealed beneficial by majority of the medium farmers (10%) and moderately beneficial to majority of the large farmers(50%).

The advice from veterinary department was adopted by 10 farmers and it was revealed by all (100%) of them that the adopted advice was useful to them . The impact of adopted advice was beneficial for 60 percent of the farmers and moderately beneficial to 40 percent of the farmers. Majority of the large farmers were adopters of advice from the veterinary department and to all the farmers advice taken was useful. To 50 percent of the farmers the impact of advice was beneficial and moderately beneficial for rest of the 50 percent of the farmers.

None of the sampled farmer adopted advice from NGOôs.

Table 7.4.1: Whether recommended advice was adopted, useful and impact of adopted advice from extension agents and Krishi Vigyan Kendras in Punjab, 2018-19. **(Number)**

Landholding categories	Advice adopted	Adopted advice useful				Impact of adoption advice					
	Number of households who adopted the advice	Useful	Not useful	Don't know	Total	Beneficial	Moderately beneficial	No effect	Harmful	Don't know	Total
Extension agents											
Marginal	-	-	-	-	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-	-	-	-	-
Medium		-	-	-	-	-	-	-	-	-	-
Large	1 (100.0)	-	-	1 (100.0)	1 (100.00)	-	-	-	-	1 (100.0)	1 (100.0)
Very large	-	-	-	-	-	-	-	-	-	-	-
Total	1 (100.0)	-	-	1 (100.0)	1 (100.00)	-	-	-	-	1 (100.0)	1 (100.0)
Krishi Vigyan Kendras											
Marginal	-		-	-	-	-	-	-	-	-	-
Small	-		-	-	-	-	-	-	-	-	-
Medium	3 (37.0)	3 (100.0)	-	-	3 (100.0)	1 (33.0)	2 (67.0)	-	-	-	3 (100.0)
Large	4 (50.0)	4 (100.0)	-	-	4 (100.0)	3 (75.0)	1 (25.0)	-	-	-	4 (100.0)
Very large	1 (13.0)	1 (100.0)	-	-	1 (100.0)	1 (100.0)	-	-	-	-	1 (100.0)
Total	8 (100.0)	8 (100.0)	-	-	8 (100.0)	5 (63.0)	3 (37.0)	-	-	-	8 (100.0)

Figures in the parentheses are the percentages to total

Table 7.4.2: Whether recommended advice was adopted, useful and impact of adopted advice from agri. University/colleges and private commercial agents in Punjab, 2018-19. **(Number)**

Landholding categories	Advice adopted	Adopted advice useful				Impact of adoption advice					
	Number of households who adopted the advice	Useful	Not useful	Don't know	Total	Beneficial	Moderately beneficial	No effect	Harmful	Don't know	Total
Agri.university/colleges											
Marginal	3 (13.0)	3 (100.0)	-	-	3 (100.0)	-	3 (100.0)	-	-	-	3 (100.0)
Small	8 (33.0)	7 (87.0)	1 (13.0)	-	8 (100.0)	5 (62.0)	2 (25.0)	1 (13.0)	-	-	8 (100.0)
Medium	5 (21.0)	5 (100.0)	-	-	5 (100.0)	2 (40.0)	3 (60.0)		-	-	5 (100.0)
Large	6 (25.0)	4 (66.0)	1 (17.0)	1 (17.0)	6 (100.0)	2 (33.0)	2 (33.0)	1 (17.0)	-	1 (17.0)	6 (100.0)
Very large	2 (8.0)	1 (50.0)	-	1 (50.0)	2 (100.0)	-	1 (50.0)	-	-	1 (50.0)	2 (100.0)
Total	24 (100.0)	20 (84.0)	2 (8.0)	2 (8.0)	24 (100.0)	9 (38.0)	11 (46.0)	2 (8.0)	-	2 (8.0)	24 (100.0)
Private commercial agents											
Marginal	75 (35.0)	71 (95.0)	-	4 (5.0)	75 (100.0)	11 (15.0)	60 (80.0)	-	-	4 (5.0)	75 (100.0)
Small	72 (33.0)	67 (93.0)	-	5 (7.0)	72 (100.0)	14 (19.0)	53 (74.0)	-	-	5 (7.0)	72 (100.0)
Medium	36 (17.0)	30 (83.0)	1 (3.0)	5 (14.0)	36 (100.0)	7 (19.0)	23 (64.0)	1 (3.0)	-	5 (14.0)	36 (100.0)
Large	30 (14.0)	28 (93.0)	-	2 (7.0)	30 (100.0)	16 (53.0)	12 (40.0)	-	-	2 (7.0)	30 (100.0)
Very large	3 (1.0)	3 (100.0)	-	-	3 (100.0)	2 (67.0)	1 (33.0)	-	-	-	3 (100.0)
Total	216 (100.0)	199 (92.0)	1 (1.0)	16 (7.0)	216 (100.0)	50 (23.0)	149 (69.0)	1 (1.0)	-	16 (7.0)	216 (100.0)

Figures in the parentheses are the percentages to total

Table 7.4.3: Whether recommended advice was adopted, useful and impact of adopted advice from progressive farmers and radio/tv/newspaper/internet in Punjab, 2018-19. **(Number)**

Landholding categories	Advice adopted	Adopted advice useful				Impact of adoption advice					
	Number of households who adopted the advice	Useful	Not useful	Don't know	Total	Beneficial	Moderately beneficial	No effect	Harmful	Don't know	Total
Progressive farmers											
Marginal	13 (32.0)	4 (31.0)	1 (8.0)	8 (61.0)	13 (100.0)	4 (31.0)	-	1 (8.0)	-	8 (61.0)	13 (100.0)
Small	13 (32.0)	5 (39.0)	-	8 (61.0)	13 (100.0)	4 (31.0)	1 (8.0)	-	-	8 (61.0)	13 (100.0)
Medium	7 (18.0)	6 (86.0)	-	1 (14.0)	7 (100.0)	4 (57.0)	2 (29.0)	-	-	1 (14.0)	7 (100.0)
Large	4 (10.0)	4 (100.0)	-	-	4 (100.0)	4 (100.0)	-	-	-	-	4 (100.0)
Very large	3 (8.0)	3 (100.0)	-	-	3 (100.0)	3 (100.0)	-	-	-	-	3 (100.0)
Total	40 (100.0)	22 (55.0)	1 (3.0)	17 (42.0)	40 (100.0)	19 (47.0)	3 (8.0)	1 (3.0)	-	17 (42.0)	40 (100.0)
Radio/tv/newspaper/internet											
Marginal	23 (35.0)	5 (22.0)	-	18 (78.0)	23 (100.0)	2 (9.0)	3 (13.0)	-	-	18 (78.0)	23 (100.0)
Small	22 (34.0)	3 (14.0)	-	19 (86.0)	22 (100.0)	1 (5.0)	2 (9.0)	-	-	19 (86.0)	22 (100.0)
Medium	10 (15.0)	2 (20.0)	-	8 (80.0)	10 (100.0)	1 (10.0)	1 (10.0)	-	-	8 (80.0)	10 (100.0)
Large	8 (12.0)	1 (13.0)	1 (13.0)	6 (74.0)	8 (100.0)	-	1 (13.0)	1 (13.0)	-	6 (74.0)	8 (100.0)
Very large	2 (3.0)	1 (50.0)	-	1 (50.0)	2 (100.0)	-	1 (50.0)	-	-	1 (50.0)	2 (100.0)
Total	65 (100.0)	12 (18.0)	1 (2.0)	52 (80.0)	65 (100.0)	4 (6.0)	8 (12.0)	1 (2.0)	-	52 (80.0)	65 (100.0)

Figures in the parentheses are the percentages to total

Table 7.4.4: Whether recommended advice was adopted, useful and impact of adopted advice from veterinary department and NGOs in Punjab, 2018-19. **(Number)**

Landholding categories	Advice adopted	Adopted advice useful				Impact of adoption advice					
	Number of households who adopted the advice	Useful	Not useful	Don't know	Total	Beneficial	Moderately beneficial	No effect	Harmful	Don't know	Total
Veterinary department											
Marginal	1 (10.0)	1 (100.0)	-	-	1 (100.0)	1 (100.0)	-	-	-	-	1 (100.0)
Small	3 (30.0)	3 (100.0)	-	-	3 (100.0)	2 (67.0)	1 (33.0)	-	-	-	3 (100.0)
Medium	1 (10.0)	1 (100.0)	-	-	1 (100.0)	-	1 (100.0)	-	-	-	1 (100.0)
Large	4 (40.0)	4 (100.0)	-	-	4 (100.0)	2 (50.0)	2 (50.0)	-	-	-	4 (100.0)
Very large	1 (10.0)	1 (100.0)	-	-	1 (100.0)	1 (100.0)	-	-	-	-	1 (100.0)
Total	10 (100.0)	10 (100.0)	-	-	10 (100.0)	6 (60.0)	4 (40.0)	-	-	-	10 (100.0)
NGOs											
Marginal	-	-	-	-	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-	-	-	-	-
Medium	-	-	-	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-	-	-	-
Very large	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-

Figures in the parentheses are the percentages to total

7.5 if not followed the advice, reasons for not following:

The advice taken by the sampled farmers was adopted by 100 percent of the farmers.

7.6 MSP: Awareness about MSP and the agencies available in the study region for crop procurement

The opinions of the respondent farmers regarding the support under procurement and awareness about minimum support price (MSP) is presented as Table7.6.1

All the 227 paddy growers (100%) and 300 wheat growers (100%) were aware of the assured procurement and MSP at which they sold their produce. Across the landholding categories, in the case of paddy crop, marginal (27.31%), small (32 16 %), medium (21,59 %),large (15.42 %)and very large (3.52 %)farmers were aware of the MSP. About the MSP of wheat crop all the 34.33 percent, 34 percent, 17.33 percent 11.67 percent and 12.67 percent of the farmers of respective land holding categories were aware of. In case of cotton crop, 5 marginal(62.50) and 3 medium farmers(37.50) knew about the MSP of cotton. It was revealed by the majority of the paddy farmers (94.71%) that they did not know about the procuring agency. Only 12 respondent farmers (5.28%) were aware of the agencies procuring the paddy crop. Out of which only 6 farmers (3 small and 3 marginal farmers) knew about FCI and for another 6 farmers (3 small and 3 marginal) Pungrain was known to them. All the 70 maize growers (100.00%) did not know about any procurement agency. Out of 300 wheat growers, only 12 farmers knew about the agency (6 farmers each know FCI and Pungrain) which procured the produce while 288 farmers did not know about the name of any procurement agency. It was further revealed by all the sugarcane , potato, cotton, mungbean, and spring maize farmers that they did not know about the names of the procurement agencies of their crops as they sold their crops through ahrtiyas (Tables 7.6.2 to7.6.9).

Table 7.6.1: Whether aware of MSP related to the reported crops in Punjab, 2018-19. **(Number)**

Landholding categories	Aware of MSP						
	Paddy	**Wheat**	**Maize**	**Mungbean**	**Sugarcane**	**Potato**	**Cotton**
Marginal	62 (27.31)	103 (34.33)	-	-	-	-	5 (62.50)
Small	73 (32.16)	102 (34.00)	-	-	-	-	-
Medium	49 (21.59)	52 (17.33)	-	-	-	-	3 (37.50)
Large	35 (15.42)	35 (11.67)	-	-	-	-	-
Very large	8 (3.52)	8 (2.67)	-	-	-	-	-
Total	227 (100.00)	300 (100.00)	-	-	-	-	8 (100.00)

Figures in the parentheses are the percentages to total

Table 7.6.2: Agencies procuring the paddy crop at MSP in Punjab, 2018-19. **(Number)**

Landholding categories	FCI	JCI	CCI	NAFED	State food corporation	State civil supplies	Other (Pungrain)	Don't know	total
Marginal	-	-	-	-	-	-	3 (50.00)	59 (27.44)	62 (27.31)
Small	2 (33.33)	-	-	-	-	-	-	71 (33.02)	73 (32.16)
Medium	3 (50.00)	-	-	-	-	-	-	46 (21.40)	49 (21.59)
Large	1 (16.67)	-	-	-	-	-	3 (50.00)	31 (14.42)	35 (15.42)
Very large	-	-	-	-	-	-		8 (3.72)	8 (3.52)
Total	6 (100.00)	-	-	-	-	-	6 (100.00)	215 (100.00)	227 (100.00)

Figures in the parentheses are the percentages to total

Table7.6.3: Agencies procuring the maize crop at MSP in Punjab, 2018-19. **(Number)**

Landholding categories	FCI	JCI	CCI	NAFED	State food corporation	State civil supplies	Other	Don't know	Total
Marginal	-	-	-	-	-	-	-	38 (54.29)	38 (54.29)
Small	-	-	-	-	-	-	-	29 (41.42)	29 (41.42)
Medium	-	-	-	-	-	-	-	3 (4.29)	3 (4.29)
Large	-	-	-	-	-	-	-	-	-
Very large	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	70 (100.00)	70 (100.00)

Figures in the parentheses are the percentages to total

Table 7.6.4: Agencies procuring the wheat crop at MSP in Punjab, 2018-19. **(Number)**

Landholding categories	FCI	JCI	CCI	NAFED	State food corporation	State civil supplies	Other (Pungrain)	Don't know	Total
Marginal	-	-	-	-	-	-	3 (50.00)	100 (34.72)	103 (34.33)
Small	2 (33.33)	-	-	-	-	-	-	100 (37.72)	102 (34.00)
Medium	3 (50.00)	-	-	-	-	-	-	49 (17.01)	52 (17.33)
Large	1 (16.67)	-	-	-	-	-	3 (50.00)	31 (10.76)	35 (11.67)
Very large	-	-	-	-	-	-	-	8 (2.78)	8 (2.67)
Total	6 (100.00)	-	-	-	-	-	6 (100.00)	288 (100.00)	300 (100.00)

Figures in the parentheses are the percentages to total

Table 7.6.5: Agencies procuring the mungbean crop at MSP in Punjab, 2018-19. **(Number)**

Landholding categories	FCI	JCI	CCI	NAFED	State food corporation	State civil supplies	Other	Don't know	Total
Marginal	-	-	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-	-	-
Medium	-	-	-	-	-	-	-	1 (14.29)	1 (14.29)
Large	-	-	-	-	-	-	-	5 (71.42)	5 (71.42)
Very large	-	-	-	-	-	-	-	1 (14.29)	1 (14.29)
Total	-	-	-	-	-	-	-	7 (100.00)	7 (100.00)

Figures in the parentheses are the percentages to total

Table 7.6.6: Agencies procuring the sugarcane crop at MSP in Punjab, 2018-19. **(Number)**

Landholding categories	FCI	JCI	CCI	NAFED	State food corporation	State civil supplies	Other	Don't know	Total
Marginal	-	-	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-	1 (16.67)	1 (16.67)
Medium	-	-	-	-	-	-	-	2 (33.33)	2 (33.33)
Large	-	-	-	-	-	-	-	1 (16.67)	1 (16.67)
Very large	-	-	-	-	-	-	-	2 (33.33)	2 (33.33)
Total	-	-	-	-	-	-	-	6 (100.00)	6 (100.00)

Figures in the parentheses are the percentages to total

Table 7.6.7: Agencies procuring the potato reported crop at MSP in Punjab, 2018-19. **(Number)**

Landholding categories	FCI	JCI	CCI	NAFED	State food corporation	State civil supplies	Other	Don't know	Total
Marginal	-	-	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-	4 (17.39)	4 (17.39)
Medium	-	-	-	-	-	-	-	7 (30.73)	7 (30.73)
Large	-	-	-	-	-	-	-	10 (43.48)	10 (43.48)
Very large	-	-	-	-	-	-	-	2 (8.70)	2 (8.70)
Total	-	-	-	-	-	-	-	23 (100.00)	23 (100.00)

Figures in the parentheses are the percentages to total

Table 7.6.8: Agencies procuring the cotton crop at MSP in Punjab, 2018-19. **(Number)**

Landholding categories	FCI	JCI	CCI	NAFED	State food corporation	State civil supplies	Other	Don't know	Total
Marginal	-	-	-	-	-	-	-	5 (62.50)	5 (62.50)
Small	-	-	-	-	-	-	-	-	-
Medium	-	-	-	-	-	-	-	3 (37.50)	3 (37.50)
Large	-	-	-	-	-	-	-	-	-
Very large	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	8 (100.00)	8 (100.00)

Figures in the parentheses are the percentages to total

Table:7.6.9 Agencies procuring the spring maize crop at MSP in Punjab, 2018-19. **(Number)**

Landholding categories	FCI	JCI	CCI	NAFED	State food corporation	State civil supplies	Other	Don't know	Total
Marginal	-	-	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-	1 (11.11)	1 (11.11)
Medium	-	-	-	-	-	-	-	4 (44.45)	4 (44.45)
Large	-	-	-	-	-	-	-	3 (33.33)	3 (33.33)
Very large	-	-	-	-	-	-	-	1 (11.11)	1 (11.11)
Total	-	-	-	-	-	-	-	9 (100.0)	9 (100.0)

Figures in the parentheses are the percentages to total

7.7 Public procurement agencies to which the crops have been sold- quantity, price, total value

Minimum Support Prices are an important component of agriculture price policy in India. The scheme provides the floor price for farm produce and also makes food grains available for buffer stock and PDS. It provides security for long-term investment decisions of the farmers. Another important objective of MSP is to incentivize the farmer to allocate resources in socially desired cropping patterns. The Centre Government currently fixes MSPs for 23 farm commodities based on the Commission for Agricultural Costs and Prices (CACP) recommendations:

1. 7 cereals (paddy, wheat, maize, bajra, jowar, ragi and barley)
2. 5 pulses (chana, arhar/tur, urad, moong and masur)
3. 7 oilseeds (rapeseed-mustard, groundnut, soyabean, sunflower, sesamum, safflower and nigerseed) and
4. 4 commercial crops (cotton, sugarcane, copra and raw jute)

As the produce of two main crops i.e paddy and wheat crops was sold at MSP in Punjab by the farmers. The total value of the crops sold to agencies at MSP is mentioned in Tables 7.7.1 and 7.7.2.The quantity of paddy sold to agencies varied between 303988 kgs and 1661535 kgs respectively. On an average, the price at which the produce of paddy was sold stood at Rs.17.70 and value of crop varied between Rs 53.80 lakh and Rs.2.94 crore among different categories of farmers. The total quantity of paddy sold was 4467727 kgs and the value of the produce came out to be Rs. 7.90 crore.

Table 7.7.1: Total value of paddy crop sold to agencies at MSP in Punjab, 2018-19.

Landholding categories	Quantity sold (Kg)	Sale price (Rs)	Value of the crop (Rs)
Marginal	303988	17.70	5380588
Small	760809	17.70	13466319
Medium	1010245	17.70	17881337
Large	1661535	17.70	29409170
Very large	731150	17.70	12941355
Total	4467727	17.70	79078768

The quantity of wheat sold to agencies varied between 201596 kgs and 911125 kgs respectively. On an average, the price at which the produce of paddy was Rs.18.40 and value of crop varied between Rs 37.09 lakh and Rs.1.67 crore among different categories of

farmers. The total quantity of wheat sold to the agencies at MSP was 2733883kgs which was valued at Rs. 5.02 crore.

Table 7.7.2: Total value of wheat crop sold to agencies at MSP in Punjab, 2018-19.

Landholding categories	Quantity sold (Kg)	Sale price (Rs)	Value of the crop (Rs)
Marginal	201596	18.40	3709366
Small	551102	18.40	10140277
Medium	657760	18.40	12095084
Large	911125	18.40	16764700
Very large	412300	18.40	7586320
Total	2733883	18.40	50295747

7.8 Reasons if not sold to any agency and quantity sold at below MSP

The sampled farmers sold whole of their produce i.e wheat and paddy to the procurement agencies at MSP and no quantity of the produce was sold below MSP. In case of cotton crop , farmers sold their cotton produce at the price below the MSP fixed by the government. The reasons for getting the unreasonable prices for the cotton crops were detailed out by the farmers which has been presented in Table 3.2.17.

7.9 PM-AASHA: This scheme was not applicable in the Punjab State**.**

7.10 PM-KISAN:Assistance under PM-KISAN, if any; number of households; payment received and time taken

Farmers received assistance under the scheme PM-Kisan. On the whole, 145 sampled farmers (75 marginal, 58 small, 8 medium and 4 large farmers) out of 300 farmers received assistance under PM-Kisan. The average amount of money received by the farmers of different categories is presented in Table 7.10.1.

Overall Rs 3234.90 were received by the farmers under PM-Kisan scheme. The amount of money received by marginal, small, medium and large farmers were Rs 3342.11, Rs 3033.30, Rs 3555.56 and Rs 3500.00 respectively. None of the very large farmer availed any assistance under this scheme. An average time taken to get the amount reported by farmers was one month and 68 days. The marginal, small, medium and large farmers availed the amount in 1 month 57 days, one month 80 days, one month 63 days and 2 months time respectively (Table 7.10.2).

Table 7.10.1: Total payment received under PM-KISAN (mean value) in Punjab, 2018-19.

Landholding categories	Number of households received assistance under PM-Kisan	Payment received (Rs)
Marginal	75	3342.11
Small	58	3033.33
Medium	8	3555.56
Large	4	3500.00
Very large	-	-
Total	145	3234.90

Table 7.10.2: Time taken to receive payment under PM-KISAN (mean value) in Punjab, 2018-19

Landholding categories	Time taken (month)
Marginal	1.57
Small	1.80
Medium	1.63
Large	2.00
Very large	-
Overall	1.68

7.11 Insurance: crops insured and reasons if not insured

The crops grown by all the farmers i.e. paddy, wheat, maize, cotton, sugarcane, potato, mungbean and spring maize were not insured at all (Table 7.11.1 to Table 7.11.8)

The main reasons for not insuring the crops were that farmers were not interested (71 paddy including 25.25 % marginal, 32.39% small, 21.13% medium, 18.31% large and 2.82 % very large farmers), 87 wheat farmers(including 36.78 % marginal, 29.89% small, 17.24% medium, 13.79 % large and 2.30% very large farmers), 15 maize(including 80 % marginal 20 % small) one sugarcane farmer(100% very large) and two spring maize(100%large) while some revealed that they did not need insuring of the crops (153 paddy including27.45 % marginal, 32.03 % small, 22.22 % medium, 14.38 % large and 3.92% very large farmers), 210 wheat farmers including 32.86 % marginal, 35.71 % small, 17.62 % medium, 10.95% large and 2.86% very large farmers, 55 maize including47.27% marginal, 47.27 % small, 5.46% medium farmers , 5 sugarcane including 20 % small, 40 % medium, 20% large and 20% very large farmers , 2 mungbean farmers including 50 % medium, 50% large) and 7 spring maize farmers including 14.29 % small 57.13% medium, 14.29 % large and 14.29% very large

farmers,. The cotton growers (54 farmers including28.57% marginal, 35.71 % small, 21.43 % medium, 14.29% large) reported the lack of resources for premium payment and dissatisfaction with terms and conditions was reported by 2 famers(including 50% marginal and50 % medium farmers). Similar reasons were reported by14 (including 28.57 % small 28.57% medium, 35.71% large and 7.14 % very large farmers and 7 including 42.86% medium, 42.86 % large and 14.29% very large) potato farmers respectively (Table 7.11.9 to Table 7.11.16)

Table 7.11.1.: Whether the paddy crop insured in Punjab, 2018-19. (Number)

Landholding categories	Insured only when received loan	Insured additionally	Not insured
Marginal	-	-	62 (27.31)
Small	-	-	73 (32.16)
Medium	-	-	49 (21.59)
Large	-	-	35 (15.42)
Very large	-	-	8 (3.52)
Total	-	-	227 (100.00)

Figures in the parentheses are the percentages to total

Table 7.11.2: Whether the wheat crop insured in Punjab, 2018-19. (Number)

Landholding categories	Insured only when received loan	Insured additionally	Not insured
Marginal	-	-	103 (34.33)
Small	-	-	102 (34.00)
Medium	-	-	52 (17.33)
Large	-	-	35 (11.67)
Very large	-	-	8 (2.67)
Total	-	-	300 (100.00)

Figures in the parentheses are the percentages to total

Table 7.11.3: Whether the maize crop insured in Punjab, 2018-19. **(Number)**

Landholding categories	Insured only when received loan	Insured additionally	Not insured
Marginal	-	-	38 (54.29)
Small	-	-	29 (41.42)
Medium	-	-	3 (4.29)
Large	-	-	-
Very large	-	-	-
Total	-	-	70 (100.00)

Figures in the parentheses are the percentages to total

Table 7.11.4: Whether the cotton crop insured in Punjab, 2018-19. **(Number)**

Landholding categories	Insured only when received loan	Insured additionally	Not insured
Marginal	-	-	5 (31.25)
Small	-	-	5 (31.25)
Medium	-	-	4 (25.00)
Large	-	-	2 (12.50)
Very large	-	-	-
Total	-	-	16 (100.00)

Figures in the parentheses are the percentages to total

Table 7.11.5: Whether the sugarcane crop insured in Punjab, 2018-19. **(Number)**

Landholding categories	Insured only when received loan	Insured additionally	Not insured
Marginal	-	-	-
Small	-	-	1 (16.67)
Medium	-	-	2 (33.33)
Large	-	-	1 (16.67)
Very large	-	-	2 (33.33)
Total	-	-	6 (100.00)

Figures in the parentheses are the percentages to total

Table 7.11.6: Whether the potato crop insured in Punjab, 2018-19. (Number)

Landholding categories	Insured only when received loan	Insured additionally	Not insured
Marginal	-	-	-
Small	-	-	4 (17.39)
Medium	-	-	7 (30.43)
Large	-	-	10 (43.48)
Very large	-	-	2 (8.70)
Total	-	-	23 (100.00)

Figures in the parentheses are the percentages to total

Table 7.11.7: Whether the mungbean cropi insured in Punjab, 2018-19. (Number)

Landholding categories	Insured only when received loan	Insured additionally	Not insured
Marginal	-	-	-
Small	-	-	-
Medium	-	-	1 (14.29)
Large	-	-	5 (71.43)
Very large	-	-	1 (14.29)
Total	-	-	7 (100.00)

Figures in the parentheses are the percentages to total

Table 7.11.8: Whether the spring maize crop insured in Punjab, 2018-19. (Number)

Landholding categories	Insured only when received loan	Insured additionally	Not insured
Marginal	-	-	-
Small	-	-	1 (11.11)
Medium	-	-	4 (44.45)
Large	-	-	33.33)
Very large	-	-	1 (11.11)
Total	-	-	9 (100.00)

Figures in the parentheses are the percentages to total

Table 7.11.9: Reasons for not insuring paddy crop in Punjab, 2018-19. **(Number)**

Landholding categories	Not aware	Not aware about the availability of facility	Not interested	No need	Insurance facility not available	Lack of resources for premium payment	Not satisfied with terms & conditions	Nearest bank at a long distance	Complex procedures	Delay in claim payment	Total
Marginal	-	-	18 (25.25)	42 (27.45)	-	-	2 (66.67)	-	-	-	62 (27.31)
Small	-	-	23 (32.39)	49 (32.03)	-	-	1 (33.33)	-	-	-	73 (32.16)
Medium	-	-	15 (21.13)	34 (22.22)	-	-	-	-	-	-	49 (21.59)
Large	-	-	13 (18.31)	22 (14.38)	-	-	-	-	-	-	35 (15.42)
Very large	-	-	2 (2.82)	6 (3.92)	-	-		-	-	-	8 (3.52)
Total	-	-	71 (100.00)	153 (100.00)	-	-	3 (100.00)	-	-	-	227 (100.00)

Figures in the parentheses are the percentages to total

Table 7.11.10: Reasons for not insuring the wheat crop in Punjab, 2018-19. **(Number)**

Landholding categories	Not aware	Not aware about the availability of facility	Not interested	No need	Insurance facility not available	Lack of resources for premium payment	Not satisfied with terms & conditions	Nearest bank at a long distance	Complex procedures	Delay in claim payment	Total
Marginal	-	-	32 (36.78)	69 (32.86)	-	-	2 (66.67)	-	-	-	103 (34.33)
Small	-	-	26 (29.89)	75 (35.71)	-	-	1 (33.33)	-	-	-	102 (34.00)
Medium	-	-	15 (17.24)	37 (17.62)	-	-	-	-	-	-	52 (17.33)
Large	-	-	12 (13.79)	23 (10.95)	-	-	-	-	-	-	35 (11.67)
Very large	-	-	2 (2.30)	6 (2.86)	-	-	-	-	-	-	8 (2.67)
Total	-	-	87 (100.00)	210 (100.00)	-	-	3 (100.00)	-	-	-	300 (100.00)

Figures in the parentheses are the percentages to total

Table 7.11.11: Reasons for not insuring the maize crop in Punjab, 2018-19. **(Number)**

Landholding categories	Not aware	Not aware about the availability of facility	Not interested	No need	Insurance facility not available	Lack of resources for premium payment	Not satisfied with terms & conditions	Nearest bank at a long distance	Complex procedures	Delay in claim payment	Total
Marginal	-	-	12 (80.0)	26 (47.27)	-	-	-	-	-	-	38 (54.29)
Small	-	-	3 (20.0)	26 (47.27)	-	-	-	-	-	-	29 (41.42)
Medium	-	-	-	3 (5.46)	-	-	-	-	-	-	3 (4.29)
Large	-	-	-	-	-	-	-	-	-	-	-
Very large	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	15 (100.0)	55 (100.0)	-	-	-	-	-	-	70 (100.00)

Figures in the parentheses are the percentages to total

Table 7.11.12: Reasons for not insuring the cotton crop in Punjab, 2018-19. **(Number)**

Landholding categories	Not aware	Not aware about the availability of facility	Not interested	No need	Insurance facility not available	Lack of resources for premium payment	Not satisfied with terms & conditions	Nearest bank at a long distance	Complex procedures	Delay in claim payment	Total
Marginal	-	-	-	-	-	4 (28.57)	1 (50.00)	-	-	-	5 (31.25)
Small	-	-	-	-	-	5 (35.71)		-	-	-	5 (31.25)
Medium	-	-	-	-	-	3 (21.43)	1 (50.00)	-	-	-	4 (25.00)
Large	-	-	-	-	-	2 (14.29)		-	-	-	2 (12.50)
Very large	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	14 (100.00)	2 (100.00)	-	-	-	16 (100.00)

Figures in the parentheses are the percentages to total

Table 7.11.13: Reasons for not insuring sugarcane crop in Punjab, 2018-19. **(Number)**

Landholding categories	Not aware	Not aware about the availability of facility	Not interested	No need	Insurance facility not available	Lack of resources for premium payment	Not satisfied with terms & conditions	Nearest bank at a long distance	Complex procedures	Delay in claim payment	Total
Marginal	-	-	-	-	-	-	-	-	-	-	-
Small	-	-	-	1 (20.00)	-	-	-	-	-	-	1 (16.67)
Medium	-	-	-	2 (40.00)	-	-	-	-	-	-	2 (33.33)
Large	-	-	-	1 (20.00)	-	-	-	-	-	-	1 (16.67)
Very large	-	-	1 (100.00)	1 (20.00)	-	-	-	-	-	-	2 (33.33)
Total	-	-	1 (100.00)	5 (100.0)	-	-	-	-	-	-	6 (100.00)

Figures in the parentheses are the percentages to total

Table 7.11.14: Reasons for not insuring the potato crop in Punjab, 2018-19. **(Number)**

Landholding categories	Not aware	Not aware about the availability of facility	Not interested	No need	Insurance facility not available	Lack of resources for premium payment	Not satisfied with terms & conditions	Nearest bank at a long distance	Complex procedures	Delay in claim payment	Total
Marginal	-	-	-	-	-	-	-	-	-	-	-
Small	-	-	-	-	-	4 (28.57)	-	-	-	-	4 (17.39)
Medium	-	-	-	-	-	4 (28.57)	3 (42.86)	-	-	-	7 (30.43)
Large	-	-	1 (100.00)	1 (100.00)	-	5 (35.71)	3 (42.86)	-	-	-	10 (43.48)
Very large	-	-	-	-	-	1 (7.14)	1 (14.29)	-	-	-	2 (8.70)
Total	-	-	1 (100.00)	1 (100.00)	-	14 (100.00)	7 (100.00)	-	-	-	23 (100.00)

Figures in the parentheses are the percentages to total

Table 7.11.15: Reasons for not insuring the mungbean crop in Punjab, 2018-19. **(Number)**

Landholding categories	Not aware	Not aware about the availability of facility	Not interested	No need	Insurance facility not available	Lack of resources for premium payment	Not satisfied with terms & conditions	Nearest bank at a long distance	Complex procedures	Delay in claim payment	Total
Marginal	-	-	-	-	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-	-	-	-	-
Medium	-	-	-	1 (50.00)	-	-	-	-	-	-	1 (14.29)
Large	-	-	4 (80.00)	1 (50.00)	-	-	-	-	-	-	5 (71.43)
Very large	-	-	1 (20.00)		-	-	-	-	-	-	1 (14.29)
Total	-	-	5 (100.00)	2 (100.00)	-	-	-	-	-	-	7 (100.00)

Figures in the parentheses are the percentages to total

Table7.11.16 : Reasons for not insuring the spring maize crop in Punjab, 2018-19. **(Number)**

Landholding categories	Not aware	Not aware about the availability of facility	Not interested	No need	Insurance facility not available	Lack of resources for premium payment	Not satisfied with terms & conditions	Nearest bank at a long distance	Complex procedures	Delay in claim payment	Total
Marginal	-	-	-	-	-	-	-	-	-	-	-
Small	-	-	-	1 (14.29)	-	-	-	-	-	-	1 (11.11)
Medium	-	-	-	4 (57.13)	-	-	-	-	-	-	4 (44.45)
Large	-	-	2 (100.0)	1 (14.29)	-	-	-	-	-	-	33.33)
Very large	-	-	-	1 (14.29)	-	-	-	-	-	-	1 (11.11)
Total	-	-	2 (100.0)	7 (100.0)	-	-	-	-	-	-	9 (100.00)

Figures in the parentheses are the percentages to total

7.11.2 whether experienced crop loss and reasons for the loss**--- Not applicable**

7.11.3 estimated crop loss, total premium paid and the claim amount received; delay in receipt of payment --------**Not applicable**

7.11.4 Reasons for not receiving the claim amount ï **Not applicable**

CHAPTER 8

PROBLEMS IN FARMING, ECONOMIC RISKS FACED, COPING STRATEGIES AND SOCIAL NETWORKS

This chapter has been discussed under the following heads:

8.1 Whether income from farming is adequate

8.2 If not, reasons for the same and their severity

8.3 Types of economic risks faced by the households during the last two years and their ranking.

8.4 Coping strategies undertaken for the economic risks faced.

8.5 Social networks ï whether have membership in various organizations, if a member then position held in the organization and benefits of being a member; if not a member then reasons for it.

8.1 Whether income from farming is adequate

The farmers growing different crops revealed that the income from farming was not adequate and this was reported by 291 farmers (97 percent) out of 300 framers. Only 9 framers were satisfied with the income from farming (Table 8.1.1). Dissatisfaction over the income from farming was revealed by 100 percent each of the large and very large farmers, 96 percent each of the marginal and small and 98 percent of the medium farmers respectively..

Table 8.1.1: Whether income from farming is adequate in Punjab, 2018-19.

Landholding categories	Number of households		Percentage of households	
	Yes	No	Yes	No
Marginal	4	99	3.89	96.11
Small	4	98	3.93	96.07
Medium	1	51	1.93s	98.07
Large	-	35	-	100.00
Very large	-	8	-	100.00
Total	9 (3.00)	291 (97.00)	100.00	100.00

Figures in the parentheses indicate the percentages to the total number of HHs

8.2 If not, reasons for the same and their severity

The reasons for inadequate income revealed by farmers is presented in Table 8.2.1 Majority of the farmers (62%) revealed pest problems/crop diseases followed by destruction of crops by other animals (54.33%), high input costs (30%), problem of paddy straw management (25.67%), small land size (25.67%), prices not remunerative (18.67%), fluctuating rainfall (16.33%) and high interest rates charged on loan amount (14.17%) respectively.

Table 8.2.1: Reasons for inadequate income from farming in Punjab, 2018-19.

Reasons	Landholding categories											
	Marginal		Small		Medium		Large		Very large		Total	
	N0.	*%*	*N0.*	*%*	*N0.*	*%*	*N0.*	*%*	*N0.*	*%*	*N0.*	*%*
Yield going down	2	66.67	1	33.33	-	-	-	-	-	-	3 (1.00)	100.00
Yield fluctuating a lot	-	-	4	13.33	13	43.33	12	40.00	1	3.33	30 (10.00)	100.00
Small land size	59	76.62	10	12.99	4	5.19	4	5.19	-	-	77 (25.67)	100.00
Absence of irrigation	-	-	-	-	2	66.67	1	33.33	-	-	3 (1.00)	100.00
Insufficient irrigation	1	100.00	-	-	-	-	-	-	-	-	1 (0.33)	100.00
Price not remunerative	14	25.00	21	37.50	9	16.07	10	17.86	2	3.57	56(18.67)	100.00
Price fluctuating a lot	-	-	1	6.67	4	26.67	8	53.33	2	13.33	15 (5.00)	100.00
Rainfall too high	4	100.00	-	-	-	-	-	-	-	-	4 (1.33)	100.00
Rainfall fluctuating a lot	4	8.16	7	14.29	13	26.53	21	42.86	4	8.16	49 (16.33)	100.00
Pest problem/crop diseases	60	32.26	66	35.48	33	17.74	20	10.75	7	3.76	186 (62.00)	100.00
Absence of storage facility	-	-	-	-	-	-	4	80.00	1	20.00	5 (1.67)	100.00
Absence of market facilities	-	-	-	-	-	-	2	100.00	-	-	2 (0.67)	100.00
Poor market facilities	-	-	-	-	-	-	3	100.00	-	-	3 (1.00)	100.00
Poor road connectivity	-	-	1	100.00	-	-	-	-	-	-	1 (0.33)	100.00
Government support not available	8	21.62	14	37.84	8	21.62	6	16.22	1	2.70	37 (12.33)	100.00
Uncertain govt support	1	33.33	-	-	1	33.33	1	33.33	-	-	3 (1.00)	100.00
Limited sources of credit	23	67.65	5	14.71	2	5.88	4	11.76	-	-	34 (11.33)	100.00
Bank credit not available	2	100.00	-	-	-	-	-	-	-	-	2 (0.67)	100.00
High interest rate of money lenders	16	36.36	10	22.73	9	20.45	8	18.18	1	2.27	44 (14.67)	100.00
Rodent problem	-	-	1	50.00	1	50.00	-	-	-	-	2 (0.67)	100.00
Other animal problem	59	36.20	66	40.49	28	17.18	7	4.29	3	1.84	163 (54.33)	100.00
Lab shortage	-	-	4	30.77	3	23.08	4	30.77	2	15.38	13 (4.33)	100.00
High rental value of lease-in land	2	4.88	8	19.51	13	31.71	13	31.71	5	12.20	41 (13.67)	100.00
High input cost	18	20.00	30	33.33	26	28.89	13	14.44	3	3.33	90 (30.00)	100.00
Problems of paddy straw management	6	7.79	9	11.69	20	25.97	34	44.16	8	10.39	77 (25.67)	100.00

Figures in the parentheses indicate the percentages to the total number of HHs

The problems revealed by the farmers as moderate were yield going down (3 farmers) yield fluctuating a lot (29 farmers), small land size (34 farmers), absence of irrigation (3 farmers), price not remunerative (49 farmers), price fluctuating a lot (12 farmers), rainfall fluctuation (41 farmers) pest problem/ crop diseases (70 farmers), government support not available (30 farmers) limited source of credit (21 farmers), high interest rate of money lender (22 farmers), other animal problems (10 farmers), problem of paddy straw management (36 farmers) (Table 8.2.2)

The severity was revealed (Table 8.2.2 to Table 8.2.26) high in case of small land size (43 farmers), pest problems/crop diseases (115 farmers) high interest rate of money lender (22 farmers) other animal problems (133 farmers), high rental value of lease in land (25 farmers) and problems of paddy straw management (33 farmers).

The problem of yield going down was considered moderate by 3 farmers only out of which 2 farmers (66.67%) were marginal and 33.33 percent were small farmers. Yield fluctuating a lot was another problem faced by 30 farmers, out of which 29 farmers including 13.78 percent marginal, 44.85 percent small, 11 percent large and 3.45 percent very large farmers revealed it as moderate. Out of 77 farmers 34 percent farmers reported the problem of small land size as moderate. Across land holding categories majority of marginal farmers (79.41%) revealed is as moderate followed by small farmers (17.65%).

The severity of this problem was high to 55. 84 percent of the farmers and majority of marginal farmers (74.42%) revealed the severity as high. Absence of irrigation was reported by 3 farmers including 2 marginal and one small farmer respectively. Insufficient irrigation was reported moderate by only one farmer. Price not remunerative was opined by 56 farmers and it was revealed as moderate by 49 farmers out of which across land holding categories this problem was considered moderate by 26.53 percent, 40.82 percent, 18.37 percent, 12.24 percent and 2.04 percent of marginal, small, medium, large and very large farmers. The severity of the problems was high to 7 farmers. Price fluctuating a lot was the another problem faced by 15 farmers and out of which 12 farmers (8.33% small, 33.33% medium, 41.63% large and 16.67% very large) revealed it as moderate. Rainfall too high was considered moderate by 4 farmers out of which 2 marginal farmers (100%) revealed it as moderate and another 2 marginal farmers (100%) reported the severity as high.

One of the major problem faced by 186 farmers was of pest problem/ crop diseases and the severity of this problem was high to 115 farmers of which majority of small farmers (36.52%) had reported high severity followed by marginal (32.17%), medium (18.26%), large (11.30%) and very large (1.74%) farmers respectively. The other 70 framers revealed the severity of this

problem as moderate including 31.43%, 34.29%, 17.14%, 10.00% and 7.14% marginal, small, medium, large and very large farmers respectively. Absence of storage facility was revealed as their problem by 5 farmers out which 4 large farmers (including 75 % of the large and 25 % of the very large) revealed its severity as moderate. Absence of market facilities were revealed by only 2 large farmers and its severity to them was moderate. Poor road connectivity was reported was reported as low severity to only one small farmers. Uncertain govt support was stated by 3 farmers and its severity was revealed high by 50 percent of the marginal and 50 percent of large farmers while only one medium farmer reported its moderate severity. Problem of limited sources of credit was reported by 34 farmers of which severity was low, moderate and high to 2.94 percent 61.76 percent and 35.29 percent of the farmers respectively. Majority of the marginal farmers revealed the severity of the problem as moderate (57.14%) and it was high to 83.33 percent of them. The severity of the problem of bank credit not available was moderate and high to all marginal farmers.

High interest rate of money lenders was the another problem which 44 (14.66%) out of 300 farmers revealed. The problem was reported as moderate by 50 percent of the farmers each as moderate and high. majority of the small farmers (59%) considered it as moderate while severity of this problem was revealed high by most of the medium farmers. The problem of rodents was stated by 2 farmers only and its severity was moderate and high to one each medium and marginal farmers.

The problem of damage of the crops was revealed by 54.33 percent (out of 300 farmers) of the households. Its severity was high to 81.59 percent of the farmers and those who reported the severity of this problem low and moderate were 12.26 percent and 6.13 percent of the farmers respectively. The problem of labour shortage was revealed by 13 (4.33%) farmers and out of this its severity was moderate to 84.61 percent of the farmers. More of large farmers (36.36%) had moderate severity of this problem. High rental value of lease in land was the problem of 41 farmers (13.66% of the 300 farmers), out which the severity of the problem was moderate to 39.40 percent of the farmers while 60.29 percent of the farmers reported the high severity of this problem.

High input cost was the another problem which 30 percent the farmers faced with. Out of this severity of this problem was moderate to 84.44 percent and high to 15.55 percent of the farmers. The farmers with moderate severity were 21.05 percent, 34.21 percent, 30.26 percent, 11.84 percent and 2.22 percent of marginal, small, medium, large and very large farmers respectively.

Another problem stated by 77farmers (25 %) out of 300 framers was of paddy straw management. The severity of this problem was low, moderate and high to 10.38 percent, 46.75

percent and 42.85 percent of the farmers respectively. The high severity was to the large (57.57%) followed by very large (24.24%) and medium (12.12%) and small (6.06%) farmers. The severity of the problem was moderate to majority of the large farmers (41.66%) followed by medium(36.11%), small (19.44%) and marginal farmers (2.77%) respectively..

Table 8.2.2: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Yield going down			
	Low	Moderate	High	Total
Marginal	-	2 (66.67)	-	2 (66.67)
Small	-	1 (33.33)	-	1 (33.33)
Medium	-	-	-	-
Large	-	-	-	-
Very large	-	-	-	-
Total	-	3 (100.00)	-	3 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.3: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Yield fluctuating a lot			
	Low	Moderate	High	Total
Marginal	-	-	-	-
Small	-	4 (13.79)	-	4 (13.33)
Medium	-	13 (44.83)	-	13 (43.33)
Large	-	11 (37.93)	1 (100.00)	12 (40.00)
Very large	-	1 (3.45)	-	1 (3.33)
Total	-	29 (100.00)	1 (100.00)	30 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.4: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Small land size			
	Low	Moderate	High	Total
Marginal	-	27 (79.41)	32 (74.42)	59 (76.62)
Small	-	6 (17.65)	4 (9.30)	10 (12.99)
Medium	-	1 (2.94)	3 (6.98)	4 (5.19)
Large	-	-	4 (9.30)	4 (5.19)
Very large	-	-	-	-
Total	-	34 (100.00)	43 (100.00)	77 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.5: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Absence of irrigation			
	Low	Moderate	High	Total
Marginal	-	-	-	-
Small	-	-	-	-
Medium	-	2 (66.67)	-	2 (66.67)
Large	-	1 (33.33)	-	1 (33.33)
Very large	-	-	-	-
Total	-	3 (100.00)	-	3 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.6: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Insufficient irrigation			
	Low	Moderate	High	Total
Marginal	-	1 (100.00)	-	1 (100.00)
Small	-	-	-	-
Medium	-	-	-	-
Large	-	-	-	-
Very large	-	-	-	-
Total	-	1 (100.00)	-	1 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.7: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Price not remunerative			
	Low	Moderate	High	Total
Marginal	-	13 (26.53)	1 (14.29)	14 (25.00)
Small	-	20 (40.82)	1 (14.29)	21 (37.50)
Medium	-	9 (18.37)	-	9 (16.07)
Large	-	6 (12.24)	4 (57.14)	10 (17.86)
Very large	-	1 (2.04)	1 (14.29)	2 (3.57)
Total	-	49 (100.00)	7 (100.00)	56 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.8: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Price fluctuating a lot			
	Low	Moderate	High	Total
Marginal	-	-	-	-
Small	-	1 (8.33)	-	1 (6.67)
Medium	-	4 (33.33)	-	4 (26.67)
Large	-	5 (41.67)	3 (100.00)	8 (53.33)
Very large	-	2 (16.67)		2 (13.33)
Total	-	12 (100.00)	3 (100.00)	15 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.9: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Rainfall too high			
	Low	Moderate	High	Total
Marginal	-	2 (100.00)	2 (100.00)	4 (100.00)
Small	-	-	-	-
Medium	-	-	-	-
Large	-	-	-	-
Very large	-	-	-	-
Total	-	2 (100.00)	2 (100.00)	4 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.10: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Rainfall fluctuating a lot			
	Low	Moderate	High	Total
Marginal	-	3 (7.32)	1 (12.50)	4 (8.16)
Small	-	7 (17.07)	-	7 (14.29)
Medium	-	9 (21.95)	4 (50.00)	13 (26.53)
Large	-	18 (43.90)	3 (37.50)	21 (42.86)
Very large	-	4 (9.76)	-	4 (8.16)
Total	-	41 (100.00)	8 (100.00)	49 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.11: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Pest problem/crop diseases			
	Low	Moderate	High	Total
Marginal	1 (100.00)	22 (31.43)	37 (32.17)	60 (32.26)
Small	-	24 (34.29)	42 (36.52)	66 (35.48)
Medium	-	12 (17.14)	21 (18.26)	33 (17.74)
Large	-	7 (10.00)	13 (11.30)	20 (10.75)
Very large	-	5 (7.14)	2 (1.74)	7 (3.76)
Total	1 (100.00)	70 (100.00)	115 (100.00)	186 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.12: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Absence of storage facility			
	Low	Moderate	High	Total
Marginal	-	-	-	-
Small	-	-	-	-
Medium	-	-	-	-
Large	-	3 (75.00)	1 (100.00)	4 (80.00)
Very large	-	1 (25.00)		1 (20.00)
Total	-	4 (100.00)	1 (100.00)	5 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.13: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Absence of market facilities			
	Low	Moderate	High	Total
Marginal	-	-	-	-
Small	-	-	-	-
Medium	-	-	-	-
Large	-	2 (100.00)	-	2 (100.00)
Very large	-	-	-	-
Total	-	2 (100.00)	-	2 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.14: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Poor market facilities			
	Low	Moderate	High	Total
Marginal	-	-	-	-
Small	-	-	-	-
Medium	-	-	-	-
Large	-	2 (100.00)	1 (100.00)	3 (100.00)
Very large	-	-	-	-
Total	-	2 (100.00)	1 (100.00)	3 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.15: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Poor road connectivity			
	Low	Moderate	High	Total
Marginal	-	-	-	-
Small	1 (100.00)	-	-	1 (100.00)
Medium	-	-	-	-
Large	-	-	-	-
Very large	-	-	-	-
Total	1 (100.00)	-	-	1 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.16: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Govt.support not available			
	Low	Moderate	High	Total
Marginal	-	7 (23.33)	1 (16.67)	8 (21.62)
Small	-	14 (46.67)	-	14 (37.84)
Medium	1 (100.00)	6 (20.00)	1 (16.67)	8 (21.62)
Large	-	2 (6.67)	4 (66.67)	6 (16.22)
Very large	-	1 (3.33)	-	1 (2.70)
Total	1 (100.00)	30 (100.00)	6 (100.00)	37 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.17: Severity of the reported problem faced in farming in Punjab, 2018-19 (Number)

Landholding categories	Uncertain govt. support			
	Low	Moderate	High	Total
Marginal	-	-	1 (50.00)	1 (33.33)
Small	-	-	-	-
Medium	-	1 (100.00)	-	1 (33.33)
Large	-	-	1 (50.00)	1 (33.34)
Very large	-	-	-	-
Total	-	1 (100.00)	2 (100.00)	3 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.18: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Limited sources of credit			
	Low	Moderate	High	Total
Marginal	1 (100.00)	12 (57.14)	10 (83.33)	23 (67.65)
Small	-	5 (23.81)	-	5 (14.71)
Medium	-	2 (9.52)	-	2 (5.88)
Large	-	2 (9.52)	2 (16.67)	4 (11.76)
Very large	-	-	-	-
Total	1 (100.00)	21 (100.00)	12 (100.00)	34 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.19: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Bank credit not available			
	Low	Moderate	High	Total
Marginal	-	1 (100.00)	1 (100.00)	2 (100.00)
Small	-	-	-	-
Medium	-	-	-	-
Large	-	-	-	-
Very large	-	-	-	-
Total	-	1 (100.00)	1 (100.00)	2 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.20: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	High interest rate of money lenders			
	Low	Moderate	High	Total
Marginal	-	13 (59.09)	3 (13.64)	16 (36.36)
Small	-	4 (18.18)	6 (27.27)	10 (22.73)
Medium	-	1 (4.55)	8 (36.36)	9 (20.45)
Large	-	4 (18.18)	4 (18.18)	8 (18.18)
Very large	-	-	1 (4.55)	1 (2.27)
Total	-	22 (100.00)	22 (100.00)	44 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.21: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Rodent problem			
	Low	Moderate	High	Total
Marginal	-	-	-	-
Small	-	-	1 (100.00)	1 (50.00)
Medium	-	1 (100.00)		1 (50.00)
Large	-	-	-	-
Very large	-	-	-	-
Total	-	1 (100.00)	1 (100.00)	2 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.22: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Other animal problem			
	Low	Moderate	High	Total
Marginal	5 (25.00)	3 (30.00)	51 (38.35)	59 (36.20)
Small	11 (55.00)	3 (30.00)	52 (39.10)	66 (40.49)
Medium	2 (10.00)	2 (20.00)	24 (18.05)	28 (17.18)
Large	2 (10.00)	1 (10.00)	4 (3.01)	7 (4.29)
Very large	-	1 (10.00)	2 (1.50)	3 (1.84)
Total	20 (100.00)	10 (100.00)	133 (100.00)	163 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.23: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Labour shortage			
	Low	Moderate	High	Total
Marginal	-	-	-	-
Small	1 (100.00)	2 (18.18)	1 (100.00)	4 (30.77)
Medium	-	3 (27.27)	-	3 (23.08)
Large	-	4 (36.36)	-	4 (30.77)
Very large	-	2 (18.18)	-	2 (15.38)
Total	1 (100.00)	11 (100.00)	1 (100.00)	13 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.24: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	High rental value of lease-in land			
	Low	Moderate	High	Total
Marginal	-	-	2 (8.00)	2 (4.88)
Small	-	1 (6.25)	7 (28.00)	8 (19.51)
Medium	-	5 (31.25)	8 (32.00)	13 (31.71)
Large	-	7 (43.75)	6 (24.00)	13 (31.71)
Very large	-	3 (18.75)	2 (8.00)	5 (12.20)
Total	-	16 (100.00)	25 (100.00)	41 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.25: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	High input cost			
	Low	Moderate	High	Total
Marginal	-	16 (21.05)	2 (14.29)	18 (20.00)
Small	-	26 (34.21)	4 (28.57)	30 (33.00)
Medium	-	23 (30.26)	3 (21.43)	26 (28.89)
Large	-	9 (11.84)	4 (28.57)	13 (14.44)
Very large	-	2 (2.63)	1 (7.14)	3 (3.33)
Total	-	76 (100.00)	14 (100.00)	90 (100.00)

Figures in the parentheses are the percentages to total

Table 8.2.26: Severity of the reported problem faced in farming in Punjab, 2018-19. (Number)

Landholding categories	Problems of paddy straw management			
	Low	Moderate	High	Total
Marginal	5 (62.50)	1 (2.78)	-	6 (7.79)
Small	-	7 (19.44)	2 (6.06)	9 (11.69)
Medium	3	13 (36.11)	4 (12.12)	20 (25.97)
Large	-	15 (41.67)	19 (57.58)	34 (44.16)
Very large	-	-	8 (24.24)	8 (10.39)
Total	8 (100.00)	36 (100.00)	33 (100.00)	77 (100.00)

Figures in the parentheses are the percentages to total

8.3 Types of economic risks faced by the households during the last two years and their ranking

A perusal of Table 8.3.1.1to 8.3.7 reveal the economic risks faced by farmers in the last 2 years. These were ranked by the farmers. Seasonal unemployment was ranked at number one by 164 farmers followed by sharp fluctuations in input prices (111 farmers). The sharp fluctuations in input prices was ranked 2nd by 132 farmers followed by lack of access to inputs (60 farmers), lack of finance/capital (61 farmers), sharp fluctuations in output prices (28 farmers) and seasonal unemployment (68 farmers). The ranking of problems at number three were lack of access to inputs (188 farmers), sharp fluctuations in input prices (39 farmers), seasonal unemployment (27 farmers).

Table 8.3.1: Economic risk faced by the households in the last 2 years in Punjab, 2018-19.

(Number)

Landholding categories	Lack of finance/capital							
	1	*2*	*3*	*4*	*5*	*6*	*7*	*Total*
Marginal	-	25	78	-	-	-	-	103
Small	6	8	47	41	-	-	-	102
Medium	6	26	14	6	-	-	-	52
Large	6	2	4	23	-	-	-	35
Very large	1	-	1	6	-	-	-	8
Total	19	61	144	76	-	-	-	300

Table 8.3.2: Economic risk faced by the households in the last 2 years in Punjab, 2018-19.

(Number)

Landholding categories	Lack of access to inputs							
	1	*2*	*3*	*4*	*5*	*6*	*7*	*Total*
Marginal	-	1	3	99	-	-	-	103
Small	-	1	48	50	3	-	-	102
Medium	-	-	7	33	12	-	-	52
Large	-	-	2	4	11	18	-	35
Very large	-	-	-	2	2	4	-	8
Total	-	2	60	188	28	22	-	300

Table 8.3.3: Economic risk faced by the households in the last 2 years in Punjab, 2018-19.

(Number)

Landholding categories	Sharp fluctuations in input prices							
	1	*2*	*3*	*4*	*5*	*6*	*7*	*Total*
Marginal	3	74	22	3	1	-	-	103
Small	40	49	6	6	1	-	-	102
Medium	39	2	5	6	-	-	-	52
Large	23	6	5	1	-	-	-	35
Very large	6	1	1	-	-	-	-	8
Total	111	132	39	16	2	-	-	300

Table 8.3.4: Economic risk faced by the households in the last 2 years in Punjab, 2018-19.

(Number)

Landholding categories	Sharp fluctuations in output prices							
	1	*2*	*3*	*4*	*5*	*6*	*7*	*Total*
Marginal	-	-	-	1	102	-	-	103
Small		1	1	2	58	40	-	102
Medium	2	2	1	7	38	2	-	52
Large	3	21	4	4	3	-	-	35
Very large	-	4	2	-	2	-	-	8
Total	5	28	8	14	203	42	-	300

Table 8.3.5: Economic risk faced by the households in the last 2 years in Punjab, 2018-19.

(Number)

Landholding categories	Lack of demand/instability to sell agricultural products							
	1	*2*	*3*	*4*	*5*	*6*	*7*	*Total*
Marginal	-	-	-	-	1	102	-	103
Small	-	-	-	-	40	62	-	102
Medium	-	2	-	-	2	48	-	52
Large	2	4	18	2	1	8	-	35
Very large	1	-	4	-	-	3	-	8
Total	3	6	22	2	44	223	-	300

Table 8.3.6: Economic risk faced by the households in the last 2 years in Punjab, 2018-19.

(Number)

Landholding categories	Lack of demand/instability to sell non-agricultural products							
	1	*2*	*3*	*4*	*5*	*6*	*7*	*Total*
Marginal	-	-	-	-	-	-	103	103
Small	-	-	-	-	-	-	102	102
Medium	-	-	-	-	-	-	52	52
Large	-	-	-	-	-	-	35	35
Very large	-	-	-	-	-	-	8	8
Total	-	-	-	-	-	-	300	300

Table 8.3.7: Economic risk faced by the households in the last 2 years in Punjab, 2018-19.

(Number)

Landholding categories	Seasonal unemployment							
	1	*2*	*3*	*4*	*5*	*6*	*7*	*Total*
Marginal	100	3	-	-	-	-	-	103
Small	57	42	-	3	-	-	-	102
Medium	5	20	25			2	-	52
Large	1	2	2	1	20	9	-	35
Very large	1	2	-		4	1	-	8
Total	164	69	27	4	24	12	-	300

8.4 Coping strategies undertaken for the economic risks faced.

The coping strategies under taken by the households in the wake of economic risks faced is presented in Table 8.4.1 . On the whole, 30 farmers (29.41%) deferred their social and family functions, while 43 farmers(42.16%) reduced their household consumption. Other strategies under taken by the farmers to bear risks were borrowed money from input dealers/commission agents (6.86%) , borrowed money from bank ((5.88%), started petty business/shop (4.90%), stored crops for better price(8.82%) . Among the different categories of farmers, majority of the marginal(48.39%), small(50%), medium(40%), large farmers(29.17%) reduced their household consumption in the wake of economic risks faced while very large farmers(40%) stored their crops for better prices along with reduced consumption expenditure..

On marginal farms, 48.39 percent of the farmers opted to reduce household consumption expended while others deferred social and family functions (35.48%) borrowed money from input dealers (3.23%), borrowed money from friends and relatives (3.23%) and started petty business/ shops (9.68%) etc. Majority of the small farmers (50%) reduced their household consumption expenditure while others deferred social and family functions (22.73%), borrowed money from bank (9.09%), borrowed money from input dealers/ commission agents (9.09%) and started petty business/ shops (4.55%). The coping strategies opted by 15 percent, 40 percent, 30 percent, 5 percent each of the medium farmers were stored crops for better price, reduced household consumption , deferred social and family functions, borrowed money from banks and borrowed money from input dealers and starting of petty business and shops. Majority of the large farmers (29.17% each) reduced household consumption and differed social and family functions to cope with economic risks. Storing crops for better price and reducing household consumption was opted by 40 percent each of the very large farmers to cope with economic risks.

Table 8.4.1: Coping strategies undertaken by the households with respect to the economic risks faced in Punjab, 2018-19. (Number)

Landholding categories	Stored crops for better price	Reduced household consumption exp.	Deferred social & family functions	Borrowed money from bank	Borrowed money from input dealer/ commission agents	Borrowed from friends/ relatives	Started petty business/ shops	Total
Marginal	-	15	11	-	1	1	3	31
%	-	48.39	35.48	-	3.23	3.23	9.68	100.00
Small	1	11	5	2	2	-	1	22
%	4.55	50.00	22.73	9.09	9.09	-	4.55	100.00
Medium	3	8	6	1	1	-	1	20
%	15.00	40.00	30.00	5.00	5.00	-	5.00	100.00
Large	3	7	7	3	3	1	-	24
%	12.50	29.17	29.17	12.50	12.50	4.17	-	100.00
Very large	2	2	1	-	-	-	-	5
%	40.00	40.00	20.00	-	-	-	-	100.00
Total	9	43	30	6	7	2	5	102
%	8.82	42.16	29.41	5.88	6.86	1.96	4.90	100.00

8.5 Social networks – whether households have membership in various organizations, if a member then position held in the organization and benefits of being a member; if not a member then reasons for it.

Out of 300 respondent farmers, 292 farmers (97%) were members of agricultural cooperative societies while only 29 (9.6%)households were having membership of dairy/milk cooperative societies. No other farmer was found having membership of employee union/business/professional group except one medium farmer. Only one medium farmer was member of self help group(Table8.5.1to 8.5.4).

Table 8.5.1: Membership of households in agricultural cooperative societies in Punjab, 2018-19.

Landholding categories	Number of households	Percent
Marginal	99	33.90
Small	99	33.90
Medium	52	17.81
Large	34	11.64
Very large	8	2.74
Total	292	100.00

Table 8.5.2: Membership of households in dairy/milk cooperative societies in Punjab, 2018-19.

Landholding categories	Number of households	Percent
Marginal	7	24.14
Small	6	20.69
Medium	5	17.24
Large	8	27.59
Very large	3	10.34
Total	29	100.00

Table 8.5.3: Membership of households in employee union/business or professional group in Punjab, 2018-19.

Landholding categories	Number of households	Percent
Marginal	-	-
Small	-	-
Medium	1	100.00
Large	-	0.00
Very large	-	-
Total	1	100.00

Table 8.5.4: Membership of households in self-help group in Punjab, 2018-19.

Landholding categories	Number of households	Percent
Marginal	-	-
Small	-	-
Medium	1	100.00
Large	-	-
Very large	-	-
Total	1	100.00

Positions held in various societies:

Farmers who were the members of various societies served in different positions. About 180 farmers who were the members of agricultural cooperative societies were ordinary members while 110 farmers were active members and 2 were office bearers. Out of 29 households who were members of dairy/milk cooperative societies, 2 farmers were ordinary member and 8 were active members. Only one member was having membership of employee union/business/professional groups and he was active member. Further, only one farmer was having membership of self help group (Table 8.5.5 to 8.5.8).

Table 8.5.5: Post held as a member of Agricultural cooperative societies in Punjab,2018-19.

(Number)

Landholding categories	Ordinary member	Active member	Office bearer	Total
Marginal	77	21	1	99
Small	54	45	-	99
Medium	24	27	1	52
Large	20	14	-	34
Very large	5	3	-	8
Total	180	110	2	292

Table 8.5.6: Post held as a member of dairy/milk cooperative societies in Punjab, 2018-19.

(Number)

Landholding categories	Ordinary member	Active member	Office bearer	Total
Marginal	2	5	-	7
Small	4	2	-	6
Medium	5	-	-	5
Large	7	1	-	8
Very large	3	-	-	3
Total	21	8	-	29

Table 8.5.7: Post held as a member of union/business or professional group in Punjab,2018-19

(Number)

Landholding categories	Ordinary member	Active member	Office bearer	Total
Marginal	-	-	-	-
Small	-	-	-	-
Medium	-	1	-	1
Large	-	-	-	-
Very large	-	-	-	-
Total	-	1	-	1

Table 8.5.8: Post held as a member of self-help group in Punjab, 2018-19. (Number)

Landholding categories	Ordinary member	Active member	Office bearer	Total
Marginal	-	-	-	-
Small	-	-	-	-
Medium	-	-	1	1
Large	-	-	-	-
Very large	-	-	-	-
Total	-	-	1	1

Benefits of having membership:

The benefits of being member of various societies was revealed by the farmers and are presented in Tables 8.5.9 to 8.5.12

The benefits were revealed by 102 farmers (34.93%) for being the member of cooperative societies as they got information about credit sources, 85 farmers (29.11%) came to know about government schemes, 93 farmers (31.85 %) got information about both these sources, 26 farmers of dairy cooperative societies got information about agricultural practices and livestock management besides others came to know about input usage also.

For being the members of agricultural cooperative societies 102 farmers (34.93%) came to know about the credit sources. Across land holdings categories the information about the credit sources was known to marginal (27.27%), small (35.35%), medium (38.46%), large (50%) and very large farmers (37.50%) for being the members of agricultural cooperative societies. The information about government schemes was known to 85 farmers (29.11%) with having the membership of agricultural cooperative societies and the same was revealed by 20.20 percent, 36.36 percent, 34.62 percent, 26.47 percent and 25 percent of marginal, small, medium, large and very large farmers. It was reported by 93 farmers (31.85%) that they came to know about credit sources as well as government schemes for being the members of such societies. Similar views were revealed by 41.41 percent, 27.27 percent, 26.92 percent, 23.53 percent and 37.50 percent of the farmers of the respective categories. Besides there were other benefits which the farmers revealed as they came to know about (i) input usage (1.03 %) (ii) price and markets (2.05%) (iii) both agricultural practices, livestock management and credit sources (0.68%) .

The benefits received for being the members of dairy/ milk cooperative societies are presented in Table 8.5.10. Majority of the farmers (89.66%) came to know about the agricultural practices and livestock management and the same was revealed by 100 percent each of the small, medium, large and very large farmer and 57.14 percent of the marginal

farmers . The information about input usage was availed by 42.86 percent of marginal farmers.

Only one farmer was the member of union/ business or professional group and he was benefitted being the member of such group for some other reason other than agricultural practices and livestock management, input usage, credit sources and price and markets (Table 8.5.11).

In case of self help group also only one farmer was the member and he was benefitted being the member of such group for some other reason other than agricultural practices and livestock management, input usage, credit sources and price and markets (Table 8.5.12).

Table 8.5.9: Benefits of being a member of agricultural cooperative societies in Punjab, 2018-19. **(Number)**

Landholding categories	Sharing information on								
	Agricultural practices & livestock management	Input usuage	Credit sources	Price & markets	Govt. schemes	Both 1 and 3 -	Both 1, 3 and 5 -	3 and 5 -	Total
	1	*2*	*3*	*4*	*5*				
Marginal	-	3	27	6	20	1	1	41	99
%	-	3.03	27.27	6.06	20.20	1.01	1.01	41.41	100.00
Small	-	-	35	-	36	1	-	27	99
%	-	-	35.35	-	36.36	1.01	-	27.27	100.00
Medium	-	-	20	-	18	-	-	14	52
%	-	-	38.46	-	34.62	-	-	26.92	100.00
Large	-	-	17	-	9	-	-	8	34
%	-	-	50.00	-	26.47	-	-	23.53	100.00
Very large	-	-	3	-	2	-	-	3	8
%	-	-	37.50	-	25.00	-	-	37.50	100.00
Total	-	3	102	6	85	2	1	93	292
%	-	1.03	34.93	2.05	29.11	0.68	0.34	31.85	100.00

Table 8.5.10: Benefits of being a member of dairy/milk cooperative societies in Punjab, 2018-19. **(Number)**

Landholding Categories	Sharing information on					
	Agricultural practices & livestock management	Input usuage	Credit sources	Price & markets	Govt. schemes	Total
	1	2	3	4	5	
Marginal	4	3	-	-	-	7
%	57.14	42.86	-	-	-	100.00
Small	6	-	-	-	-	6
%	100.00	-	-	-	-	100.00
Medium	5	-	-	-	-	5
%	100.00	-	-	-	-	100.00
Large	8	-	-	-	-	8
%	100.00	-	-	-	-	100.00
Very large	3	-	-	-	-	3
%	100.00	-	-	-	-	100.00
Total	26	3	-	-	-	29
%	89.66	10.34	-	-	-	100.00

Table 8.5.11: Benefits of being a member of union/business or professional group in Punjab, 2018-19. **(Number)**

Landholding categories	Sharing information on						
	Agricultural practices & livestock management	Input usuage	Credit sources	Price & markets	Govt. schemes	Other	Total
	1	*2*	*3*	*4*	*5*	*6*	
Marginal	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-
Medium	-	-	-	-	-	1 (100.00)	1 (100.00)
Large	-	-	-	-	-	-	-
Very large	-	-	-	-	-	-	-
Total	-	-	-	-	-	1 (100.00)	1 (100.00)

Figures in the parentheses are the percentages to total

Table 8.5.12: Benefits of being a member of self-help group in Punjab, 2018-19.

(Number)

Landholding categories	Sharing information on						
	Agricultural practices & livestock management	Input usuage	Credit sources	Price & markets	Govt. schemes	Other	Total
	1	*2*	*3*	*4*	*5*	*6*	
Marginal	-	-	-	-	-	-	-
Small	-	-	-	-	-	-	-
Medium	-	-	-	-	-	1 (100.00)	1 (100.00)
Large	-	-	-	-	-	-	-
Very large	-	-	-	-	-	-	-
Total	-	-	-	-	-	1 (100.00)	1 (100.00)

Figures in the parentheses are the percentages to total

Reasons for not having membership:

The farmers who were not having the membership of any societies revealed the reasons which are presented in Tables 8.5.13 to 8.5.16. The reasons for not having membership of agricultural cooperative society revealed by farmers was that they did not get any opportunity while one farmer considered it as time consuming. There were 8 farmers who were not the members of agricultural cooperative societies (Table 8.5.13). Among these 87.50 percent of farmers revealed that they wanted to become member but they did not avail any opportunity and the same was reported by 100 percent each of marginal and small farmers. It was time consuming for large farmers (100%) for having the membership of such society.

Farmers were not members of dairy/milk cooperative society due to the reason that these were not beneficial to 166 farmers (61.25%), time consuming for26 farmers (9.59%) while other 26 farmers (9.59%) revealed that they did not get opportunity to become its member and 53 farmers (19.56%) didnôt become the members due to some other reasons (Table 8.5.14). There were 271 farmers (96 marginal, 96 small, 47 medium, 27 large, 5 very large) who were not the members of dairy/ milk cooperative societies. Out of these 26 farmers (9.59) stated that they wanted to become its member but did not get opportunity and the same was reported by 9.38 percent, 10.42 percent, 6.38 percent, 14.81 percent of marginal, small, medium and large framers. To majority of the farmers (61.25%) it was not beneficial to have

membership of these societies. These were also the views of marginal (59.38%), small (65.63%), medium (53.19%), large (62.96%) and very large (80%) farmers. To become member of such societies was time consuming for 11.46 percent, 7.39 percent, 12.77 percent and 7.41 percent of marginal, small, medium and large farmers respectively, thus total of 26 farmers (9.59%). The membership of such societies was not sought by 19.56 percent of farmers due to other reasons and the same was revealed by marginal (19.79%), small (16.67%), medium (27.66%), large (14.81%) and very large farmers (20%) respectively (Table 8.5.14).

The membership of employee union/business/professional group was not availed by 299 farmers. Majority of the farmers (92.31%) did not become member of these societies. due to other reasons, while for 3.01 percent of the farmers, there was no benefit to them and it was considered time consuming by 4.68 percent of the farmers (Table 8.5.15). Further, it was reported by 99.67 percent of the farmers that they did not become the member of self help group due to some other reasons(Table 8.5.16).

Table 8.5.13: Reasons for not being a member of agricultural cooperative societies in Punjab, 2018-19. **(Number)**

Landholding categories	Not available	Available but no opportunity	No benefit	Time consuming	Total
Marginal	-	4 (100.00)	-	-	4 (100.00)
Small	-	3 (100.00)	-	-	3 (100.00)
Medium	-	-	-	-	
Large	-	-	-	1 (100.00)	1 (100.00)
Very large	-	-	-	-	-
Total	-	7 (87.50)	-	1 (12.50)	8 (100.00)

Figures in the parentheses are the percentages to total

Table 8.5.14: Reasons for not being a member of dairy/milk cooperative societies in Punjab, 2018-19. **(Number)**

Landholding categories	Not available	Available but no opportunity	No benefit	Time consuming	Others	Total
Marginal	-	9	57	11	19	96
%	-	9.38	59.38	11.46	19.79	100.00
Small	-	10	63	7	16	96
%	-	10.42	65.63	7.29	16.67	100.00
Medium	-	3	25	6	13	47
%	-	6.38	53.19	12.77	27.66	100.00
Large	-	4	17	2	4	27
%	-	14.81	62.96	7.41	14.81	100.00
Very large	-	-	4	-	1	5
%	-	-	80.00	-	20.00	100.00
Total	-	26	166	26	53	271
%	-	9.59	61.25	9.59	19.56	100.00

Table 8.5.15: Reasons for not being a member of union/business or professional group in Punjab, 2018-19. **(Number)**

Landholding categories	Not available	Available but no opportunity	No benefit	Time consuming	Other	Total
Marginal	-	-	6	7	90	103
%	-	-	5.83	6.80	87.38	100.00
Small	-	-	2	5	95	102
%	-	-	1.96	4.90	93.14	100.00
Medium	-	-	-	1	50	51
%	-	-	-	1.96	98.04	100.00
Large	-	-	1	1	33	35
%	-	-	2.86	2.86	94.29	100.00
Very large	-	-	-	-	8	8
%	-	-	-	-	100.00	100.00
Total	-	-	9	14	276	299
%	-	-	3.01	4.68	92.31	100.00

Table 8.5.16: Reasons for not being a member of self-help group in Punjab, 2018-19.

(Number)

Landholding categories	Not available	Available but no opportunity	No benefit	Time consuming	Other	Total
Marginal	-	-	-	-	103	103
%	-	-	-	-	100.00	100.00
Small	-	-	-	-	102	102
%	-	-	-	-	100.00	100.00
Medium	-	-	1	-	50	51
%	-	-	1.96	-	98.04	100.00
Large	-	-	-	-	35	35
%	-	-	-	-	100.00	100.00
Very large	-	-	-	-	8	8
%	-	-	-	-	100.00	100.00
Total	-	-	1	-	298	299
%	-	-	0.33	-	99.67	100.00

CHAPTER 9

SUMMARY AND CONCLUSIONS

Punjab is the most frequently quoted success story in the annals of the history of agricultural development in India. The states' contribution in making the country self reliant in food is well documented and appreciated. Advent of new farm technology which includes use of modern inputs such as high yielding and short duration varieties of crops, chemical fertilizers, insecticides, pesticides and increased use of irrigation water and farm mechanization resulted in considerable increase in agricultural production and income of the farmers. But over the years, agriculture has become more input intensive, yield levels almost has reached the initial potentials and further productivity growth has slowed. The state is now faced with serious crisis in agricultural economy and there is severe distress in the rural areas and there are implications of market imperfections on farm profitability in Punjab. To examine the extent of erosion into farm profitability due to market imperfections in Punjab**,** primary data were collected from 300 farm households representing all the farm categories i.e. marginal, small, medium, large and very large, from three districts namely, Moga, Bathinda and Hoshiarpur , representing different agro-climatic zones while the reference year of the study was 2018-19. The results brought out that from the total sample of 300 households, the number of marginal, small, medium , large and very large farmers were 103 (34.33%), 102 (34%) , 52 (17.33%), 35 (11.67%) and 8 (2.67%) respectively. Overall, 89 per cent of the total farmers belonged to general category followed by OBC(9 %) and SC category(2%). None of the respondent farmer belonged to scheduled tribe. Cultivation was found to be the principal occupation of 94 per cent of the farmers. The major source of farmersô income was from cultivation followed by income from animal husbandry. Overall, 94.95 per cent of the income was earned from cultivation while from animal husbandry the net income earned was just 5.05 per cent. On an average, the size of landholding was 2.57 hectares which varied between 0.77 hectares to 14.07 hectares across land holding categories. The leasing-out of land was found prevalent only among the marginal farmers. All the farmers had irrigated land. All the sampled farmers had possession of livestock, with the small farmers having more number of livestock while the least number of livestock was found on very large farms. All the households possessed only milch animals.

The cropping pattern depicted that paddy and wheat crops were the major kharif and rabi crops grown by the sample farmers as these were found to be 39.51per cent and 42.68per cent of the gross cropped area, respectively. Besides, paddy and wheat, other crops grown by

the sample farmers were; maize, cotton, sugarcane, kharif fodder, potato, mungbean, spring maize and rabi fodder. It was observed that marginal, small and medium category farmers cultivated more area under wheat and paddy crops followed by maize and cotton crops. Large and very large farmers besides growing wheat and paddy preferred to cultivate potato and mungbean crop. The average yield per hectare of paddy and wheat was 7220 kgs and 4665kgs, respectively while the yield of sugarcane was75618 kgs. The yield of all these crops was found to be highest on very large farms. Paddy and wheat produced was sold to government agencies at minimum support prices (MSP) while cotton , mungbean and spring maize was sold entirely in open market. Sugarcane was sold to sugar mills and potato was disposed off to the regional traders by the sampled farmers. The prices obtained were considered reasonable by 74, 45, 12.5, 16 and 33 per cent of paddy, maize, cotton, sugarcane, spring maize growing farmers. None of the potato and mungbean growing farmers stated the prices of these crops as reasonable. The rest of the farmers considered prices for their produce as unreasonable. Overall, the major reasons revealed by the sampled farmers for unreasonable prices of paddy and wheat were high input costs (52%) and high lease rent (34%). It was further reported that it became difficult for them to cover the cost of production due to high input costs and high lease rent. For maize, cotton, potato and mungbean and spring maize, farmers revealed the prices unreasonable due to non-procurement of the produce by government agencies and farmers were unable to get remunerative price and had to sell their produce at the much lower price, and in case of cotton they sold at the price lower than Minimum Support Price (MSP*).* The per farm value of the crops produced on marginal ,small, medium ,large and very large farms were estimated at Rs 1.27 lakh , Rs.2.95 lakh, Rs.6.66 lakh, Rs.15.96 lakh and Rs.33.15 lakh respectively. Overall, the value of crops was to the tune of Rs 5.34 lakh. The per farm expenses incurred on inputs for producing various crops on respective farms were Rs. 44977 Rs. 1.06 lakh. Rs. 2.56 lakh. Rs 7.38 lakh and Rs. 17.87 lakh respectively with overall expenses of Rs. 2.29 lakh. The returns over variable costs from crop production were estimated at Rs 82919, Rs. 1.88 lakh ,Rs. 4.09 lakh, Rs. 8.58 lakh and Rs.15.27 lakh with overall average of Rs. 3.04 lakh. Related to animal husbandry, all the farmers obtained returns from the sale of milk only. The returns over variable cost from animal husbandry were estimated at Rs. 7856, Rs 23576, Rs 11848, Rs. 26520, Rs. 12296 respectively on marginal, small, medium , large and very large farms with an overall average of Rs. 16188. The per farm net income (ROVC) from crop production and animal husbandry was worked out to be Rs 90775, Rs.2.12 lakh, Rs. 4.21 lakh, Rs. 8.84 lakh, and Rs. 15.39 lakh on the respective farm situations with an overall average of Rs. 3.20 lakh.

The dissatisfaction regarding the higher expenses incurred for various inputs by farmers were costly inputs and it was revealed by them that input prices were still high even after they avail subsidy on inputs. Related to animal husbandry, majority of the sampled farmers sold milk to local milk vendors followed by government agency. No minimum support price for milk, no assured procurement by the government, few buyers of milk, collusion of buyers were the major reasons revealed for unreasonable prices from the sale of milk by the sampled farmers. It was further brought out that all the categories of farmers used farm produced green as well as dry fodder. Only very large farmers used purchased concentrates while farmers of other categories i.e. marginal, small, used both farm produced and purchased concentrates. Related to animal husbandry, out of the total variable expenses (for lactation period) , per farm expenditure on the purchase of concentrates was found highest. It was revealed by majority of the sampled farmers that prices paid for the purchase of concentrates were reasonable. The unreasonable prices revealed by the rest of the farmers were due to costly concentrates.

For farming and livestock activities, more of the casual labour was employed by large farmers.. None of the sampled farmer was found engaged as wage labour in the study area. It was brought out that the highest amount was spent on productive assets by medium farmers and that was for the purchase of livestock. Land was purchased by large and very large farmers. The sampled farmers growing paddy and wheat crops sold their produce at minimum support price (MSP). They all were found aware of MSP but majority of them couldnôt specify the name of the agency to which they sold their produce. Other crops like; maize, mungbean and potato were not procured by the government agencies. All the sampled farmers availed credit and the cooperative societies were the most preferred source of credit of 288 farmers (57.83%). while from government banks and micro finance/community group/NGOôs credit was borrowed by 99 (19.88%). and 111 farmers (22.29%) respectively. It was revealed that rate of interest paid by the farmers of different categories for availing loan from cooperative societies, government banks and micro finance/community group/NGOôs credit, was 7 percent, 8.45 percent ,and 17.92 percent respectively. From the government bank and micro finance/community groups/NGOôs, majority of the borrower farmers availed credit for both current expenditure in farm business and consumption expenditure while from cooperative societies, majority of the farmers i.e. 251 farmers (87.15%) borrowed loan for current expenditure in farm business. All the farmers in different landholdings categories repaid the loan borrowed from cooperative societies and government banks. But the loan borrowed from micro finance/ community group/ NGO's were fully repaid by 48(43.24 %) farmers and not fully repaid by 63 farmers (56.75 %). The reasons

reported for non repayment of loans by the majority of the farmers were due to both income being always less than their expenditure and also their decision to repay the loan when they would get payment after harvesting For technical advice for their crops, the farmers accessed various sources i.e.extension agents, Krishi Vigyan Kendras, agricultural universities/colleges, private commercial agents, progressive farmers, radio/newspapers/internet, veterinary department It was found that majority of the farmers did not require to access these sources which might be due to the reason that in Punjab paddy and wheat crops are being grown as principal crops since the green revolution and farmers themselves become so experienced in growing these crops. Farmers received assistance under the scheme PM-Kisan. On the whole, 145 sampled farmers out of 300 farmers received assistance under PM-Kisan scheme. PM-AASHA scheme was not applicable in the Punjab State. The crops grown by all the farmers i.e. paddy, wheat, maize, cotton, sugarcane, potato and mungbean were not insured at all. The main reasons for not insuring the crops revealed by the farmers were that they were not interested while some revealed that they did not need insuring the crops .The farmers also reported the lack of resources for premium payment and dissatisfaction with terms and conditions. The income from farming was revealed inadequate as majority of the farmers (62%) reported pest problems/crop diseases followed by destruction of crops by wild (wild boars) animals (54.55%), high input costs (30%), problem of paddy straw management (25.67%), small land size (25.67%), prices not remunerative (18.67%), fluctuating rainfall (16.33%) and high interest rates charged on loan amount (14.17%) respectively. The severity was revealed high in case of small land size, pest problems/crop diseases ,high interest rate of money lender , other animal problems , high rental value of lease in land and problems of paddy straw management . Seasonal unemployment ,sharp fluctuations in input prices , lack of access to inputs ,lack of finance/capital, sharp fluctuations in output prices and seasonal unemployment were the economic risks faced by the farmers. To cope with the economic risks, on the whole, majority of the farmers (42.16 %) reduced their household consumption. Other strategies under taken by the farmers to bear risks were borrowed money from input dealers/commission agents (6.86%), borrowed money from bank (5.88%), started petty business/shop (4.90%), stored crops for better price(8.82%) . For having the information regarding the social networks of the farmers , it was found that out of 300 respondent farmers, 97percent were members of agricultural cooperative societies while only 9.6 percent of the households were having membership of dairy/milk cooperative societies and only one farmer was member of self help

group. The reasons for not having membership of such societies revealed by farmers was that they did not get any opportunity while others considered it as time consuming.

Policy Implications

The present study attempts to study the functioning of important output and input markets and their effect on erosion of farm profitability. Punjab has achieved very high levels of productivity of crops especially paddy and wheat with intensive use of different inputs. At high level of output, the exploitation of natural resources per unit of output is even higher. It has led to the development of macro and micro-nutrient deficiencies. in the state. Therefore, in order to maintain and improve the yield, the farmers have been further increasing the use of inputs. The increase in the prices of inputs i.e. urea, di-ammonium phosphate, weedicides etc. has been very high. The cost of inputs has increased faster than the output prices. Punjab agriculture has become highly capital intensive. Capital investments are required in deepening of tube wells, replacement of centrifugal to submersible pumps. , thus squeezing the profitability of agriculture and cause a big drain on farmersô income. The institutional credit to the farmers has increased overtime but it has not been adequate enough to make a really dent on non-institutional lending to the farmers. The institutional credit to the farmers also comes at a cost other than the rate of interest. It is fraught with many inadequacies such as amount, easiness and timeliness etc. The Punjab farm sector is also saddled with large number of small and marginal farmers operating up to 2 hectares of land. They constitute about 35 percent of the operational holdings. Farmers need sustained support in the form of increased returns from their crop cultivation. Thus, mere increase of minimum support price (MSP) for crops alone would not guarantee better income to the farmers. Along with price incentives, concerted efforts are required to be taken to strengthen the non-price incentives such as the procurement system and market infrastructure for crops other than paddy and wheat which fits well in the diversification plan of the Government of Punjab. Further, educating the farmers about subsidiary occupations, providing loans at low rates of interest, creating sufficient non-farm employment opportunities, assured purchase of agricultural produce and further subsidizing agricultural inputs can help in minimising some of the existing problems of the farmers and thus increase their incomes.

REFERENCES

Bhatia J K, Bishnoi D K, Karwasra J C and Singh V K (2016) Marketing of cucumber cultivated under poly house in Haryana. *Indian Journal of Economics and Development* Vol 12(1a) : I3-16

Boniphace I N, Fengying S, Nie and Chen Fang (2014) The determinants of market participation for smallholder rice farmers in the five major rice producing regions in Tanzania. *Journal of Economics and Sustainable Development* Vol.5 (23): 4-7

Chandresh D, Choudhary V K and Shrey Ravi (2016) Marketing imperfection of cabbage crop in Bemetara district of Chhattisgarh. *Indian Journal of Economics and Development.* Vol 12 (1a) :129-134

Chatterjee S and Kapur D (2016) Understanding price variation in agricultural commodities in India: MSP, Government Procurement and Agriculture Markets. *India Policy Forum:* July 12ï 13, 2016

Grover D K, Kumar S and Vatta K (2003) *Market imperfections and farmers' distress in Punjab*, Agro Economic Research Centre, P.A.U., Ludhiana.

Satyanarayana G, Raghavulu M V and Ram Mohan A. (2003) Causes for farmersô suicides - A study of Anantpur district of Andhra Pradesh. *Indian Journal of Economics and Development.* Vol 12 (1a) :318-325

Jalalzadeh, M, Nouri H S Z & Kalantari K (2014). Investigating the marketing channels of agricultural crops in west Azerbaijan province, Iran. *International Journal of Marketing Studies* Vol. 6(3)

Aditya K S, Subash S P, Praveen K V Nithyashree M L, Bhuvana N and Sharma A (2017) Awareness about Minimum Support Price and its impact on diversification decision of farmers in India. *Asia and the Pacific Policy Studies* Vol 4 (3): 514-526.

Kaur S and Kaur P (2016) Marginal and small farmers' access to modern milk marketing chains in Punjab. *Indian Journal of Economics and Development* Vol 12(1a): 1-6

Khobarkar V, Tale N, Ingole D N and Nage G. V. (2016) ñEconomics of marketing of muskmelon in Akola district. *Indian Journal of Economics and Development* Vol 12(1a): 151-153

Krishna A G, Shrey R, Pandey M and Pandey A (2016) Imperfections in marketing of tamarind: A study of Bastar district of Chhattisgarh. *Indian Journal of Economics and Development* Vol 12(1a): 25-28

Kumar P, Pawar N, Bishnoi D K, Bhatia J and Sumit (2016) Marketing behaviour and constraints in marketing of Poplar (Poplus deltoids) in Haryana. *Indian Journal of Economics and Development* Vol 12(1a): 47-50

Kumar R, Bishnoi D K, Rathi A K and Prakash S (2016) Marketing and price behaviors of onion in Haryana. *Indian Journal of Economics and Development* Vol 12 (1a): 7-11

Das L, Nain M S, Singh R and Burman R R(2014) Constraints in marketing of fruits as perceived by the fruit growers and NERAMAC in Assam. *Journal of Community Mobilization and Sustainable Development* Vol. 9(2): 114-117.

Papang J S, Tripathi A K, Anoop M, Choudhary B B (2016) Economics of turmeric marketing in Jaintia Hills district of Meghalaya**.** *Indian Journal of Economics and Development* Vol 12(1a): 155-160

Prasad A B (2007) Farmersô suicide: Relief and rehabilitation measures for the victimsô families. In Gyanmudra (eds) Farmersô suicides in India: *Dynamics and strategies of prevention, Deep and Deep Publications, New Delhi:* 109-119

Patel S and Singh R (2019) A study on trends in minimum support price and cost of production in wheat and paddy. *The Pharma Innovation Journal 2019;* Vol 8 (1): 443-445

Reddy P Divakar, Vijaykumar N, Ramesh G B, Devi D A R and Dinesh T M (2016) Instability in export of onion in India*. Indian Journal of Economics and Development* Vol 12(1a): 165-168

Reddy S, Vijayachandra S, Kammar S K, and Patil Chidan (2016) An economic analysis on warehouse receipts in Hyderabad-Karnataka region: A protective measure against distress sale of agriculture produce *.Indian Journal of Economics and Development* Vol 12(1a): 265-270

Shrey Ravi, Acharya G K,and Dhurwey C (2016) Farmer's suicides in India and its causes. *Indian Journal of Economics and Development* Vol 12(1a): 237-240

Singh N,and Singh J.M (2016) Milk sale pattern and constraints in dairy farming in sub-mountainous region of Punjab. *Indian Journal of Economics and Development* Vol 12(1a): 29-32

Vinayak B, Bhise and Shivaji S. A (2012) A study of agrarian-distress in a drought-prone region*. International Journal of Business and Management Studies* 1(3):217ï 226

Appendix I: Comments on the draft report

Title of the draft report examined: The Extent of Erosion into Farm Profitability due to Market Imperfections in Punjab

1. **Date of receipt of the Draft report: August 23, 2020**

2. Date of dispatch of the comments: October 17, 2020

Comments on the report by AERC, Ludhiana

1) Page numbering needs to be done.
2) The report needs to provide a critical review of existing literature. This section merely states what the study is about, how the study was conducted and what were its finding. It does not mention what insights are coming out of the literature review that would be relevant for our study.
3) In majority of the cases, interpretation of the tables is restricted to the overall sample. The interpretation of the tables for different categories of landholdings is mostly missing particularly in chapter 3. Furthermore, tables are interpreted with respect to the absolute figures rather than row percentages. Thus the interpretation in the text needs to be changed as per the changes made in the tables. .
4) Some relevant sections and tables which were provided in the chapter scheme and in the table format respectively are missing. For instance, in case of animal husbandry and sales, a complete section mentioned in the chapter scheme on ôusefulness of marketing channels and reasons for dissatisfaction, if anyô is missing. Similarly, tables on ôReasons for dissatisfaction regarding first/second/third major disposal of reported cropsô and interpretation related to it is totally missing in the text.
5) Please note that the results on the types of coping strategies followed by the different categories of farmers to deal with these risks and their social networks (which is in fact the last objective of the study) are missing. The results will be more useful if discussed by keeping in view the objectives of the study.

C.S.C.Sekhar, Ph.D (Economics), LL.B.
Professor and Head, AERU, Institute of Economic Growth
(Former) Honorary Director, Agricultural Economics Research Centre
University of Delhi

Appendix II: Action taken report on the comments of draft report entitled The Extent of Erosion into Farm Profitability due to Market Imperfections in Punjab

The changes have been incorporated in the report as suggested in detailed comments in 'track change' mode and general comments by the learned reviewer and all the comments were taken into consideration while finalizing the report. The point-wise answers to various queries are as follows:

1. Page numbering needs to be done.
    - Page numbering has been done.
2. The report needs to provide a critical review of existing literature. This section merely states what the study is about, how the study was conducted and what were its finding. It does not mention what insights are coming out of the literature review that would be relevant for our study.
    - The critical review of the chapter has been provided.
3. In majority of the cases, interpretation of the tables is restricted to the overall sample. The interpretation of the tables for different categories of landholdings is mostly missing particularly in chapter 3. Furthermore, tables are interpreted with respect to the absolute figures rather than row percentages. Thus the interpretation in the text needs to be changed as per the changes made in the tables.
    - The interpretation of the tables across landholding categories has been done. Tables have been interpreted with absolute figures along with row percentages as desired.
4. Some relevant sections and tables which were provided in the chapter scheme and in the table format respectively are missing. For instance, in case of animal husbandry and sales, a complete section mentioned in the chapter scheme on ôusefulness of marketing channels and reasons for dissatisfaction, if anyô is missing. Similarly, tables on ôReasons for dissatisfaction regarding first/second/third major disposal of reported cropsô and interpretation related to it is totally missing in the text.
    - The sectionñ usefulness of marketing channels and reasons for dissatisfaction, if anyô in chapter animal husbandry and sales has been incorporated. All the sampled farmers sold their produce (for crops and animal husbandry) in the first disposal and interpretation has been completed related to it.
5. Please note that the results on the types of coping strategies followed by the different categories of farmers to deal with these risks and their social networks (which is in

fact the last objective of the study) are missing. The results will be more useful if discussed by keeping in view the objectives of the study.

- The said section has been completed as desired.

  The report has been revised in the light of the comments as desired. Sincere efforts have been put forth by the team members to bring out a good output through this study.

J.M.Singh
Director
(AERC, Ludhiana)