AERC REPORT 197

A Market Imperfections and Farm Profitability in Gujarat

S. S. Kalamkar and K. Kapadia

All India Study Coordinated by
Institute of Economic Growth, University of Delhi, Delhi

Report submitted to the
Directorate of Economics & Statistics
Department of Agriculture, Cooperation & Farmers Welfare
Ministry of Agriculture & Farmers Welfare,
Government of India, New Delhi

Agro-Economic Research Centre
(Ministry of Agriculture & Farmers Welfare, Govt. of India)
Sardar Patel University
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Foreword

Profitability is an important economic motivation to the farmers to take up sustainable agricultural practices. As farming in India is characterized by small and fragmented holdings and high dependence on monsoon rains, operating small holdings is often unviable and farming is not a profitable business or enterprise. The economic viability of the small and marginal farm depends on input costs, institutional framework and different government policies (like price policy, minimum support prices, etc.). In fact, agriculture sector is marked by large-scale disguised unemployment and unending uncertainties at every stage of farm operations resulting in lower income and agrarian distress in many parts of the country. Agrarian distress is not limited to rainfed areas and has also spread to progressive states like Punjab and Kerala where the new generation of farm households is no longer interested in farming. Therefore, agriculture needs to be made more profitable, attractive and enterprising so that the rural to urban migration is reduced and farmers take pride in their profession, which can only happen if bottlenecks are removed. The understanding of agricultural input and output markets is essential for improving agricultural productivity and growth. Development of input and output markets is important because farmers are not motivated to increase yields if they are unable to sell their produce. If this occurs, it defeats the objective of intensifying agricultural production as the majority of the population derives its livelihood from the agriculture.

Recent efforts to improve farmers' income have been focused on raising Minimum Support Prices (MSPs). Historical evidence shows that MSP does not directly translate into higher income for farmers due to a deficient and ineffective implementation framework. Additionally, high MSPs result in market distortions and render Indian exports uncompetitive in world markets. Realising the need to pay special attention to the plight of the farmers, Union Government changed the name of Ministry of Agriculture to Ministry of Agriculture and Farmers' Welfare in 2015. Further, goal was set to double farmers' income by 2022-23 to promote farmers' welfare, reduce agrarian distress and bring parity between income of farmers and those working in non-agricultural professions. One of the important ways to achieve the GOI's goal of doubling the farmers' income by the year 2022 is through better price realization for their harvest. This can be achieved through upgrading traditional agricultural produce market to electronic markets. The current policy focus on doubling farmers' income can also achieve its desired objectives only by improving and vastly redesigning the existing marketing system in the country. Many studies have highlighted the grim situation of income from agriculture and that to unstable due to various reasons, while no study is found focusing on the market imperfection and farm profitability in India. In view of same, the Ministry of Agriculture and Farmers Welfare, Government of India entrusted this study to our Centre. The study is based on both primary and secondary level data. The study was undertaken to fill up this gap in literature and also to use in proper policy formulation towards doubling of farmers' income. The study came out with important and relevant policy implications which would help the policymakers to suggest appropriate strategies to increase income of the farmers.

I am thankful to members of research team for putting in a lot of efforts to complete this excellent piece of work. I also thank the Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Government of India for the unstinted cooperation and support. I hope this report will be useful for policy makers and researchers.

November 25, 2020

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We have benefited immensely from various scholars and officials from different government departments while carrying out this study. At the outset, we would like to thank **Prof. Shirish Kulkarni**, Vice Chancellor of our University and Chairman, AERC Advisory Body as well as Dr. Mahesh Pathak, former Honorary Advisor of our Centre for their constant encouragement and support for undertaking such research activity at the Centre. We are grateful to the coordinator of the study, **Prof. C.S.C.Sekhar**, Head, AERU, Institute of Economic Growth and Former Honorary Director, Agricultural Economics Research Centre, University of Delhi, Delhi, for providing required support, study framework and necessary inputs in completing the study.

We thank **Shri B. M. Modi**, Director of Agriculture, Government of Gujarat, Gandhinagar for providing the secondary level information related to crop production in the state of Gujarat.

The study would not have reached to this stage without the active co-operation of the respondent from selected villages in Gujarat who provided all the required data for the study without any hesitation and expectation. We thank each one of them for their invaluable support.

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Team Leader

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List of Abbreviations

$	-	Dollar
ACZ	-	Agriculture Climatic zones
APMC	-	Agricultural Produce Market Committee
Av.	-	Average
CCS	-	Cost of Cultivation Scheme
COC/CoC	-	Cost of Cultivation
DFI	-	Doubling Farmers' Income
FICCI	-	Federation of Indian Chambers of Commerce & Industry
GCA	-	Gross Cropped Area
GDP	-	Gross Domestic Product
GOI	-	Government of India
hh/HH	-	Household
MSP	-	Minimum Support Price
NABARD	-	National Bank for Agriculture and Rural Development
NCF	-	National Commission on Farmers
NSA	-	Net Sown Area
NSSO	-	National Sample Survey Organization
PPS	-	Probability Proportional to Size
SAS	-	Situation Assessment Survey

Executive Summary

Market Imperfections and Farm Profitability in Gujarat

S. S. Kalamkar and Kalpana Kapadia
Agro-Economic Research Centre, Sardar Patel University, Vallabh Vidyanagar, Gujarat

1. Introduction

Profitability is an important economic motivation to the farmers to take up sustainable agricultural practices. As farming in India is characterized by small and fragmented holdings and high dependence on monsoon rains, operating small holdings is often unviable and farming is not a profitable business or enterprise. The economic viability of the small and marginal farm depends on input costs, institutional framework and different government policies (like price policy, minimum support prices, etc.). In fact, agriculture sector is marked by large-scale disguised unemployment and unending uncertainties at every stage of farm operations resulting in lower income and agrarian distress in many parts of the country. Agrarian distress is not limited to rainfed areas and has also spread to progressive states like Punjab and Kerala where the new generation of farm households is no longer interested in farming. Therefore, agriculture needs to be made more profitable, attractive and enterprising so that the rural to urban migration is reduced and farmers take pride in their profession, which can only happen if bottlenecks are removed. The understanding of agricultural input and output markets is essential for improving agricultural productivity and growth. Development of input and output markets is important because farmers are not motivated to increase yields if they are unable to sell their produce. If this occurs, it defeats the objective of intensifying agricultural production as the majority of the population derives its livelihood from the agriculture.

Recent efforts to improve farmers' income have been focused on raising Minimum Support Prices (MSPs). Historical evidence shows that MSP does not directly translate into higher income for farmers due to a deficient and ineffective implementation framework. Additionally, high MSPs result in market distortions and render Indian exports uncompetitive in world markets. Realising the need to pay special attention to the plight of the farmers, Union Government changed the name of Ministry of Agriculture to Ministry of Agriculture and Farmers' Welfare in 2015. Further, goal was set to double farmers' income by 2022-23 to promote farmers' welfare, reduce agrarian distress and bring parity between income of farmers and those working in non-agricultural professions. One of the important ways to achieve the GOI's goal of doubling the farmers' income by the year 2022 is through better price realisation for their harvest. This can be achieved through upgrading traditional agricultural produce market to electronic markets. The current policy focus on doubling farmers' income can also achieve its desired objectives only by improving and vastly redesigning the existing marketing system in the country. Many studies have highlighted the grim situation of income from agriculture and that to unstable due to various reasons, while no study is found focusing on the market imperfection and farm profitability in India. In view of same, the Ministry of Agriculture and Farmers Welfare, Government of India entrusted this study to our Centre for Gujarat state. Therefore, present study was undertaken to fill up this gap in literature and also to use in proper policy formulation towards doubling of farmers' income.

2. Data and Methodology

The study is based on both, the secondary and primary level data. The study is based on both secondary and primary level statistics. The secondary data were compiled from different publications and related websites of Government of India and Government of Gujarat and related websites. The primary data were collected from the selected households. A multi-stage sampling may be adopted for the selection of sample households. As far as the selection of sample for primary survey is concerned, the villages selected for the block 2017-2020 under the Government of India's scheme for the data collection on cost of cultivation (Comprehensive Scheme for Studying the Cost of Cultivation of Principal Crops in Gujarat) of major crops in Gujarat have been covered. The Stratified Random Sampling technique is used to select the farmer household. The selection procedure suggested by the Ministry of Agriculture, Government of India in Cost of Cultivation Scheme is adopted. The State is divided into 8 homogeneous agro-climatic zones based on crop-pattern, soil type rainfall pattern, etc. From each ACZ, two villages were selected with sufficient geographic spread. From each village, a total sample of 50 farmers were selected randomly. Total 800 sample households were selected and surveyed with a pre-prepared questionnaire. The agro-climatic zonewise selected villages and sample households are presented in Table 1.

Table 1: Agro-Climatic Zone-wise Selected Villages in Gujarat

SL	*Agro-Climatic Zones*		*District*	*Taluka*	*Village*	*Sample number*
1	*I*	*South Gujarat (Heavy Rain Area)*	*Navsari & Tapi*	*Khergam & Songadh*	*Vad & Kikakui*	*100*
2	*II*	*South Gujarat*	*Surat & Bharuch*	*Olpad & Jagadia*	*Khumbhari & Umalla*	*100*
3	*III*	*Middle Gujarat*	*Mahisagar*	*Khanpur & Balasinor*	*Limbadiya & Janod*	*100*
4	*IV*	*North Gujarat*	*Kheda*	*Mahudha & Kapadvanj*	*Heranj & Savali*	*100*
5	*V*	*North West Gujarat*	*Banaskantha*	*Tharad & Lakhani*	*Vasana-Vatam & Moti Pavad*	*100*
6	*VI*	*North Saurashtra*	*Bhavnagar & Botad*	*Mahuva & Botad*	*Otha & Shirvaniya*	*100*
7	*VII*	*South Saurashtra*	*Jamnagar*	*Dhrol & Jamnagar*	*Haripar & Theba*	*100*
8	*VIII*	*Bhal & Coastal Area*	*Ahmedabad*	*Dholka & Daskroi*	*Sahij & Vanch*	*100*

3. Overview of the Study Region and Selected Villages

Gujarat has been consistently clocking impressive agricultural growth rates. This has been possible because the government has focused on improving not only irrigation, quality of seeds and power but also subsidiary sectors like animal husbandry. The growth of the animal husbandry sector has resulted not only in increased milk production but has also provided a boost to the overall agro-economy of the state. The livestock sector in Gujarat has achieved a remarkable success during last six decades due to collective efforts of government organisations, non-government organisation and the milk producers. Gujarat is one of the leading states in terms of milk production. The cooperative sector has been the key driver of the tremendous increase in Gujarat's milk production. It is not a surprise that

Gujarat, the birthplace of India's white revolution, has a thriving milk cooperative sector. The largest dairy co-operative in India, Amul, is based in Anand, Gujarat. 'Amul' pattern is well known and accepted by all states in India besides some of the countries in the world.

Gujarat with geographical area of 19,60,924 square kilometres accounts for 6.19 per cent of total geographical area of India. It has 33 districts, including 7 newly carved out districts and 248 talukas. The state is divided in to five administrative regions. It falls in 13th Agro climatic zone of India which is further divided into eight sub-zones. Gujarat has the longest coastline of 1600 kilometres which is about 20 per cent of country's total coastline. As per 2011 census, the population of the State was 6.04 crore out of which 47.85 per cent population were females (2.89 crore). Half of the state population is distributed across seven districts, viz. Ahmedabad, Surat, Vadodara, Rajkot, Banaskantha, Bhavnagar and Junagadh. Poverty head-count ratio of the State stands at 23.0 per cent. The literacy rate in the State was 78.03 per cent (2011). As elsewhere, urbanisation is on the rise, with urban areas accounting for 43 per cent of the population. The State economy is among the top four major state economies and at current prices, it contributes to about 7.6 per cent to the National GDP during the year 2016- 17, despite the State accounts for 4.99 per cent to country's total population. The Per Capita Income (i.e. Per Capita NSDP at market prices) at constant (2011-12) prices has been estimated at Rs. 132773 in 2016-17 and at current prices, it has been estimated at Rs. 156691 in 2016-17.

As mentioned in earlier, total sixteen villages were selected from eight agro-climatic zones of Gujarat and 50 households from each village were selected by using stratified random sampling with PPS method (probability proportional to size). Also noted earlier that the households in the category of large and very large were not available in some selected districts in South Gujarat region (such Bharuch, Navsari and Tapi), while in other district, share of very large farmer household was very meagre or absent, in such cases households from nearby category were interviewed. The villages in North and Saurashtra regions are scattered and thus those selected villages are little bit far from the town as well as from the nearest APMC market than the villages in South and the Central Gujarat region. The highest distance to input and APMC markets was about 21 kilometres. Except one selected village, all other villages have primary dairy cooperative society in their village itself. As it was expected, the groundwater level is very shallow in the South Gujarat- heavy rainfall regions (0-150 feet) followed by the Central Gujarat and Saurashtra region (120-450 feet) and the highest depth of groundwater availability was in North Gujarat region which ranges from 600-1200 feet.

The average geographical area of the selected village is estimated to be around 1000 ha which has range of as low as 377 ha to 1627 ha geographical area coverage. Forest coverage was found only in village of Mahisagar district. Around 77 per cent of total geographical area is estimated to under cultivation having as high as share of more than 88 per cent in Banaskantha and as low as share of almost 55 per cent in Mahisagar district, due to relatively large area categorised as barren and uncultivable land. On an average, around 41 per cent of households in selected villages possess some piece of land, which ranges from as high as 74.4 per cent in Haripur of Jamnagar district and as low as 23.1 per cent in Vad village of Navsari district. Out of total agricultural households, almost 72 per cent of total households were from the group of marginal and small landholders. The share of marginal and small landholders in total was found the highest in Vasana-Vatam

village of Banaskantha district (87.3 per cent) and the same share was found the lowest in Haripur village in Jamnagar district (41.9 per cent). In case of more than 96 per cent of agriculture land holdings was on the name of male family members indicating huge inequality between male and female and thus dominance of male member in the society.

4. Findings from Field Survey data

4.1 Socio-Economic Characteristics of Selected Households

- *The average age of the farmers was estimated to be 48.6 years. The social distribution of households in selected village indicate that on an average, 44.6 per cent households belongs to general category group, followed by 34.7 per cent households from Other Backward Classes group while remaining households belongs to Schedules Caste and Scheduled Tribe category. The dominance of Schedules Caste category households was observed in two villages, viz. Savli village of Kheda district, and Moti Pavad village of Banaskantha district.*
- *The main occupation of households in selected villages was obvious agriculture includes crop cultivation and agriculture labour. Dairy activity was an important subsidiary activity reported in these villages.*
- *The average land holding size was estimated to be 1.90 ha which ranges from as high as 3.54 ha in Haripur village of Jamnagar and as low as 0.99 ha in Vad village of Navsari district.*
- *The buffaloes and cattle dominated the livestock holdings while small ruminant like sheep and goat were also reported in few villages. Tractor was only the common machinery found in all villages while few villagers possess threshers and one village reported to have harvester.*
- *Almost 70 per cent of selected households were from marginal and small landholding size group (possessing land less than 2 ha) followed by almost two fifth of total households were from medium size land holder category (having land between 2-4 ha). Households from large size holders accounts for about 10 per cent of total households of sample. Thus, as like at state and national level, dominance of marginal and small holder group was prevalent in sample households also. The average size of landholdings of selected households was estimated to be 2.10 ha.*
- *Most of the landholding was having irrigation coverage facility except few parcels of large land holders group. Due to high coverage of land area under irrigation, leased-out tendency was found very rare while leased-in activity was profound among very large land holder group which may be due to availability of resources with this group as well as their high risk bearing capacity.*
- *At overall level, around 37 per cent each of total sample households belongs to general and other backward class group which together accounts for almost two third of total selected households. While remaining households were belonging to scheduled caste and scheduled tribe population. Across the land holder groups, other backward class group dominate the small and marginal land holder group, while the majority of households were from general category in case of very large land holder group and non-of the household was from weaker section.*
- *More than 94 per cent of households had the agriculture as a principal occupation. Few of the households from the marginal and small land holders*

group were self-employed while few had salaried employment as principle occupation.

- *The annual household income from various sources across the land holdings category showed that majority of the income was from the crop cultivation followed by the income from the wage labour.*
- *More than two fifth of total households had milch buffaloes, around three fifth of the household possessed milch cows, about 15 per cent households had bullock. Except few marginal households, none of the households had small ruminants like goats and sheep as well as commercial poultry farm.*
- *Around 59 per cent of total households had borewell followed by about 25 per cent households had tube-wells as source of irrigation with about 55 per cent has electric pumps and 12 per cent has diesel pumps. One fourth of total households owned tractor while very few households had thresher. Except few large households, none of other households had combine harvester.*

4.2 Crop and Input Markets

- *The selected households had grown variety of crops during three seasons (kharif, rabi & summer) in the year under study of which major crops grown were paddy, cotton, wheat, groundnut and fodder crops.*
- *The crop-wise average area under different crops across the landholdings categories showed that average land holdings was relatively higher in case of tobacco growing farmers followed by sugarcane, groundnut and cotton growers. Across groups, marginal farmers covered maximum area under groundnut crop followed by tobacco, while all other preferred to cover maximum area under tobacco crop.*
- *Though the productivity is relative factor which depends on the area under crop and related parameters, comparison of same across landholding category indicate the mixed trend of productivity across land holder groups. It was expected as the crops are specific to particular regions and while average at state level, it has high deviation among the yield level across landholding groups.*
- *While comparing the productivity across the land holder groups, one of the reasons for high deviation among these groups was some of the farmers had reported the failure of crops during the agriculture years under study. In total, loss was mostly experienced by the marginal and small group of farmers. It was reported that on first stage of cultivation, total 20 farmers had reported failure, while due to excess of rain or flood like situation has ravaged the crop of 18 farmers. Due to heavy attack of pest and diseases, crop of 8 farmers was destroyed.*
- *Out of the total quantity produced, around 15 per cent was reported unsold or kept at home and 85 per cent produced was sold. Across land holding groups, it was observed that lower the land holding size more the share of total produce retained at home, may be due to less marketable surplus with marginal and small land holders.*
- *The majority of the portion of the quantity produced was sold during the first attempt (96.5 per cent) only that to majority of sale was made to local private trader followed by sale in the nearby mandi. The other agencies which had very low share were input dealers, cooperative government agency and processors. At overall level, out of the total attempts made by the selected households to sale all commodities produced, almost three fifth of total produce was sold to local private trader/place, followed by the one fourth of*

total sale to nearby mandi, 8.5 per cent to processor, 4.6 per cent to cooperative and government agency and remaining 2.6 per cent was soldto input dealers. While across groups, highest share of farmers from marginal and small group sold their produce to local private traders and the lowest in local mandi, indicate distress sale of produce by this vulnerable section of farming community.

- *While in case of oilseed crops, produce was sold to processor. The sugarcane harvest by small farmers was sold to large farmer in same village while some farmers had sold to some private jiggery preparation units in village and remaining sugarcane produce was sold in nearby mandi for retail sale or sugarcane juice units.*
- *At overall level, more than 98 per cent of the selected households have reported unsatisfied with sale of crops due to receipt of lower rate than market, followed by delayed payments, deductions for loans borrowed and faulty weighing and grading system.*
- *Out of the total four major reasons cited for dissatisfactions, one among them was low price received for the produce sold. Out of total crop growers, around 17.4 percent had opined that price was reasonable though it was lower than market price.*
- *While the major reasons for unreasonable prices received for the reported crops were no minimum prices are fixed for that crop, followed by very few buyers, no government purchase and collude among private buyers.*
- *As crop cultivation is transferring from subsistence to commercialised farming, use of off-farm inputs have been increased to a large extent. In most of the cases, off farm inputs were used on large scale which were purchased from the market or in few cases were borrowed from others. While less than 10 percent of households have used farm saved seed.*
- *Same the case of use of the fertilisers, plant protections chemicals, diesel, petrol, and electricity which were purchased from markets. While in case of human and animal labour as well as irrigation, family labours and own farm irrigation was used.*
- *The input dealer and the local private trader were two important sources for purchase of seed for the selected households. In case of other inputs such as fertilisers, insecticides and diesel, same pattern was observed. The labours were mostly family labours supported with animal labour available with farm or with neighbouring farm.*
- *The majority of the selected households had opined that the quality of seed used by them was of satisfactory level and very few households had reported poor quality of seed. Same the case of other inputs used by the selected households.*
- *The total expenditure incurred on the purchase of inputs reported by the selected households was estimated to be higher in case of marginal farmer group and the lowest was in case of very large farm holdings group, which indicate that higher the land size lower the expenses on inputs.*
- *More than 85 percent of the selected households reported that price paid for the seed input was high and thus was not reasonable.*
- *The prices paid for off-farm inputs such as fertilisers, plant protection, diesel were reported to be high and very high while in case of manure, it was reasonable. The labour rate reported was very high. Thus, at overall level, all the inputs were categorised under high to very high category and thus were not reasonable.*

- *The reasons cited for unreasonable prices paid for inputs showed that in case of seed, all reasons such as seed was not subsidised, very few sellers of seed, no govt. sellers for seed, private sellers collude and no price control are reported. Same trend was observed in case of other inputs as well.*

4.3 Animal Products and Input Markets

- *More than 86 per cent of total milk produced was sold in village, of which more than half of total produce was sold to local traders followed by more than one third of total produce was directly sold to households in village in the first disposal itself. The remaining produce was sold during second disposal to the same agencies. The highest share of households reported sale of milk in cooperative and government agency during first disposal was in case of marginal group. Major reasons for the dissatisfactions were lower price than market price and deductions for loan borrowed. The disposal was mainly during first attempt only as mentioned earlier.*
- *The major reasons for the unreasonable prices received from the buyers for sold produced were very few buyers and collude of private buyers. Besides, some other reasons for same were no minimum price and no purchase by any government agency in selected area.*
- *Almost all inputs for cattle and buffalo rearing was purchased from the market while farm saved inputs were used in case of sheet/goat/piggery. In case of green and dry fodder for animals, home grown fodder was the major source followed by the purchased fodder from the nearby farmers or market. The concentrates were heavily purchased from the markets.*
- *The private input dealer followed by cooperative and government agency were major input procurement stations for cattle and buffalo farmers while for small ruminants, inputs were taken form own farm. While in case of animal feed procurement for cattle and buffalo, same was mainly taken from own farm followed by purchase from local traders.*
- *The expenses incurred for the purchase of inputs related to animal husbandry showed that expenditure per households for rearing the livestock was reported the lowest by the medium land holders followed by small and large landholding groups. As such one cannot compare it as per landholding group as possession of livestock is different across the groups.*
- *The selected households were asked to give their opinion about the amount paid by them for purchase of inputs. The responses indicated that the majority of selected households were opined that rate for inputs were reasonable while some had felt it was high to very high range. It was very strange to note that as the land size increases, the uncomfortableness about prices paid was higher. It means that higher the land size, opinion for input rate was of high and very high prices, rather it should have been opposite trend.*
- *Those who were unsatisfied with the prices paid for input were asked to cite reasons for same. The major reasons cited for un-satisfaction were inputs were that inputs were not subsidized, there were no government sales and no control over the price charged by the input seller.*

4.4 Labour Market

- *On an average, five family labours along with two farms servants were employed for farming and livestock operations along with as and when*

required support of 13 casual labours for said work. The average number of hours worked by each of the workers either from any category was around 6-7 hours per day.

- *While average number days employed for farming and livestock operations were out to be around 100 days for family and farm servants while same was around 20 days in case of casual labours.*
- *The average wage rate paid to labour engaged in farming and livestock operation prevailing in selected study were worked out to be Rs 220/- per day for male and Rs. 180 per day for females in case of farm servants, while in case of casual labour, rate was almost same (Rs. 196 per day). While almost two third of selected households opined that rate paid was high and one third households reported same a very high. Thus, altogether more than 88 per cent of households reported high wages rates for labour.*
- *While reasons for wage rate paid to labour for farming and livestock operations not being reasonable cited by the selected households was limited labour supply in study area. The availability of work under MGNREGA as well as control of labour contractor on labour supply also created wage rate hike in the study area.*
- *Most of the engagement of wage labour was up to nine months and the wage rate prevailing for farm and MGNREGA work was reported to be Rs. 266 per day and Rs. 185 per day respectively.*
- *The major constrains for worker were that wage rate was low and work available for a very limited period of time. The other constraints were poor health and only few able bodied members in the family as well as work available were of hard in nature.*

4.5 Credit Market

- *Out of the total selected households, at overall level, more than half of the total households had taken some kind of loan. It was very surprising to note that all the farmers from very large farm holdings group have borrowed money and the lowest ratio was reported in case of marginal landholder. Thus, it is clear that incidence of loan increases with the land holding size.*
- *The major sources of the money borrowing by the land holders were formal agencies such as government bank and cooperative society. On an average, amount borrowed was Rs. 191885. The major two reasons mentioned to borrow loan were to meet capital expenditure in farm business and to meet day to day working expenditure in farm business.*
- *The average rate of interest charged by the formal lending agencies such as banks, cooperative society and SHGs was between 6.2 to 7.1 per cent per year. It was strange to note that input dealers and commission agents were also lending loan at lower rate of interest of 7.1 per cent as compared to very high rate of 24 percent charged by the private money lenders.*
- *The details on total amount repaid to each source and number of households repaying loan showed that two third of total households had repaid the loans.*
- *The reasons for non-repayments were payment to be made after harvesting, due to medical expenses, income is less than the expectation and expecting the loan waiver. During the last year under report, average numbers of loans taken were mostly from formal sector.*

4.6 Asset Endowments, Government Support Programs & Insurance

- *Out of total sample households, 28.4 per cent households have reported purchase of productive assets during the year. The majority of the selected households had purchased the common productive assets such as sickle/chaff-cutter/axe/spade/plough, irrigation pump and livestock. Besides, machinery and equipment as well as land were purchased by the few selected households. On an average, selected household had spent Rs. 166519/- towards procurement of these assets.*
- *Across the groups, lowest share of households who purchased productive assets were reported in case of marginal farmers and the highest in case of very large farmer group. Thus, purchase of assets has positive relationship with size of land holdings.*
- *Some of the households have reported the expenditure on repair and maintenance of the assets which they had. One fourth of total selected households have reported expenditure on repair cost and on an average, Rs. 11128/- were spent towards same. Out of the total reported households (repair), majority of the households had to repair irrigation pumps may be due to power fluctuation or low quality water for which about Rs. 10542/- cost was incurred. Besides, repaid of power tiller, tractor, as well as small machinery like chaff cutter and plough were reported. As expected, lowest number of marginal farmers had reported the lowest expenditure on repair of productive assets, may be due low possession of assets.*
- *Very few households have reported sale of the productive assets (5.1 per cent of total households) towards which average receipt was reported of Rs. 15042/- per household. The highest share of households (reported sale to total households) reported sale of productive assets was estimated in small and medium as well as very large landholders group. Almost 83 per cent of households (out of reported sale hh) had sold livestock followed by 7.3 percent of total households sold their land. Sale of small machinery/equipment, poultry birds as well as small power tillers are also reported. Overall, through receipt of sale of assets estimated to be Rs. 86933 and net expenditure on productive assets was estimated to be Rs. 89147/-.*
- *The major source of information for selected households was newspaper/radio/tv followed by nearby progressive farmer and gram sevek as well as extension officer of the respective area. Higher the land size, more the access to sources of technical advice.*
- *Major reason for the households which had no access of technical advice was that same was not available followed by not aware about the same. The need based contact was major reason in most of the cases.*
- *Those households who have adopted technical advice from the reported source had adopted the advice cent percent as given by the Krishi Vigyan Kendra and private commercial agents, while adoption of advice given by veterinary department was at lower side than other sources.*
- *The major reasons for non-adoption of technical advice received were mostly lack of technical advice follow up and lack of financial resources.*
- *Those households have adopted the advice from the mentioned source, majority of them have reported that advice was useful. The intensity of usefulness was the highest in case of advice received from agricultural university or college while same was the lowest in case of progressive farmers. The impact of adoption of advice from the reported sources was*

reported beneficial (put together moderately beneficial and beneficial) in all cases. None of the advice was reported to be harmful.

- *It has been cited by many reports that awareness among farmers about the minimum support prices declared by the government of India is very poor. Hardly 38 percent of selected farmer households were aware about the MSP. Those who were aware, majority of them were not aware about the procurement agencies for the crops.*
- *Across the land groups, hardly one fourth of the marginal famers were aware about the MSP while more than one half of the large farmers were aware about the same. Thus, larger the size of land holdings higher the awareness about the MSP. Recent efforts to improve farmers' income have been focused on raising Minimum Support Prices (MSPs). Historical evidence shows that MSP does not directly translate into higher income for farmers due to a deficient and ineffective implementation framework.*
- *Very few households have reported the sale of produce to the agencies nominated by the Government. In fact, sale of the produce was the highest in case of the very large farmers group may be due to their approach and more marketable surplus.*
- *The crops sold at MSP to stipulated agency were groundnut, rapeseed and mustard, and cotton and the rate received by them was equal or higher than the MSP. While reasons for not sale of agriculture produce by other sample households was that procurement agency was not available.*
- *The crops for which MSP is being declared by the Government and grown by the selected households were Paddy Jowar, Bajra, Maize, Wheat, Gram, Tur (Arhar), Sugarcane, Groundnut Sesamum (Til), Rapeseed & Mustard and Cotton. Though the MSP was declared, procurement was not either undertaken by the stipulated agencies or was taken at odd time that to at far off places. Due to which large number of farmers had to sold their output lower than the MSP price.*
- *None of the farmers have reported receipt of deficiency payment under BBY or PM AASHA which indicate the poor reaches and coverage under these schemes.*
- *Under the PM KISAN assistance scheme of the Government of India, around 78 per cent of selected farmers have received assistance which took almost 5-6 months to realise same in their account.*
- *Most of the sample households have reported that their crop is insured as they had taken loan from bank, while they were not aware about the fact that how much premium amount is deducted from their loan amount towards insurance of their crop. Around 36 per cent of sample households have mentioned that their crop was insured. As expected, mostly medium to very large land holders are eligible for more loan as per their land availability and thus the coverage under insurance scheme was reported higher in their cases only. In fact, large farmers have more risk averting capacity than marginal and small, while coverage of insurance was lowest for this vulnerable group of farmers. This is serious concern for doubling the farmer's income.*
- *More than two third of the selected households put together were either not aware or not interested about the crop insurance. Same reasons were reported across the crop groups for non-insuring the crops*
- *More than half of the selected households have reported crops loss that to cent percent in case of large farmer group which was very strange. The crop loss was maximum in maize, groundnut, cotton, and sesamum crop.*

- *The major cause of crop loss was inadequate rainfall/drought like situation during the agriculture year under study.*
- *As mentioned earlier, those who had taken loan, automatic crop insurance was given to them and premium is deducted without having information to concern loanee, thus most of the sample households could not share the exact amount of premium deducted. Those who have reported, it is estimated that on an average, Rs. 4630/- premium per households (irrespective of crop grown and covered under same) is paid.*
- *Those who have reported crop loss and had taken insurance have reported that about 86 percent of households have not received the claim amount, while 9.2 per cent received after some time (delayed) and remaining received amount in time. Thus, hardly 14 per cent of claims were settled by the insurance company.*
- *The claim amount received vary from crop to crop and groups while on an average, total claim amount received was estimated to be Rs. 28457/- per household.*
- *When the selected sample households those who have not received claim amount were asked about reasons for not receiving the claim amount, most of them mentioned that they were not aware about the cause.*

4.7 Problems in Farming, Risks faced, Coping Strategies & Social Networks

- *There are various types of problems enter-countered by the farmer households while performing the various operations on field as well as in marketing of produce. The cumulative impact of same has been seen in terms of income generated from crop cultivation keeping in view cost on crop cultivation. An attempt was made during survey to know from the sample households that whether income from farming is adequate or not. About 99 per cent of households have reported that income generated from farming is not adequate. All the households from marginal group have reported the same.*
- *The major five reasons for inadequate income from agriculture were problem of pest /diseases; nuisance of animals; insufficient irrigation; non remunerative prices and labour shortage. The small size of holding was one of the major problems for marginal farmers which makes farming uneconomical.*
- *The high severity is reported in case of inadequate availability of irrigation, lower prices for produce, nuisance of animals; insect pest problems and small size of land holdings were major ones.*
- *The economic risks faced reported by the sample households were lack of finance/capital, lack of access to inputs, sharp fluctuations in input prices, sharp fluctuations in output prices, lack of demand/inability to sell agricultural products, lack of demand /inability to sell non-agri products and seasonal unemployment.*
- *In order to tackle the above mentioned economic risks, sample households had adopted the coping strategies such as borrowed money from friends/relatives, worked as wage labour in the village, borrowed money from bank, borrowed money from moneylenders, reduced household consumption expenditure, deferred social & family functions and started petty business/shops.*

- *Specifically, majority of marginal and small farmer households had to work as wage labour in the village as well as they had borrowed loan from friend/relatives to cope up with economic risk faced.*
- *While performing a day to day agricultural activities, involvement of the head or member of the households in various social activities through adopting its membership or by undertaking its activities bound to have some impact on the decision making and action of the selected households. It also gives exposure to the member of households which can help in reaching to benefits of various government schemes.*
- *Half of the selected households were the member of dairy milk cooperative societies while more than one fourth of total households were member of agricultural cooperative societies. Few of the members of the households were also the member of Gram Panchayat, self-help groups and Mahila Mandal. The reasons for not being a member of the any organisation were mostly due to not available or if available, not got opportunity.*
- *While in most of the cases, member of household was both active and ordinary member and very meagre portion of selected households were office bearers of any organisation. The benefits of being a member of dairy cooperative society and agricultural credit society were visible by having information about agricultural practices and livestock management, input and credit market information as well as information about government schemes.*

5. Conclusions and Policy Implications:

- *The villages in North and Saurashtra regions are scattered and thus those selected villages are little bit far from the town as well as from the nearest APMC market than the villages in South and the Central Gujarat region. Physical market infrastructure is critical in enhancing production and marketed surplus and ensuring higher returns to farmers. Due to the reliance of output market development on physical infrastructure such as markets/yards, collection centres, grading and packaging, rural roads, etc., it should be the top-most priority for investment and development. The development of quality physical infrastructure will reduce transactional costs and improve market efficiency. Improved roads and creation of market hubs that are closer to producers can reduce transportation costs and post-harvest losses, which in turn can lead to higher prices received for outputs, resulting in farmers receiving higher returns from agricultural production.*
- *It was estimated that on an average marketed surplus was 85 per cent of crop produced. The majority of the portion of the quantity produced was sold during the first attempt (96.5 per cent) only that to majority of sale was made to local private trader mostly at lower rate than market price. It indicates that farmers prefer to sale the produce to local trader to meet the need of requirement of cultivation and home requirement. Among different farm size groups, the marketed surplus ratios were lower for small and marginal farmers compared with large farms. It was also found that marketed surplus increased with an increase in farm size and output. Further, marketed surplus was higher than marketable surplus for small and marginal farmers, indicating distress sale. Farmers sold almost entire marketed surplus immediately after the harvest as they need credit for the*

next crop and that leads to serious constraints in handling and storage of produce for procurement agencies, particularly in rice and wheat. Therefore, access to institutional credit and proper storage at farm household level will play an important role in increasing marketed surplus and reduce distress sale.

- *In most of the cases, off farm inputs were used on large scale which were purchased from the market or in few cases are borrowed from others. Input dealer and the local private trader were two important sources for purchase of seed and other inputs for the selected households and prices paid for these inputs were reported to be high and very high. Therefore, there is a need to ensure timely availability of adequate quantity of quality seed and fertiliser and other inputs at reasonable price, particularly by State Seed Certification Agency and State Department of Agriculture.*
- *Out of the total selected households, at overall level, more than half of the total households had taken some kind of loan. It was very surprising to note that all the farmers from very large farm holdings group have borrowed money and the lowest ratio was reported in case of marginal landholder. Thus, it is clear that incidence of loan increases with the land holding size. The major sources of the money borrowing by the land holders were formal agencies such as government bank and cooperative society. The major two reasons mentioned to borrow loan were to meet capital expenditure in farm business and to meet day to day working expenditure in farm business. It is therefore need to narrow the gap in financial inclusion for farmers.*
- *Market information and extension services play a significant role in increasing productivity and market participation of small farmers. The major source of information for selected households was newspaper/radio/tv followed by nearby progressive farmer and gram sevek as well as extension officer of the respective area. Availability of timely and reliable market information has been seen as a major constraint by farmers in marketing of their produce, leading to low price realization. A significant proportion of farmers especially the marginal are dependent on the traders/commission agents for price and market information, hence, there is a need to strengthen dissemination of market intelligence/information so that farmers can make appropriate marketing decision.*
- *Hardly 38 percent of selected farmer households were aware about the MSP. Those who were aware, majority of them were not aware about the procurement agencies for the crops. Thus, there is a need to create awareness about the same.*
- *None of the farmers have reported receipt of deficiency payment under BBY or PM AASHA which indicate the poor reaches and coverage under these schemes.*
- *More than two third of the selected households put together were either not aware or not interested about the crop insurance which once again highlighted the poor reach of crop insurance scheme.*
- *About 99 per cent of households have reported that income generated from farming is not adequate which is in tune with other research findings. The major five reasons for inadequate income from agriculture were problem of pest /diseases; nuisance of animals; insufficient irrigation; non remunerative prices and labour shortage. The high severity is reported in case of inadequate availability of irrigation, lower prices for produce, nuisance of animals; insect pest problems and small size of land holdings were major ones. Since farmers can receive higher prices under competitive markets,*

there is a need to create more competitive market structure by liberalizing agricultural markets so that farmers could choose the agency to whom they wished to sell their produce. Small and marginal farmers are forced to sell their produce just after harvest at lower prices. Sometimes farmers may want to sell it later when prices are higher but feel constrained by, among other things, lack of storage facilities and access to credit. Therefore, a competitive market combined with storage facilities can ensure better prices to small farmers by allowing them to have greater flexibility in the timing and location of their sales.

- *At overall level, more than 98 per cent of the selected households have reported unsatisfied with sale of crops due to lower rate than market, followed by delayed payments, deductions for loans borrowed and faulty weighing and grading. Thus, there is a need for improvement of the working of markets and diffusing information on production technologies. Agricultural market integration has potentially important implications for economic wellbeing across different regions, and also economic efficiency given the large share of food in the Indian consumption basket. The policies seeking to enhance integration should focus on facilitating cross-market trade, through infrastructure and also other means such as reducing restrictions on the movement of goods, and information sharing.*
- *The adoption and application of a systematic farm budgeting template and proper recording helps the grower not only to reduce cost of production in real terms but also helped in increasing revenue through an increase in output and per unit price received by farmer.*

Chapter I
Introduction

1.1 Introduction:

India is still an agricultural economy where more than half of the population is dependent on agriculture. Though the share of agriculture in national income has been decreasing continuously, agriculture continues to be the largest source of employment and livelihood (55.3 per cent of the households in India are dependent on livelihood as per the 68th round of NSSO 2014 data). According to the Census 2011, it provides employment to 54.9 per cent of total workforce in the country, raw material for a large number of industries, and contributes 11.90 per cent in national exports (2018-19) (GOI, 2020). Besides it is a significant, if not the sole, source of livelihood for the small land holders (<2 ha) who comprise about 86.07 per cent of the total number of farm holders during 2015-16 (GOI, 2020). Thus, prosperity of the rural economy is closely linked to growth of agriculture and allied activities (Kalamkar, 2011, 2011a; 2011b). Growth of agriculture has also a significant bearing on food and overall inflation, macro-economic stability, trade and commerce, and industrial activity (Chand and Parappurathu, 2012). Besides, agricultural growth is also found to be more pro-poor (Xavier et al. 2001; Christiensen et al. 2006; Douglas 2009; Cerventes and Dewbre 2010; Dewbre et al. 2011; Sharma and Kumar 2011; Grewal et al. 2012) and therefore it helps to eradicate rural poverty (Ravallion and Datt 1996; Datt and Ravallion 1998; Virmani 2008) as envisaged in the Sustainable Development Goals (Bisen and Kumar, 2018). Therefore, agricultural development is important not only because of its high potential to raise the income and employment to rural masses but also due to its capacity to provide food, raw material and ever expanding market for industrial goods for speedy development of overall economy (Kalamkar 2003, 2011a). While the future of India's food security rests on small and marginal land holders farm, the land-based livelihoods are becoming untenable for the majority of smallholders not only because of their limited scale but also due to a number of constraints. Such constraints include poor access to markets, inputs, technologies, information and services, among others in their endeavour to enhance farm incomes. Therefore, decent agricultural growth is a

pre-requisite for providing food and nutrition security to burgeoning population of more than 1.35 billion in the country as well as to reduce poverty and hunger.

Profitability is an important economic motivation to the farmers to take up sustainable agricultural practices. As farming in India is characterized by small and fragmented holdings and high dependence on monsoon rains, operating small holdings is often unviable and thus farming is not a profitable business or enterprise (NABARD, 2016). The economic viability of the small and marginal farm depends on input costs, institutional framework and different government policies (like price policy, minimum support prices, etc.). In fact, agriculture sector is marked by large-scale disguised unemployment and unending uncertainties at every stage of farm operations resulting in lower income and agrarian distress in many parts of the country. Agrarian distress is not limited to rainfed areas and has also spread to progressive states like Punjab and Kerala where the new generation of farm households is no longer interested in farming. Therefore, understanding of agricultural input and output markets is essential for improving agricultural productivity and growth. Development of input and output markets is also important because farmers are not motivated to increase yields if they are unable to sell their produce. If this occurs, it defeats the objective of intensifying agricultural production as the majority of the population derives its livelihood from the agriculture. Therefore, agriculture needs to be made more profitable, attractive and enterprising so that the rural to urban migration is reduced and farmers take pride in their profession, which can only happen if bottlenecks are removed.

1.2 Imperfections and Output loss[1]

Indian agriculture has witnessed wide variations in growth performance during a span of seven decades after independence. The variability was particularly pronounced due to the subsistence nature of farming in India and the sector's heavy dependence on monsoon and other climatic as well as marketing parameters. In the initial years, after the inception of planned development, it was the green revolution technologies (package of high yielding variety seeds, irrigation and fertilisers) that fired up growth in the sector for nearly three decades. The impact of green revolution tapered off gradually towards the later

[1] Bhattacharyya and Kumbhakar, 1997

years of the last century. Economic reforms initiated in early nineties had a significant impact on agricultural sector, primarily due to the opening up of economy to external competition, liberalization of trade and deregulation of input and other sub-sectors. The process of liberalization relaxed all the control on the market and market-led commercialization was allowed to operate freely. The agricultural markets have never been favorable to the farmers and often the traders and traders-lobby dominated the market enterprises. As a result, even though the wholesale price index shows a small growth rate, the actual prices received by the farmers is far below the indications given by the wholesale prices. The market imperfections which were seem to be only in the product market have also spread in the factor market. All this leads to the farmers and consumers being at the receiving end in the process of marketing. In fact, it is argued that the market forces and infrastructure in current situation has a role in imperfect outcomes for the farmers on the one hand and the consumers on the other (Shroff et al., 2012).

Agriculture, like most other sectors of the Indian economy, is pervaded with numerous distortions having genuine market imperfections as well as policy-induced distortions. Not only is the capital market highly segmented with differential costs of capital for the rich and poor peasants, a large majority of poor farmers are effectively shut out of the market, either due to a lack of acceptable collateral or due to unfavorable terms of credit (Dasgupta, 1993). The immense population pressure in rural areas and the lack of employment opportunities outside agriculture tend to depress the market wage rate, often below the subsistence level. The high demand for cultivable land, coupled with its unequal distribution, has given rise to a share-cropping system that is marked by a high crop share for the landlord and the threat of tenants' eviction. Both of these have adverse effects on crop production.

For the twin purposes of reduction of inequalities and removal of small farmers' production bottlenecks, the government has adopted a number of policies and programmes. While most of the policies are designed for controlling input prices (namely, subsidization of credit and chemical fertilizers), some are also directed toward institutional reform (e.g., usury control, land reforms, and the protection of tenancy rights). Minimum wage laws are designed to improve the earnings of landless labourers and part-time income of small farmers have also

been a part of the policy package. Most of these policies, however, have not been very effective. 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 for the same. A careful examination of the output prices received by farmers in different parts of the country/state in different seasons and the marketing channels used by them is extremely important. Equally important is the support received from the government through support prices, procurement, input provision and subsidies and credit.

1.2.1 Input Market:

An important feature of agriculture in developing countries like India is the prevalence of numerous distortions in input markets. Some of these distortions are introduced by government policies; some others are genuine imperfections, rooted in the inequitable socio-economic structure. Whatever the source of a distortion, it can always be captured in terms of a constraint, direct or indirect, on input use. Input allocations are choice variables, based on unobservable factors that would influence the level of production. Even after differencing, these are still time dependent decisions that would alter farmers' decision on input allocation. In a situation of limited budget, these additional constraints are likely to cause a sub-optimal allocation of resources, resulting in a loss of output. In view of the multiplicity of distortions, the magnitude of such output reductions can be substantial.

While commercial agriculture, as practiced by western societies, has come to rely on off-farm inputs which have increased the cost of cultivation of all crops over the period of time. Besides, a substantial increase in input costs of materials has led to a decline in crop income over the years. This has resulted in non-improvement of the purchasing power of farmers even though there was an increase in farm output[2]. When the 2017 Census of Agriculture was released, almost nobody was surprised to learn that farmers were paying more for inputs than they did in 2012, and it wasn't overly shocking that income is declined. Thus, rising costs of inputs including seed, fertilizer, and labour combined with lower

[2] https://www.thehindubusinessline.com/economy/agri-business/input-prices-have-pulled-down-farm-income/article9828657.ece

on-farm prices for grains, soybeans, and a host of other agricultural products led to the increase in expenses and declining income in the five years period through 2017. By and large, the per hectare real value of output increased for most crops during the period 2004-05 to 2013-14, but the rise in input cost was much higher than the increase in the value of the output. This resulted in lowered net income from the cultivation of most crops," as highlighted in the draft report of the Committee on Doubling Farmers' Income (GOI, 2019- DFI). The report reveals that for most of the years, the WPI of food articles was lower than that of farm input materials, indicating that the farmers received lower market prices for agricultural commodities. Therefore, tackling rising cost of cultivation is the major constraints in doubling the farmer's income.

Considering the heavy dependence on rainfall and the extensive dispersal of cropping areas, timely and convenient availability of inputs is a critical factor for attaining production targets. India's agri-inputs industry comprises three key sub-sectors viz., crop protection (pesticides), crop nutrition (fertilizers), and seeds. According to FICCI, its value stood at US$ 5 billion (2018), with domestic consumption at US$ 2.77 billion. The industry is set to grow at an impressive 8.1 per cent annually and touch US$ 8.1 billion by 2025[3]. Looking at the factor costs in crop production, an estimated 24 per cent is spent on fertilizer and manure; 21 per cent on human labour and nearly 11 per cent on seeds. Similarly, 77 per cent of the expenditure on livestock is incurred on account of animal feed. Hence, a careful analysis of these input markets and reduction of costs in these markets will go a long way in improving viability of crop production and livestock rearing.

1.2.2 Farm Size and Productivity[4]:

There are large number of studies focusing on relationship between farm size and productivity but no consensus has emerged from empirical perspective. Theoretically, when product and factor markets are perfectly competitive and functioning effectively, there will be no significant difference in productivity between farms of different sizes. This is because a competitive market will spontaneously reallocate resources from less efficient to more efficient farms, and

[3] http://news.agropages.com/News/NewsDetail---33696-e.htm#:~:text=India's%20agri%2Dinputs%20industry%20comprises,consumption%20at%20US%24%202.77%20billion.
[4] Sheng, et al., 2019.

eliminate the efficiency gap between farms of different sizes. However, mis-measurement issues and the inability to control for unobserved factors (i.e., soil quality) may contaminate the empirical farm size–productivity relationship, leading to the phenomenon that observed farm productivity declines with size (e.g., Lamb 2003; Barrett, Bellemare, and Hou 2010; Carletto, Savastano, and Zezza 2013; Carletto et al. 2016; Bevis and Barrett 2017; Desiere and Jolliffe 2018). The inverse farm size productivity relationship can also be attributed to input market imperfection and resource misallocation between differently-sized farms (Feder 1985; Eswaran and Kotwal 1986; Deininger et al. 2014; Otsuka, Liu, and Yamauchi 2016)**.**

Some of the researchers noted the inverse farm size productivity relationship in developing Asian countries (Bardhan 1973; Sen 1975; Heltberg 1998; Lipton 2009; Hayami 2001, 2009) supporting notion of 'small is beautiful' which was observed by Chayanov (first published in Russia 1925, see Cha_ianov 1986). Same trend was also found in Sub-Saharan Africa (Barrett, Bellemare, and Hou 2010; Carletto, Savastano, and Zezza 2013; Larson et al. 2014; Desiere and Jolliffe 2018). While some researchers advocate for large farms size in some developing countries, (e.g., Jha and Rhodes 1999; Jha, Chitkara, and Gupta 2000; Foster and Rosenzweig 2010; Otsuka, Liu, and Yamauchi 2013). How then, this farm size–productivity relationship can be explained?

1.2.3 Constraints on Working Capital:

Even though the small size of land holdings has long been identified as factors limiting farm output, an equally important constraint on farmers' working capital has received inadequate attention by the academician as well as by the policy makers. In reality, farmers' budget constraint has been found to be an important factor limiting their use of variable inputs not only in developing country but also in developed countries having well-developed capital markets. Naturally, cultivators in the developing parts of the world particularly in India are expected to face more stringent budgetary restrictions, given their notoriously imperfect and segmented capital markets. A large majority of these farmers are not only unable to finance their variable expenses out of past savings but also have very little access to formal sector loans, due to their lack of acceptable collateral (Dasgupta; Sarap 1987, 1990). Despite the various attempts of the government

(and other international developmental agencies) to provide low-cost production loans to small farmers, only a small percentage of them have actually benefited from such measures. The informal credit market continues to play a dominant role in meeting the credit needs of small farmers and agricultural labourers, for production as well as consumption need. As per NABARD (2018) report, 52.5 per cent of farmer households are reported indebted. In many cases, loans are provided by the local moneylenders at very high rates of interest on the basis of a longstanding patron-client relationship, directly or indirectly. Such credit contracts are not only very much personalized in nature, most of them are linked with other transactions. While the widespread growth of interlinked transactions can be traced to the absence of markets for many inputs (Basu 1983, 1984; Dasgupta, 1993), it is often observed that the presence of such contracts also reduces the effectiveness of many governmental policies and restrictions (Bardhan 1984). Hence, the importance of expenditure (budget) constraint can hardly be denied for farmers. What is the access to credit sources of different farmer categories – small, marginal etc.? What are the bottlenecks in the credit market? These are important issues that need careful examination.

1.3 Status of Farm Income

Although over two-third of population are relying on the agricultural sector for their livelihood, farm income related issues have somehow not received adequate attention in the policy circle till late nineties (see, Deshpande et al., 2004; Sen and Bhatia, 2004). Farmers were treated as mere agents of agricultural production over the years. Their economic well-being did not receive due attention until late nineties, when farmer suicides and indebtedness became a widespread phenomenon. The scholars and policy makers began to take a serious note of this agrarian catastrophe only when the distress resurfaced again in the recent years in the farm heartlands of the country (see, Kalamkar and Narayanamoorthy, 2003; Narayanamoorthy and Kalamkar, 2005; Sainath, 2010). Serious deliberations on the issue of farm income and crop profitability have occupied the centre stage in the recent policy debates on agricultural sector especially from early 2000s. Experts across various quarters keep questioning on whether or not the income of the Indian farmers increased or are the farmers getting any profits from crops cultivation. As a major step towards understanding and studying the nature and

causes of widespread farm suicides and to find out whether reduced income is the major reason for increased indebtedness among farm households, the Union Government appointed the Expert Group on Agricultural Indebtedness under the Chairmanship of Prof. R. Radhakrishna (GOI, 2007). Following this, many researchers also conducted detailed field level studies in this direction and have reported that decline in productivity, supply constraints in institutional credit, market irregularities, etc., are the major reasons for the sudden spurt in farm suicides and indebtedness (see, Deshpande, 2002; Deshpande and Prabhu, 2005; Reddy and Galab, 2006; Vaidyanathan, 2006; Kalamkar and Narayanamoorthy, 2003; Narayanamoorthy and Kalamkar, 2005; Narayanamoorthy 2006: 2007). Comprehensive studies directly focusing on farm income at macro level in India were not available till the publication of Situation Assessment Survey (SAS) data (NSSO, 2005a, b). Because of the absence of data on farm income, most studies have used data from terms of trade computations between agriculture and other sectors to judge the performance of the sector (see, Kahlon and Tyagi, 1980; Gulati and Rao, 1994; Misra and Hazell, 1996; Misra, 1998). While some studies showed positive terms of trade, others found the same against the farm sector.

A large number of scholars have studied the trends in farm income using Cost of Cultivation Scheme (CCS) data over the years. For instance, with the help of CCS data from 1981-82 to 1999-2000, Sen and Bhatia (2004) concluded that the farm business income per farmer was miniscule and inadequate to pay even for the essentials (as cited by Chand et al., 2015; Narayanamoorthy, 2015a, b; Narayanamoorthy and Suresh, 2013). Some studies reported that assured prices appear to help the farmers for efficiently allocating the scarce resources among different crops (see, Schultz, 1964; Acharya, 1997; Deshpande, 1996; Rao, 2001).

Studies have also analysed the effectiveness of minimum support price (MSP) on raising farm income using Cost of Cultivation (CoC) data. Gulati (2012) argued that hike in MSP is necessary to get positive returns and also to propel the agricultural gross domestic product (GDP). But, Bhalla (2012) counter argued that increasing MSP of paddy is 'dirty economics and dirtier politics'. With the focus on the impact of MSP on farm income, Dev and Rao (2010) have studied the profitability of paddy and wheat in detail using CoC data from 1981-82 to 2007-08 and found that the value of output has been more than the costs in both paddy and wheat throughout the period of analysis at the all India level. Similarly, utilising

data from CoC for the period 1975-76 to 2006-07 by covering six important crops, Narayanamoorthy (2013) found an insignificant increase in profitability of foodgrain crops at constant prices mainly because of substantial increase in cost of cultivation (cost C2).

The National Commission on Farmers (NCF) that looked into various aspects of farming in detail has also underlined that the returns from crop cultivation are very poor and inadequate (NCF, 2006). After the publication of SAS data, quite a few studies have been carried out specifically focusing on farm income. For instance, Narayanamoorthy (2006) analysed the level of farm income using SAS data across the major states and found that the annual average income from crop cultivation for the country as a whole was only Rs. 11,628 per household. That is, the per day income of the farmers' household was just about Rs. 32 during 2002-03, which was much lower than the average agricultural wage rate that prevailed at that time in the country. The pitiable condition of the farm households has also been clearly narrated using SAS data by the Expert Group on Agricultural Indebtedness under the Chairmanship of Prof. R. Radhakrishna (GOI, 2007). But, Chand et al., (2015) have questioned the validity of the estimates made based on CoC data. Their contentions are "……..the cost of cultivation data is representative of crops or crop complexes in major growing states, but it does not cover the entire country or the entire agriculture sector. Even the productivity of sample crops reported in Cost of Cultivation (CoC) data show significant difference from state averages. COC data also does not cover horticultural crops and several minor crops that constituted 38 per cent of the total value of the crop sector in 2011-12. Further, the importance of horticultural crops has been rising, and their productivity in India is more than four times that of other crops. Their exclusion makes a significant difference to the level and growth in farm business income. Also, the data on income from the livestock sector is not appropriately captured in the cost of cultivation schedules, which do not intend to do so. Because of these reasons, farm business income derived from the COC data is not an adequate measure of actual farm business income in the country or a state. At the best, these can be used as indicators of income from selected crops" (p.140). Argument made by Chand et al., (2015) was valid as the farmer earns income from various sources, viz. crop cultivation, horticulture, dairy, poultry, fisheries, other allied activities, non-farm activities, and wage

employment which is not covered in CoC survey. However, there is no doubt in the fact that during the last 30 years, the income disparity between farmers and non-farmers has increased. In 1983-84 the average income of a farm household used to be about a third of that of a non-farm household. By the year 2004-05, this statistic had reduced to one-fourth. There was some improvement during the subsequent period, up to 2013-t4, due to impressive agriculture growth.

Recent efforts to improve farmers' income have been focused on raising Minimum Support Prices (MSPs). Historical evidence shows that MSP does not directly translate into higher income for farmers due to a deficient and ineffective implementation framework. Additionally, high MSPs result in market distortions and render Indian exports uncompetitive in world markets. Realising the need to pay special attention to the plight of the farmers, Union Government changed the name of Ministry of Agriculture to Ministry of Agriculture and Farmers' Welfare in 2015. Further, goal was set to double farmers' income by 2022-23 to promote farmers' welfare, reduce agrarian distress and bring parity between income of farmers and those working in non-agricultural professions (Chand, 2017). One of the important ways to achieve the GOI's goal of doubling the farmers' income by the year 2022 is through better price realisation for their harvest. This can be achieved through upgrading traditional agricultural produce market to electronic markets (Chand, 2016; Acharya, et al., 2012; Athawale, 2014; Reddy, 2016). The current policy focus on doubling farmers' income can also achieve its desired objectives only by improving and vastly redesigning the existing marketing system in the country (Sekhar, 2017). GOI has recently passed three bills, viz. the Farmers Produce Trade and Commerce (Promotion and Facilitation) Bill, 2020; Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Bill, 2020 to create framework for contract farming; and The Essential Commodities (Amedndemnt) Bill, 2020 to allow the Central Government to regulate the supply of certain food items only under extraordinary circumstances. It would be important to see over time the impact of these bills on increasing the income of the small and marginal farmers in India.

1.3.1 Income disparity between Agriculture and Non-Agriculture[5]:

Since early 1990s, growth trajectory of agriculture and non-agriculture sectors have witnessed divergent path. While non-agriculture sector experiences acceleration in growth, the agriculture sector continues to move on cyclical growth path around long term average of 2.75 per cent annual rate of growth. As a result, the income accruing to farmers and agricultural workers has lagged significantly behind the income of non-agriculture workers. Some of the farm households also had faced serious distress due to low level of income. Estimates based on NSSO data for the year 2011-12 classify 22.5 per cent cultivator households and 36 per cent agricultural labour households as poor. The major factor for low growth in agriculture and rising disparities between agriculture and non-agriculture sectors is asymmetry in the implementation of reforms in the two sectors. Economic liberalization and deregulations had created very favourable environment for private sector investments in non-agriculture sectors which has led to significant improvement in its performance, pulling up overall growth rate of the economy. Similar reforms in agriculture are either missing or remain patchy in many states of India. Niti Ayog (2015) estimated the status of implementation of reforms in each State and ranked them as per adoption of these reforms. The state of Maharashtra achieved first rank in implementation of various reforms and it offers best environment for doing agribusiness among all the states and UTs. Gujarat ranks second with a score of 71.5 out of 100, closely followed by state of Rajasthan and Madhya Pradesh.

NABARD (2018) survey findings reflect that for all rural households combined, the average monthly income stood at Rs. 8059/- only, with that being higher for agricultural households (Rs. 8931) as compared to non-agricultural ones (Rs. 7269). It indicates alarmingly low income levels that to when per capita income of nation at current prices during 2019-20 was estimated to be Rs. 1,34,226 per year. For the agricultural households, cultivation remained as the most prominent source contributing roughly 35 per cent of the overall monthly income, followed by wage labour (34%) and Govt./ private services (16%). Among the non-agricultural ones, wage labour made up for roughly 54% of the total income followed by Government/ private service which contributed maximum (32%) to the total household income. Thus, wage labour was the most

[5] Chand and Singh, 2016

remunerative source of income for all households contributing a major proportion of roughly half of the total household income, the contribution being higher among non-agricultural households as compared to the agricultural ones.

1.4 Market Imperfections

Marketing of agricultural produce serves as a link between the farm sector on one hand and other sectors on the other hand. Also an efficient marketing system helps in the optimization of resource use, output management, increase in farm incomes, widening of markets, growth of agro-based industry, addition to national income through value addition and employment creation (Acharya, 2006). The spurt in food inflation in the recent years has brought back into focus the critical issues of price volatility in agricultural commodities, agricultural market structures and market efficiency. Regular price fluctuations i.e. 'day-to-day' or 'normal volatility' is both typical and requisite for competitive market functioning. However, the high price variability in the case of primary products affects both producers as well as consumers through a spill-over effect to the other sectors, thereby leading to high inflation in the economy. The prices of the agricultural commodities are normally more volatile than those of the non-farm commodities due to biological nature of production, low price and income elasticity of demand and risk in production due to exogenous shocks from weather. Such high volatility of prices in agricultural commodities can have a disproportional impact on the economies that endure exceptional shocks, and that impacts are nonlinear, typically being asymmetric. This arises because governments and households are well-adapted to normal volatility but neither anticipates nor considers making worthwhile provisions against extreme shocks, and assign low probability to the risk of such events. However, the high inflation of food commodities cannot always be attributed to risks, exogenous shocks and mismatch of demand and supply, it can also be caused by market inefficiencies, weak supply chains and monopolies in the market. The recent price spikes in some instance could not be explained fully by the fundamentals of demand-supply and that underscores the need to delve into the agro-market structures and identify the real causes of price volatility in agricultural commodities. The market structure, degree of competition and efficiency at the various levels of the supply chain has impact on the final prices paid by the end consumers with respect to

agriculture products. Irrational speculative driven bubbles and hoardings by trader lobbies have sometimes been blamed for episodes of high price volatility in India, but with no clear implications in terms of which possible policies could effectively prevent repetition of such crisis.

The current structure of agriculture produce marketing in India consists of a mix of public and private sectors. Barring direct intervention by the government in some commodities, marketing in most others is dominated by the private sector. According to some sources, the quantity of agricultural produce handled by government agencies has not been more than 10 percent of the total value of marketed surplus. Another 10 percent of the marketed surplus is handled by the cooperatives. Thus, rest of the 80 percent marketed surplus comes in the ambit of private trade. As large part of agricultural produce is marketed through private trade, there are a number of functionaries operating in different activities of marketing of various commodities. Apart from wholesalers and retailers, processors enter the market as bulk buyers and sellers. In the case of fruits and vegetables, only 2 percent of total production is processed and rest 98 percent is traded as fresh farm products in the fruit and vegetable markets. Owing to a widening of the production base of the agricultural sector, the market orientation of the farm sector has considerably increased. However, these institutional reforms have not been successful in terms of coverage over the whole of India. Market imperfections continue to operate in most of the areas where an agricultural breakthrough has not taken place (Kalamkar, et al., 2012).

Markets fail to produce efficient outcomes for a variety of reasons that economists have explored over the last twenty-five years. Markets are plagued by problems of information asymmetries, and there are incentives for market participants both to exploit and to increase these information asymmetries. Even when markets are efficient, they may fail to produce socially desirable outcomes. The wealthy and powerful may “exploit” others in an “efficient” way: the gains to one are offset by the losses to others, and in traditional economic parlance, so long as that is the case, markets are efficient. No one can be made better off without making someone else worse off. But such outcomes are socially unjust, and unacceptable. Governments impose regulations to prevent such exploitation and to pursue a number of other social goals.

In the context of the above arguments, it is essential to revisit the questions in a more pragmatic manner, specifically in the context of individual policy interventions. Indian state cannot be called as one among the strong states. Moreover, the kind of infrastructure that have at our disposal surely does not permit the markets to function at the optimal efficiency level. No doubt, market-oriented policies and demand driven planning may have added advantages in the present context of liberalisation, privatisation, globalisation and good governance but the limitations imposed by market operators and operands are not easily surmountable and hence, in this context, it becomes essential to view market as an institution guided both by the price signals and the State policies.

Agricultural marketing in India suffers from inefficiency, a disconnect between the prices received by producers and the prices paid by consumers, fragmented marketing channels, poor infrastructure and policy distortions (Chand, 2012). The spread and success of the green revolution during the 1970s and 1980s led to an increase in the political power of the farming class and their clout in policy making. This was reflected in the creation and strengthening of farmer-friendly institutions and a policy environment favorable to farmers. Marketing institutions like market committees, state level marketing boards and many others in the public and cooperative sectors served the interests of the farming community. However, over the period of time after achieving self-sufficiency in food grains, public policy began losing its focus and targets. The marketing system and marketing institutions were plagued by inefficiencies, bureaucratic control, and politicization.

Apart from these internal challenges, farmers face the challenges from the rapid changes in the international trade and economic environment. Economies are now more interdependent, and a recession or boom in one country can affect others, sometimes profoundly (Kalamkar, 2009, 2011, 2011b). Some of the studies contested the role of regulation in agricultural marketing in the economic development (Pal et al. 1993; GOl 2001; Gujral et al. 2011; Minten et al. 2012). However, Purohit et al. (2017) found positive effect of market regulations on agricultural growth, technology adoption, area expansion, fertilizer use and irrigated area. Thus, assured and remunerative marketing opportunities hold the key to continued progress in agriculture and enhancing farm productivity and profitability. Several significant market reforms have already been initiated by the

Central and the State governments (see, Kalamkar, et al., 2020). These reforms provide more options to farmers for selling their produce, allowing the private sector, including cooperatives, to develop markets, promote direct sales to consumers, processors and retail chain suppliers / exporters and restrict corruption and harassment. However, still the markets are not that efficient as should have been.

Indian agriculture has become increasingly market-oriented and commercialized. During the last six decades of planned development in India, there has been continuous increase in Marketed Surplus Ratio (MSR) for all important non-cash crops like rice, wheat and maize, and cash crops like sugarcane, cotton and jute. Particularly, the ratio of marketed surplus in case of rice and wheat have gone up from 30 percent each in 1950-51 to 84.35 and 77.78 percent in 2014-15, respectively. The increase was more significant in maize (from 24 per cent to 88.06 percent) followed by jowar (24 per cent to 66.64 percent) during corresponding period. In the early 1950s, about 30-35 per cent of food grains output was marketed, which increased to more than 70 per cent in recent years (Sharma and Wardhan, 2015). While MSR was much higher for wheat and coarse cereals in Gujarat as compared to national average in 2014-15 (GOI, 2020).

As volume of marketed surplus affects the supplies of food for the non-farm population, increasing trend in marketed surplus lowers the pressure related to basic food items. Thus, massive increase in the marketed surplus ratio for key crops indicates an increasing penetration of the market over the last six decades. While, most of the marketed surplus is accounted by the large landholders, in relative terms even the smallest landholders sell a non-negligible share of their output (Basole and Basu, 2011). Thus almost half of the produce is being retained by the landless and marginal farmers for their family consumption and they sell the other half. At the same time, there are huge post-harvest losses (10-25 per cent for perishables like milk, meat, fish and eggs). The estimated losses in fruits and vegetables are even higher (30-40 per cent). These adversely affect the Indian economy (Hegazy 2013). Another estimate indicates an annual loss of Rs. 92,651 crores (Jha et al. 2015). The loss is almost three times as high as the budget for agriculture sector in 2016-17 (Molony, 2016).

In view of the existing conditions as mentioned above, vital steps need to be taken to ensure that the farmers get higher realization without putting additional

burden on consumers. Agricultural marketing is a state subject. However, many states are either slow or reluctant to implement various reforms and legislations related to marketing, even though they are considered necessary for developing the market, trade and for improving the welfare of producers and consumers. Some experts suggest moving agricultural marketing to the concurrent list, so that the required changes can be implemented quickly and smoothly (Chand, 2012).

1.5 Relevant Literature review:

The brief review of literature is presented here in order to get an overview about the findings of the researchers on the issues related market imperfections and farm profitability, in addition to some refereed above.

Heltberg, Rasmus (1998) examined the rural market imperfections and relationships between farm size and productivity and between farm size and profitability in Pakistan. Author reviewed controversies over the inverse size-output relationship and provided framework that explains the inverse relationship based on plausible assumptions about imperfections in the markets for labour, land, credit and risk. Author found a strong inverse relationship between farm size and yield, even when household fixed effects are used to account for unobserved heterogeneity.

Raghavan (2008) estimated and compared the paid-out cost of cultivation of wheat in India during the input subsidy regime of the 1970s and 1980s and after its abolition in the 1990s, when economic reforms were initiated. The study data of 'Comprehensive Scheme for Cost of Cultivation of Principal Crops in India' of the Ministry of Agriculture, GOI. After surveying the pattern of changes in inputs as well as costs of cultivation vis-à-vis the wholesale price index (a proxy for the general price level), the value of inputs which are exclusively market-purchased are analysed. A study of the weighted average of these costs establishes unequivocally that the costs of farm inputs increased very sharply in the post-reform period.

Dev and Rao (2010) examined the effectiveness of agricultural price policy in enabling farmers to obtain sufficient profits to promote investment, technology and productivity and thereby to food security. Authors estimated the profitability across States and found that returns over C2 costs for rice in the states like Assam, Bihar, Karnataka, MP, Orissa, Tamil Nadu, UP, and West Bengal witnessed

negative returns. On the other hand, all states covered all costs for wheat except for Jharkhand and West Bengal. The profitability improved for rice in AP, HP, Haryana and Punjab during the study period (1994-95 to 2007-08), while it declined for other states. On the other hand, returns for wheat rose for all the states considered in the study. However, all the states cover variable costs (A2) in rice and wheat with the exceptions being Uttarakhand. The situation in Jharkhand is also not remunerative enough to the farming community of wheat. The returns over variable costs for rice were much higher for HP, Punjab, Haryana, Chhattisgarh than other states. The returns for wheat are more than twice over A2 costs for the major wheat producing states. The ratio of returns over total costs (C2) and variable costs were higher for wheat as compared to rice since the mid-1990s. The higher profitability for wheat as compared to rice can also be seen in the growth rates of returns in constant prices. Rice recorded positive and high growth rates in net income, farm business income and farm investment income in the first period (1981-82 to 1992-93), however, it showed a negative growth rate in all these returns in the second period (1994-95 to 2006-07). The growth rates of rice in farm business income were similar to those of wheat in the first period. However, the major point of distress for paddy farmers was that the returns over paid-out costs also declined in the second period at 1.15 per cent per annum. On the other hand, the growth rates in profitability for wheat recorded positive growth rates of more than 2 per cent in both net income and farm business income in the second period also. In spite of similar growth rates for yields, the profitability for wheat is much higher than that of rice. This could be partly due to better realisation of prices for wheat.

Yusuf Mohammed Mahmud (2011) studied the market imperfections and farm technology adoptions decision in Ethopia. This study highlighted the importance of investigating factor market imperfections in understanding the farm household's behaviour in adopting yield- enhancing and soil conserving technologies. Author found that the outcomes of market imperfections such as limited access to credit, land size, risk considerations, and rates of time preference as significant factors explaining variations in farm technology adoption decisions. The study highlighted the need for a coordinated approach to produce a win-win result in the dissemination of both fertilizer and soil conservation technologies.

Narain et al., (2015) assessed the factors responsible for distress among farmers as well as found out the agrarian distress vulnerability in the Bundelkhand region of Uttar Pradesh, India. The study results revealed that 65.72 per cent of farmers of this region were moderately to highly vulnerable to stress. The major responsible causes for farmers' distress were the non-profitable price of farm produces, poor return from the farming product, and rainfall/ weather-related uncertainties, high cost of cultivation, lack of irrigation facilities, and lack of market facilities etc. Only 5.14 per cent of farmers were found resistant to stress. Stress vulnerability related perception showed that distress regarding the poor return from farming, while 58 per cent of farmers were in distress due to get low market price of agricultural produces. The scenario of crop insurance represented a very grim picture as only 16.86 per cent of respondents received crop insurance facility as they were credit/loan defaulters, while 59 per cent of respondents availed crop loan. 54.58 per cent of farmers were vulnerable due to the uncertainty of monsoon. Author suggested that increasing the productivity level of farming through various strategies is urgently needed to assure profitable price of farm produce, develop weather forecasting system, crop insurance, market facility etc. and launch a social awareness programme for stress management.

NITI Ayog (2015) in its occasional paper on 'Raising Agricultural Productivity and Making Farming Remunerative for Farmers' identifies five important aspects of agriculture that need immediate attention to bring economic advantages to millions of farm families. First, output per hectare, which is a common measure of agricultural productivity, remains low for many crops when compared to many other countries. There are also large regional variations within the country. Reasons include low and faulty input uses, poor access to modern technology and no real technological breakthrough in recent times. Second, on average, farmers do not realize remunerative prices due to limited reach of the MSP and an agricultural marketing system that delivers only a small fraction of the final price to the actual farmer. Third, the farm size of the majority of the household has declined to unviable levels inducing farmers to leave land and look for better job opportunities elsewhere. Because land-leasing laws make it risky to lease land, increasingly, productive land is being left uncultivated. Changes in the land leasing laws may bring consolidation of land holding at operational level and

attract better investment along with access to credit and relief to tenants. Fourth, relief measures in the event of natural disasters are inadequate and suffer from procedural inefficiencies and delays. The risk adaptation measures are poorly executed and have not worked effectively. This situation needs to be rectified with at least minimum quick relief to farmers for crop loss in case of natural calamities. Finally, the potential of the eastern region needs to be harnessed with suitable interventions. This region is unique for its suitability to the production of certain commodities. However, taking advantage of this potential would require institutional support and investment in technological innovations. The paper offers ideas on how these problems can be addressed so as to accelerate agricultural growth and bring remunerative prices to farmers.

Chand and Singh (2016) noted that an important reason for this dichotomy between agriculture and non-agricultural sectors is that the former is a state subject under the Indian Constitution placing the burden of implementation of reform agenda on the states. Some attempts were made by the central government during years 2002 to 2004 to initiate and promote reforms in agriculture through a Model APMC Act, changes in Essential Commodities Act and changes in Milk and Milk Product Order. Subsequently, some of these reforms were rolled back. Reforms related to APMC act were adopted very slowly and partially across different states and UTs. One third of the states and UTs did not adopt any of the APMC reforms. Authors noted that no state in the country has implemented the entire set of market reforms. Also, land leasing and harvest and marketing of some tree species on private farm land are subjected to various degrees of restrictions in almost all the States/UTs. Maharashtra achieved first rank followed by Gujarat at second rank in index based on the degree of reforms they have undertaken in agricultural marketing.

Narayanamoorthy (2017) noted that poor income from crop cultivation has resulted in increased indebtedness, widespread suicides of farmers and despite of same, issue of farm income has not received adequate attention till the early part of 2000s. Author has made effort to unravel the myths surrounding the issue of farm income and its estimates, and attempted to bring out the real situation in farm income in India. After analysing the data on Cost of Cultivation Survey from 1971-72 to 2013-14 and also the Situation Assessment of Survey of Farmers for the period 2002-03 and 2012-13, the study concludes that the farm income is not only

very low but the year-on-year fluctuation is also very high. Mere increase of MSP for crops alone would not guarantee better income for farmers unless procurement infrastructures are sufficiently strengthened. Therefore, along with remunerative MSP for different crops, if procurement arrangements and other non-price (technology, credit and irrigation) incentives are packaged and sequenced appropriately, farm income can be increased in a sustainable manner.

Kumar and Raj (2018) noted that the situation of agriculture in developing countries is not considered to be profitable in real terms due to the multiplicity of the factors such as small size of land holdings, monsoon, interference of middle men, market imperfection, outdated agriculture technology, poor concentration towards land improvement, use of improper fertilizer, lack of interest in farming, illiteracy, lack of future prediction, lack of irrigation facilities, poor knowledge about the cultivation of profitable crops, etc. Authors highlighted that one of the important factors that affects the farm profitability is the adoption and application of professionalism where the farmer uses the advanced and scientific techniques like soil testing, nursery management, plant protection, nutrition management, expert advices, labour management in a systematic order that enhances productivity. Under professionalism, one of the important factors that are identified is the adoption and application of farm budgeting template that helps to record the expenses involved in the agricultural operations. Such recording of the expenses will help in the proper utilization of the monetary and physical resources to a great extent. On the whole, research study reveals that adoption and application of a systematic farm budgeting template and proper recording helps the grower not only to reduce cost of production in real terms but also helped in increasing revenue through an increase in output and per unit price received by him.

Mukherjee, Arundhati (2018) studied the market imperfections in rural areas of West Bengal. Author noted that rural households in developing countries are exposed to market imperfections and constraints. Lack of access to crop market, presence of high transaction cost, existence of unemployment problems of various types, absence of insurance market for rural households in association with credit constraint and existence of problems of asymmetric information can be considered as the major sources of market failure in rural areas of a developing country. Market imperfections of different types induce some rural households to

select production for food self-sufficiency to smooth out own consumption and income fluctuations which appears to be inefficient in strict neo classical sense. Hence, understanding of sources and nature of market failure is important from the perspective of policies and programmes for rural development. This study put emphasis on need for improvement of the working of markets and diffusing information on production technologies. Author suggested requirement suitable credit schemes, minimum support price and improvement of educational level of farmers and extension services in rural Murshidabad for attainment of technical efficiency by the resource poor farmers.

In view of widespread capital market imperfections and farmers' budget constraints in developing countries, Anjana Bhattacharyya and Subal C. Kumbhakar (2019) studied market imperfections and output loss in the presence of expenditure constraint faced by 289 paddy growers of West Bengal, India by using indirect production function. The analysis generalizes the indirect production function to accommodate the numerous kinds of market imperfections and policy-induced distortions that pervade less developed countries' agriculture. The presence of these distortions in an expenditure-constrained situation results in a loss of output, defined as the difference between maximal potential output and actual output. Author found that government regulations and market imperfections cause a substantial loss of agricultural output of 12 per cent.

Latruffe et al., (2020) studied that perpetuation of subsistence farming in Kosovo covering the role of factor market imperfections focusing on imperfections in output and input markets covering data from 4187 agricultural sample households. The study results show that high labour price, low land availability and relatively poor physical infrastructure were strong impediments to commercialization of agriculture in the region. Similarly, to developing countries, this calls for active rural development and educational policy which can create labour opportunities for agricultural households. However, the large support from the diaspora implies that transforming the agricultural sector into a commercial one may need more than the traditional instruments of rural development policies in order to provide incentives for the use of remittances for productive investment. Based on survey data from 2005 and on a conceptual framework of household's sale behaviour in imperfect markets, this paper has shown that high labour price, low land availability and relatively poor physical infrastructure were strong

impediments to commercialization of agriculture in Kosovo (Europe). Enabling farmers to access additional land and hired labour may boost commercialization. There is a lack of social policy that can provide a safety net. The extended families locked in subsistence agriculture have been substituting for the lack of food security and social policies. The lack of institutions facilitating rural labour mobility has impeded structural change and farm commercialization. Authors suggested for the active rural development and educational policy which can create labour opportunities for agricultural households.

The review of literature indicates the grim situation of income from agriculture and that to unstable due to various reasons, while no study is found focusing on the market imperfection and farm profitability in India. Therefore, present study was undertaken to fill up this gap in literature and also to use in proper policy formulation towards doubling of farmers' income with following objectives.

1.6 Objectives of the Study

1) To analyse the product markets (output) including price(s) received (market as well as MSP if any), marketing channels, market structure and bottlenecks
2) To analyse 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) To analyse the government support structure including access to credit
4) To analyse the coping strategies of farmers during economic hardships and their social networks

1.7 Data and Methodology

The study is based on both secondary and primary level statistics. The secondary data were compiled from different publications and related websites of Government of India and Government of Gujarat.

The primary data were collected from the selected households. A multi-stage sampling was adopted for the selection of sample households. As far as the selection of sample for primary survey is concerned, the villages which were selected for the block 2017-2020 under the Government of India's scheme for the

data collection on cost of cultivation (*Comprehensive Scheme for Studying the Cost of Cultivation of Principal Crops in Gujarat*[6]) of major crops in Gujarat have been covered. The selection procedure suggested by the Ministry of Agriculture, Government of India in Cost of Cultivation Scheme is adopted as given below:

- The Stratified Random Sampling technique was used to select the farmer household**.**
- The State is divided into 8 homogeneous agro-climatic zones based on crop-pattern, soil type rainfall pattern etc. (Map 1.1). At the first stage, all 246 taluka/tehsils in the state were arranged in 8 Agro-climatic zones (as one district may fall under more than one ACZ).
- In proportion to the area under selected crops concerned to area under these crops in the state, the two tehsil units are allocated to each zone. Within zone, the allocated numbers of tehsils were selected with probability proportion to area under selected crops (by using two digit/four digit random table).
- At the second stage, after selection of taluka and number of clusters therein, field staff visited the Taluka/block/tahsil Agriculture Office and collected the data/information on villages[7] having maximum area under selected crops. On the basis of information provided by the Taluka Agriculture Officer on tentative area under selected crops (rough dataset) in selected village/villages having maximum area under selected crops, such villages were selected.
- At the third stage, in each selected village, farmer household census was conducted. Complete farmer household listing was carried out in the selected villages. If a village was very large (>500 households), listing of at

[6] Under the Comprehensive Scheme for Studying the Cost of Cultivation of Principal Crops (CCS) in Gujarat, from eight Agro-climatic zones, total sixty village clusters have been selected from selected 60 talukas of 33 districts of the state (on the basis of area under selected crops) for collection of primary data on cost of cultivation of 16 principal crops in the state. This data is collected for all three agriculture seasons (*Kharif, Rabi and Summer*) every year through the field staff appointed at each cluster. The selection of number of clusters from different Agro-Climatic Zones is based on the share of area under selected crops together to gross cropped area in the state, i.e., higher the share in GCA of particular zone, higher the number of clusters selected from the corresponding zone. The selection of talukas and subsequent village/s from that talukas are based on the data related to area under study crops, area sown more than once, irrigation availability, livestock and mechanization, village accessibility and other parameters.

[7] Village-wise approximate area under crop is collected from Taluka Agriculture Officer of respective tahsil.

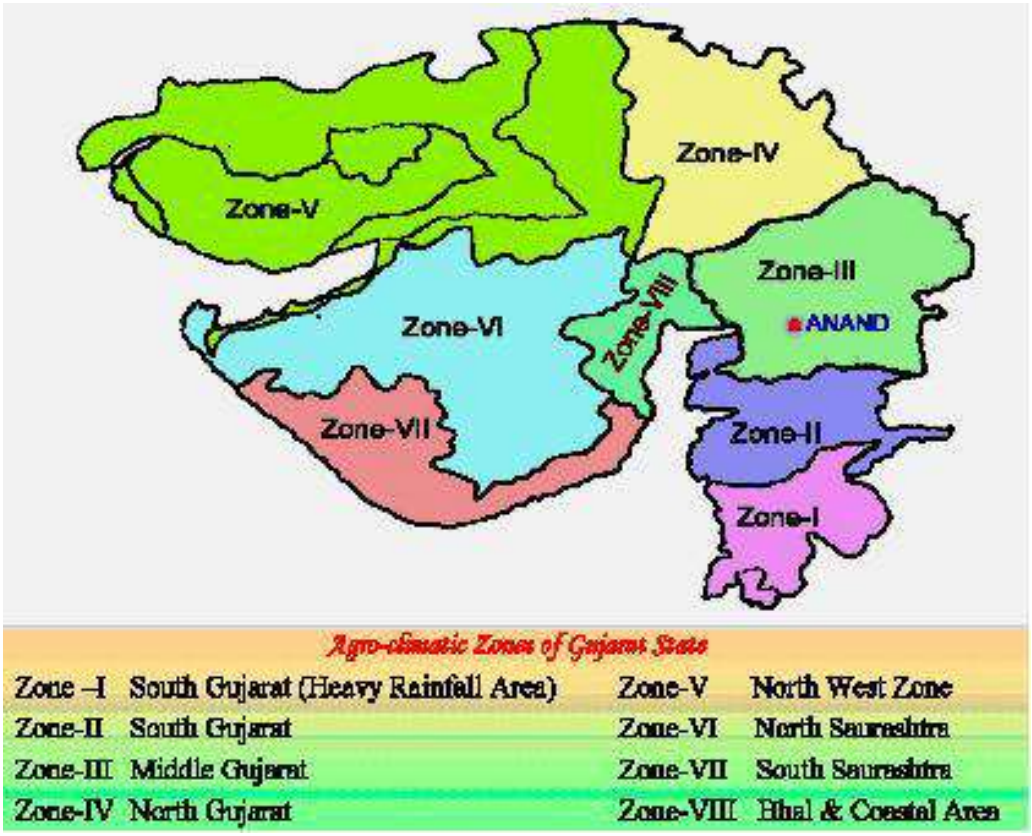
least 300 households, from all the locations in the village, was carried out. The listing thus carried out forms the sampling frame for the study.

- From each village, a total sample of 50 farmers were selected randomly. The households from the land size categories i.e. marginal (<1 hectare), small (1-2 hectares), medium (2.1-4 hectares), large (4.1-10 hectares) and very large (>10 hectares) were selected using stratified random sampling with PPS method (probability proportional to size). Due care was taken in selection to have farmer household with irrigation, livestock and other related factors (farmer response, etc). Due care was also taken in selection of villages (not be contiguous in location). The location of selected districts is presented in Map 1.2 and details on the selected villages and sample households are presented in Table 1.1.
- The selected farmers were surveyed with a pre-prepared questionnaire.
- All the crops grown by the selected households were listed and were coded for the data analysis purpose as presented in Table 1.3.

Table 1.1: Details on Selected Villages in Gujarat

SL	Agro-Climatic Zones		District	Taluka	Village	Sample Size number
1	I	South Gujarat (Heavy Rain Area)	Navsari & Tapi	Khergam & Songadh	Vad & Kikakui	100
2	II	South Gujarat	Surat & Bharuch	Olpad & Jagadia	Khumbhari & Umalla	100
3	III	Middle Gujarat	Mahisagar	Khanpur & Balasinor	Limbadiya & Janod	100
4	IV	North Gujarat	Kheda	Mahudha & Kapadvanj	Heranj & Savali	100
5	V	North West Gujarat	Banaskantha	Tharad & Lakhani	Vasana-Vatam & Moti Pavad	100
6	VI	North Saurashtra	Bhavnagar & Botad	Mahuva & Botad	Otha & Shirvaniya	100
7	VII	South Saurashtra	Jamnagar	Dhrol & Jamnagar	Haripar & Theba	100
8	VIII	Bhal & Coastal Area	Ahmedabad	Dholka & Daskroi	Sahij & Vanch	100

Map 1.1: Agro-Climatic Zones in Gujarat



Map 1.2: Location Map of Study Area in Gujarat, India

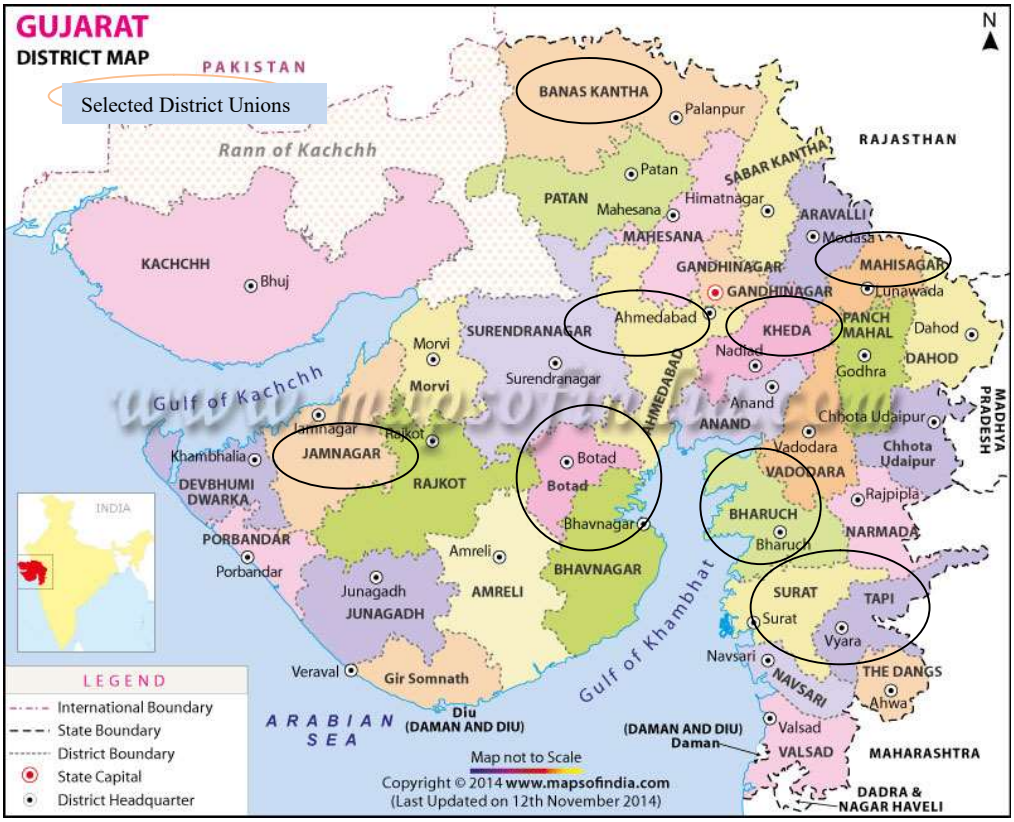


Table 1.2: Crop name and Code

Code	Crop name	Code	Crop name	Code	Crop name
101	Paddy	511	Cumin seed	1004	Rapeseed & Mustard
102	Jowar	588	Other condi & spices	1101	Cotton
103	Bajra	601	Mangoes	1302	Tobacco
104	Maize	688	Other fruits	1401	Guar
106	Wheat	708	Onion	1488	Other fodder crops
201	Gram	788	Other vegetables	1702	Isabgol
202	Tur	1001	Groundnut	1888	Other non-food crops
288	Other pulses	1002	Castor seed		
401	Sugarcane	1003	Sesamum		

1.8 Limitations:

The households in the category of large (4.1-10 hectares) and very large (>10 hectares) were not available in some selected districts in south Gujarat region such Bharuch, Navsari and Tapi, while in other district, share of very large famer household was very meagre or absent. In such cases, households from nearby category were interviewed.

1.9 Organization of Report

The present study report is divided into nine chapters including this introductory chapter. The introductory chapter presents the introductory notes, brief intro to market imperfections and its relation to farm profitability; possible market imperfections– product, input, labour, credit, land etc.; objectives of the study; relevant literature review, methodology, including sampling techniques and analytical framework. Chapter II presents overview of the study region covering overall description of the study region based on village listing schedule, overview of the sample villages covering, distribution of households in different landholding

categories, average size of landholding (in hectares), irrigation status, land leasing status etc; distribution of households by social groups, occupations and annual household income etc; and livestock and fixed capital (machinery) endowments. Chapter III presents the crop and input markets covering distribution of households growing different crops; average area and yield of different crops; 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; details of all the inputs used and their procurement channels (farm saved, purchased etc); expenditure incurred and quality of inputs and whether price paid for inputs is reasonable and reasons if not . Chapter IV covers information about animal products and input markets covering aspects like sale of various products (eggs, milk etc) and the marketing channels; usefulness of these channels and reasons for dissatisfaction, if any; adequacy of price received and if inadequate, reasons for the same; details of all the inputs used and their procurement channels (farm saved, purchased etc); expenditure incurred and quality of inputs and whether price paid for inputs is reasonable and reasons if not. The details on labour market are discussed in Chapter V indicating details of labour use: types of labour (family labour, farm servant, hired labour, etc); number of days employed and number of hours per day, wage rate; whether the wage rate is reasonable and the reasons if not; details of labour supply including the number of households engaged as wage labour duration; wage rate and various constraints to working as wage labour such as low demand, low wage rate, harsh conditions etc. Chapter VI covers credit market where in sources of borrowing in the study region; number, amount, interest rate, purpose of borrowing and the number of loans taken in the last one year from each source; Number of households that repaid the loan and the amount and Reasons for non-repayment. The Asset endowments of the households, government support programs and insurance are presented and discussed in Chapter VII. Chapter VIII highlights the problems in farming, economic risks faced, coping strategies and social networks. The last chapter presents the summary and conclusions.

The next chapter presents the overview of the study region

Chapter II

Overview of the Study Region

2.1 Introduction:

Gujarat has been consistently clocking impressive agricultural growth rates. This has been possible because the government has focused on improving not only irrigation, quality of seeds and power but also subsidiary sectors like animal husbandry. The growth of the animal husbandry sector has resulted not only in increased milk production but has also provided a boost to the overall agro-economy of the state[1]. The livestock sector in Gujarat has achieved a remarkable success during last six decades due to collective efforts of government organisations, non-government organisation and the milk producers. Gujarat is one of the leading states in terms of milk production. The cooperative sector has been the key driver of the tremendous increase in Gujarat's milk production. It is not a surprise that Gujarat, the birthplace of India's white revolution, has a thriving milk cooperative sector. The largest dairy co-operative in India, Amul, is based in Anand, Gujarat. 'Amul' pattern is well known and accepted by all states in India besides some of the countries in the world[2] (Kalamkar, et.al, 2017).

Gujarat with geographical area of 19,60,924 square kilometres accounts for 6.19 per cent of total geographical area of India. It has 33 districts, including 7 newly carved out districts and 248 talukas. The state is divided in to five administrative regions (see, Map 2.1). It falls in 13th Agro climatic zone of India which is further divided into eight sub-zones (see, Map 1.1). The salient features of agro-climatic zones of Gujarat state are presented in Table 2.1. Gujarat has the longest coastline of 1600 kilometres which is about 20 per cent of country's total coastline. As per 2011 census, the population of the State was 6.04 crore out of which 47.85 per cent population were females (2.89 crore). Half of the state population is distributed across seven districts, viz. Ahmedabad, Surat, Vadodara, Rajkot, Banaskantha, Bhavnagar and Junagadh. Poverty head-count ratio of the State stands at 23.0 per cent. The literacy rate in the State was 78.03 per cent (2011). As elsewhere, urbanisation is on the rise, with urban areas accounting for

[1] http://gujaratindia.com/media/news.htm?NewsID=OwAhuSgQW4gO/FwVoIqgsQ==
[2]https://doah.gujarat.gov.in/dairy-development.htm

43 per cent of the population. The State economy is among the top four major state economies and at current prices, it contributes to about 7.6 per cent to the National GDP during the year 2016- 17, despite the State accounts for 4.99 per cent to country's total population. The Per Capita Income (i.e. Per Capita NSDP at market prices) at constant (2011-12) prices has been estimated at Rs. 155493 in 2018-19 and at current prices, it has been estimated at Rs. 197447 in 2018-19 (GOG, 2020) which was higher than all India average of Rs. 135050/-.

Table 2.1: Salient Features of Agro Climatic Zones of Gujarat State

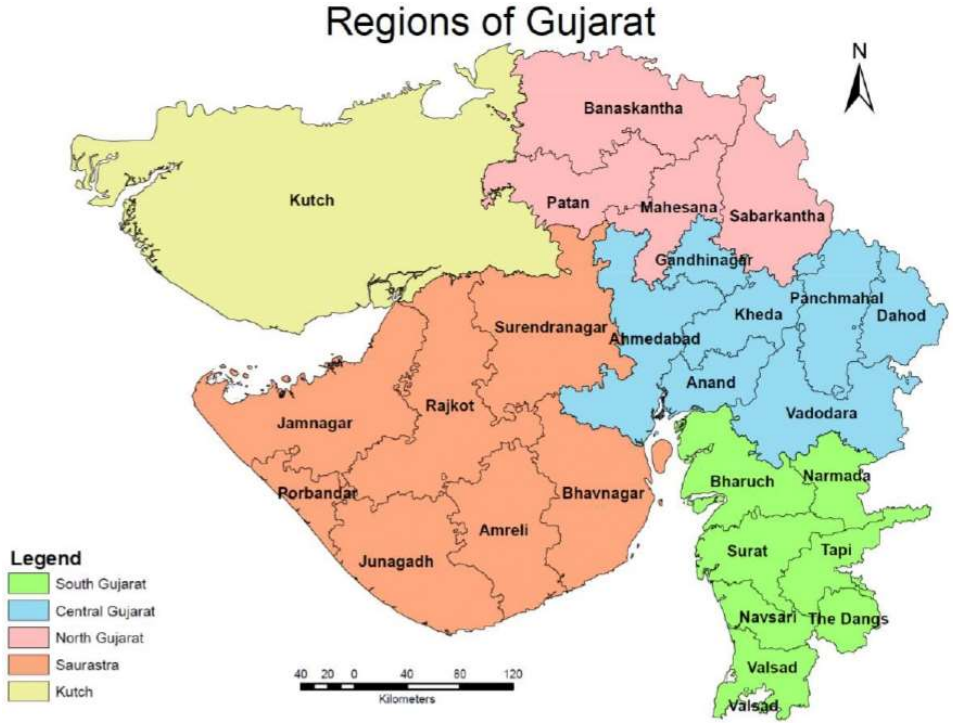
Zone	Climate	Districts Covered	Rainfall (mm)	Major Crops	Soil
1	2	3	4	5	6
South Gujarat (Heavy Rain Area.)	Semi-arid to dry sub-humid	Navsari, Dang, Valsad and Valod, Vyara, songadh and Mahuva taluks of Surat.	1500 and more	Rice, Sorghum, Ragi, Kodra, Seasamum, Pigeonpea, Groundnut,Cotton, Sugarcane, Chillies, Wheat, Gram	Deep black with few patches of coastal alluvial, laterite and medium black
South Gujarat	Semi-arid to dry sub-humid	Surat and Amod, Ankleshwar, Broach, Dekdopada, Honsot, Jhagadia, Nanded, Sagbara and Valia talukas of Bharuch.	1000-1500	Rice, Wheat, Gram, Perlmillets,Sorghum, Maize, Kodra, Ragi, Pigeonpea, groundnut, Sesamum, Castor, Cotton, Sugarcane, Chillies,	Deep black clayey
Middle Gujarat	Semi-arid	Panchmahals, Baroda and Anand, Balasinor, Borsad, Kapadvanj, Kheda, Matar, Ahmedabad, Nadiad, Petlad and Thasara and taluks of Kheda.	800-1000	Rice, Wheat, Gram, Perlmillets,Sorghum, Maize, Kodra, Ragi, Pigeonpea, groundnut, Sesamum, Castor, Cotton, Sugarcane, Potato, Rapeseed & Mustard.	Deep black, medium black to loamy sand
North Gujarat	Arid to semi-arid	Sabarkantha, Gandhinagar, Dehgam, Daskroi, Sanand talukas of Ahmedabad, Deesa, Dhenera, Palanpur, Dandta, Wadgam taluks of Banaskantha and Chanasma, Kadi, Kalol, Kheralu, Mehsana, Patan, Sidhpur, Visnagar, Vijapur taluks and Mehsana.	625-875	Rice, Wheat, Gram, Perlmillets,Sorghum, Maize, groundnut, Sesamum, Castor, Cotton, Sugarcane, Cumin, Rapeseed & Mustard.	Sandy loam to sandy

Table 2.1 Continued...

1	2	3	4	5	6
Bhal & Coastal Area	Dry sub-humid	Bhavnagar (Vallabhipur, Bhavnagar talukas), Ahmedabad (Dholka, Dhanduka talukas), and Vagra, Jambusa talukas of Bharuch.	625-1000	Rice, Pearl millets.	Medium black, poorly drained and saline
South Saurashtra	Dry sub-humid	Junagadh, Ghodha, Talaja, Mahava taloukas of Bhavnagar Kodinar, Rajula and Jafrabad talukas of Amerli and Dhoraji, Jetpur, Upleta talukas of Rajkot.	625-750	Rice, Maize, Sugarcane Wheat, Gram Pearl millets , Sorghum, Groundnut, Seasamum,Cotton, Pulses, rapeseed & mustard	Shallow medium black calcareous
North Saurashtra	Dry sub-humid	Jamnagar, Rajkot, Chotila, Limdi, Lakhtar, Muli, Sayla, Wadhwan talukas of Surendranagar and Gadheda, Umrala, Botad, Kundla, Dihor, Garidhar, Palitana talukas of Bhavnagar and Amreli, Babra, Lathi, Lalia, Kunkavav, Khamba, Dhari taluks of Amreli.	400-700	Pearl millets, Sorghum, Groundnut, Seasamum, Castor, Cotton, Pulses.	Shallow medium black
North West Zone	Arid to semi-arid	Kutch, Rajkot, Malia Halvad, Dhrangdhra, Dasada taluks of Surendranagar, Sami and Harij taluks of Mahsana, Santhalpur, Radhanpur, Kankrej, Deodar, Vav, Tharad taluks of Banaskantha and Viramgam taluka of Ahmedabad.	250	Rice, Wheat, Gram, Perlmillets,Sorghum, Maize, Pigeon pea, groundnut, Sesamum, Castor, Cotton, Rapeseed & Mustard , barley.	Sandy and saline

Source: Directorate of Economics and Statistics, Department of Agriculture and Cooperation, Govt. of Gujarat, Gandhinagar

Map 2.1: Administrative Regions of Gujarat



Source: http://gujenvis.nic.in/

2.2 Overall description of the Study Region

As mentioned in earlier chapter, total 16 villages were selected from eight agro-climatic zones of Gujarat and 50 households from each village were selected by using stratified random sampling with PPS method (probability proportional to size). Also as noted earlier that the households in the category of large and very large land holder group were not available in some selected districts in South Gujarat region (such Bharuch, Navsari and Tapi), while in other district, share of very large land holding farmer households were very meagre or absent, in such cases households from nearby category were interviewed. It can be seen from the Table 2.2 that the villages in North and Saurashtra regions are scattered and thus those selected villages are little bit far from the town as well as from the nearest APMC market as compared to the villages in South and the Central Gujarat region. The highest distance to input and APMC markets was about 21 kilometres. Except one selected village, all other villages have primary dairy cooperative society in their village itself. The groundwater level was found very shallow in the South Gujarat- heavy rainfall regions (0-150 feet) followed by the Central Gujarat and Saurashtra region (120-450 feet) and the highest depth of groundwater availability was in North Gujarat region which ranges from 600-1200 feet.

Table 2.2: General Information of Selected Villages

Sr No.	Name of District	Name of Village	General Information of Selected Villages							
			Nearby Town Name	Distance (kms) from village to nearest town	Distance (km) from nearest Bus stand	Railway Station (kms)	Nearest APMC Market	Distance to market (kms)	Agriculture Input markets : Local/ Town	Distance
1	Banaskantha	Moti Pavad	Tharad	10	3	60	Tharad	10	Tharad	10
2	Banaskantha	Vasna (Vatam)	Lakhani	7	7	60	Lakhani	7	Lakhani	7
3	Bhavnagar	Otha	Mahuva	18	1	20	Mahuva	18	Mahuva	18
4	Botad	Shirvaniya	Botad	15	15	15	Botad	15	Botad	15
5	Jamnagar	Haripar	Dhrol	10	10	25	Dhrol	10	Dhrol	10
6	Jamnagar	Theba	Jamnagar	10	1	10	Hapa	6	Jamnagar	10
7	Ahmadabad	Vanch	Mahemdavad	20	0.5	20	Jetpur	21	Vanch	3
8	Ahmadabad	Sahij	Dholka	9	2	NA	Dholka	9	Sahij	1
9	Bharuch	Umalla	Jhagadia	20	0	0	Umalla	20	Umalla	0
10	Kheda	Heranj	Mahudha	21	21	14	Mahudha	21	Pansora	6
11	Kheda	Savali	Kapadvanj	9	9	9	Kapadvanj	9	Kapadvanj	9
12	Mahisagar	Janod	Balasinor	9	9	NA	Balasinor	12	Balasinor	12
13	Mahisagar	Limadiya	Virpur	12	12	NA	Lunavada	15	Limadiya	1.5
14	Navsari	Vad	Khergram	7	0	20	Khergram	7	Khergram	7
15	Surat	Kumbhari	Olpad	3	0	25	Olpad	3	Olpad	3
16	Tapi	Kikakui	Vyara	10	0	10	Vyara	10	Vyara	10

Sr No.	Name of District	Name of Village	General Information of Selected Villages								
			Name of Dairy Cooperative Society Local/ nearby village	Distance (kms)	Any river flowing nearby	Distance	Canal nearby	Distance	Av Groundwater Depth (feet)	Rural Primary Veterinary Health Care Centres	If no distance (kms)
1	Banaskantha	Moti Pavad	Moti Pavad	0	Banas	45	Narmada	12	1200	No	10
2	Banaskantha	VasnaVatam	Vasna (Vatam)	0	Banas	30	SujalamSuflam	1	600	No	6
3	Bhavnagar	Otha	Otha	0	Malan	20	Kshetrunj	15	40	Yes	0
4	Botad	Shirvaniya	Shirvaniya	0	NA		NA		450	No	15
5	Jamnagar	Haripar	Dhrol	10	NA		NA		350	No	12
6	Jamnagar	Theba	Theba	0	NA		NA		300	No	15
7	Ahmadabad	Vanch	Vanch	0	Khari	0.5	Khari kat	0.5	350	No	8
8	Ahmadabad	Sahij	Sahij	0	Sabarmati	2	NA		60	No	12
9	Bharuch	Umalla	Umalla	0	Narmada	70	Karjan Dam	0	300	No	20
10	Kheda	Heranj	Heranj	0	Shedi	0.5	NA		120	No	25
11	Kheda	Savali	Savali	0	NA		Narmada	4	90	No	15
12	Mahisagar	Janod	Janod	0	Mahisagar	1	NA		100	No	10
13	Mahisagar	Limadiya	Limadiya	0	Mahisagar	4	Mahi Bhadar	1	150	No	8
14	Navsari	Vad	Vad	0	Vadkhadi	0.5	Vad	0	100	No	7
15	Surat	Kumbhari	Kumbhari	0	Tapi	20	Ukai	0	50	No	3
16	Tapi	Kikakui	Kikakui	0	Tapi	15	Ukai kakarapad	20	150	No	10

Source: Field survey data.

2.3 Overview of the Sample Villages

The data were collected on land use statistics of the selected villages. It can be seen from the Table 2.3 that the average geographical area of the selected village is estimated to be around 1000 ha which has range of as low as 377 ha to 1627 ha geographical area coverage. Forest coverage was found only in village of Mahisagar district. Around 77 per cent of total geographical area is estimated to under cultivation having as high as share of more than 88 per cent in Banaskantha and as low as share of almost 55 per cent in Mahisagar district, due to relatively large area categorised as barren and uncultivable land.

Table 2.3: Land use Classification of villages (Year 2018-19) in ha.

Sr. No.	District Name	Village Name	Total Geographical Area (in Hectares)	% to Geographical area								
				Forest Area	Area under Non-Agricultural Uses	Barren & Un-cultivable Land Area	Permanent Pastures and Other Grazing Land Area	Land Under Miscellaneous Tree Crops etc. Area	Culturable Waste Land Area	Fallows Land other than Current Fallows Area	Current Fallows Area	Net Area Sown
1	Ahmadabad	Vanch	1079.46	0.0	6.5	0.0	0.0	0.0	13.9	3.7	0.0	75.9
2	Ahmadabad	Sahij	1156.96	0.0	0.3	0.0	11.5	0.0	5.7	11.3	0.0	71.2
3	Banas Kantha	Moti Pavad	935.82	0.0	1.3	0.2	5.4	0.0	2.5	3.2	0.0	87.4
4	Banas Kantha	Vasna (Vatam)	1627.02	0.0	0.4	0.0	7.6	0.0	0.7	1.7	0.9	88.7
5	Jamnagar	Theba	706.75	0.0	5.2	0.0	18.9	0.0	0.0	0.0	0.0	75.9
6	Jamnagar	Haripar	1013.46	0.0	1.4	15.1	7.7	0.0	0.0	0.0	0.0	75.8
7	Kheda	Savali	1143.25	2.4	0.1	9.6	20.1	7.5	3.5	1.8	7.3	47.6
8	Kheda	Heranj	1077.22	0.0	0.7	0.0	14.8	0.0	0.0	0.1	0.0	84.4
9	Mahisagar	Janod	844.34	0.0	1.6	33.8	0.7	0.0	0.0	0.0	0.0	64.0
10	Mahisagar	Limadiya	1040.02	28.7	0.4	7.3	1.4	2.9	0.0	0.0	4.4	54.8
11	Bhavnagar	Otha	1395.90	0.0	6.1	0.8	8.0	0.0	5.7	0.0	0.0	79.5
12	Botad	Shirvaniya	846.77	3.4	2.6	0.0	5.1	0.0	7.1	0.0	0.0	81.7
13	Bharuch	Umalla	635.76	0.0	9.4	0.0	7.1	0.0	0.0	0.0	0.0	83.5
14	Navsari	Vad	1365.94	0.0	0.0	3.2	2.7	0.0	0.4	2.7	0.0	91.0
15	Surat	Kumbhari	377.32	0.0	0.0	11.4	2.4	0.0	0.0	0.0	0.0	86.1
16	Tapi	Kikakui	743.46	12.9	0.0	2.0	2.2	0.0	0.0	0.0	0.0	82.9
	Av.		999.3	2.8	2.1	4.6	7.5	0.7	2.7	1.8	0.9	76.9

Sources: Field survey data and Census 2011-Gujarat.

The details of households presented in Table 2.4 indicate that on an average, around 41 per cent of households in selected villages possess some piece of land, which ranges from as high as 74.4 per cent of total households in Haripur of Jamnagar district and as low as 23.1 per cent in Vad village of Navsari district. Out of total agricultural households, almost 72 per cent of total households were from the group of marginal and small landholders. The share of marginal and small landholders in total households was found the highest in Vasana-Vatam village of Banaskantha district (87.3 per cent) and the share was found the lowest in Haripur village in Jamnagar district (41.9 per cent). In case of more than 96 per cent of households, agriculture land holding was on the name of male family members indicating huge inequality between male and female and thus dominance of male member in the society.

Table 2.4: Details on Households in Selected Villages as per Villages Census

District	Village Name	Farmers Group					Agri hh to total hh (%)	Gender of land holders		Average Age.	Social Group			
		Marginal	Small	Medium	Large	Very large		Male	Female		SC	ST	OBC	General
Ahmedabad	Sahij	45.0	25.2	15.8	11.0	3.0	57.8	98.6	1.4	57.1	10.6	4.4	78.0	7.1
Ahmedabad	Vanch	62.6	24.3	9.2	3.4	0.6	25.8	91.6	8.4	55.9	4.2	1.4	61.5	33.0
Banaskantha	VasanaVatam	31.4	55.9	10.5	2.3	0.0	27.7	100.0	0.0	51.7	14.5	0.5	44.1	40.9
Banaskantha	Moti Pavad	26.8	27.9	27.9	13.9	3.6	70.4	100.0	0.0	48.0	31.4	13.6	25.4	29.6
Bharuch	Umalla	42.0	28.3	22.2	7.5	0.0	29.5	86.8	13.2	41.1	7.1	26.9	1.4	64.6
Bhavnagar	Otha	25.7	34.8	26.2	9.5	3.8	37.4	100.0	0.0	52.1	1.0	1.0	92.9	5.2
Botad	Shirvaniya	15.9	34.5	41.6	6.2	1.8	65.7	100.0	0.0	50.8	2.7	0.0	23.9	73.5
Jamnagar	Haripar	8.6	33.3	28.8	26.3	3.0	74.4	100.0	0.0	47.5	2.0	0.0	29.3	68.7
Jamnagar	Theba	25.0	37.9	25.8	7.6	3.8	38.7	98.9	1.1	50.2	29.2	0.0	47.7	23.1
Kheda	Heranj	38.7	29.5	17.5	11.0	3.4	65.5	97.9	2.1	53.9	4.5	8.9	24.7	62.0
Kheda	Savli	52.0	26.0	13.2	7.6	1.2	48.3	98.4	1.6	54.0	49.6	0.4	7.6	42.4
Mahisagar	Janod	64.8	18.3	15.3	1.7	0.0	53.9	95.0	5.0	55.8	16.3	22.3	40.9	20.6
Mahisagar	Limbadiya	50.0	31.7	7.5	10.8	0.0	34.1	98.5	1.5	56.0	13.4	12.3	18.7	55.6
Navsari	Vad	67.7	18.8	11.6	2.0	0.0	23.1	93.7	6.3	47.7	5.0	0.0	5.9	89.1
Surat	Khumbhari	51.1	15.9	14.8	15.9	2.3	63.3	96.6	3.4	43.5	0.0	00.0	0.0	0.0
Tapi	Kikakui	39.5	35.5	16.0	9.0	0.0	46.4	91.4	8.6	47.6	0.0	0.0	0.0	00.0
Av		42.0	29.5	18.3	8.5	1.6	40.8	96.6	3.4	48.6	12.5	8.1	34.7	12.5

Source: Field survey data.

The average age of the farmers was estimated of 48.6 years. The social distribution of households in selected village indicate that on an average, 44.6 per cent households belongs to general category group, followed by 34.7 per cent households from Other Backward Classes group while remaining were from Schedules Caste and Scheduled Tribe social category. The dominance of Schedules Caste category households was observed in two villages, viz. Savli village of Kheda district, and Moti Pavad village of Banaskantha district. The main occupation of households in selected villages was obvious agriculture includes crop cultivation and agriculture labour. Dairy activity was an important subsidiary activity reported in these villages. The average land holding size was 1.90 ha which ranges from as high as 3.54 ha in Haripur village of Jamnagar and as low as 0.99 ha in Vad village of Navsari district.

Table 2.5: Details on Major Occupation of Households in Selected Villages

District	Village Name	Occupation (% to total)							Average Operational land holding size (ha)
		Cultivation	Agri. Labour	Dairy	Non-Agri. Labour	Business/shop/Non -farm business	Salareid	Others	
Ahmedabad	Sahij	94.0	0.0	0.0	0.0	2.3	3.7	94.0	2.37
Ahmedabad	Vanch	97.5	0.0	0.3	0.0	2.2	0.0	97.5	1.26
Banaskantha	Vasana-Vatam	100.0	0.0	0.0	0.0	0.0	0.0	100.0	1.45
Banaskantha	Moti Pavad	100.0	0.0	0.0	0.0	0.0	0.0	100.0	2.08
Bharuch	Umalla	100.0	0.0	0.0	0.0	0.0	0.0	100.0	1.54
Bhavnagar	Otha	100.0	0.0	0.0	0.0	0.0	0.0	100.0	2.35
Botad	Shirvaniya	100.0	0.0	0.0	0.0	0.0	0.0	100.0	2.58
Jamnagar	Haripar	100.0	0.0	0.0	0.0	0.0	0.0	100.0	3.54
Jamnagar	Theba	100.0	0.0	0.0	0.0	0.0	0.0	100.0	2.19
Kheda	Heranj	98.3	0.0	1.0	0.0	0.3	0.3	98.3	2.22
Kheda	Savli	99.6	0.0	0.0	0.0	0.0	0.0	99.6	1.54
Mahisagar	Janod	99.7	0.0	0.0	0.0	0.0	0.3	99.7	1.01
Mahisagar	Limbadiya	100.0	0.0	0.0	0.0	0.0	0.0	100.0	1.41
Navsari	Vad	100.0	0.0	0.0	0.0	0.0	0.0	100.0	0.99
Surat	Khumbhari	100.0	0.0	0.0	0.0	0.0	0.0	100.0	2.23
Tapi	Kikakui	98.0	0.0	1.2	0.0	0.4	0.4	98.0	1.70
Av		98.9	0.0	0.2	0.0	0.5	0.5	98.9	1.90

Source: Field survey data.

The livestock and productive asset holdings of the selected villages indicate that buffaloes and cattle dominate the livestock while small ruminant like sheep and goat were reported in few villages. Tractor was only the common machinery found in all villages while few villagers possess threshers and one village reported to have harvester.

Table 2.6: Livestock and Agri. Machineries in Selected Villages (Year 2018-19)

Sr. No.	District	Taluka	Village	Livestock (No.)/ Ag HH				Machinery and Implements (Nos.)/HH		
				cattle	buffalo	sheep	goat	Tractors	Harvesters	Threshers
1	Banas Kantha	Tharad	Moti Pavad	2.78	9.40	0.18	0.18	12.54	0.19	0.00
2	Banas Kantha	Lakhani	Vasna (Vatam)	4.99	4.88	0.00	0.00	9.86	0.00	0.00
3	Bhavnagar	Mahuva	Otha	0.84	1.96	4.21	0.38	7.40	0.00	0.00
4	Botad	Botad	Shirvaniya	0.99	1.76	0.00	0.00	2.75	0.00	0.00
5	Jamnagar	Dhrol	Haripar	1.08	0.92	4.54	1.15	7.68	0.00	0.00
6	Jamnagar	Jamnagar Rural	Theba	1.50	1.67	0.26	1.62	5.06	0.00	0.00
7	Ahmadabad	Daskroi	Vanch	3.25	8.43	0.73	1.00	13.42	0.20	0.00
8	Ahmadabad	Dholka	Sahij	0.71	2.25	0.00	0.03	2.99	0.10	0.02
9	Bharuch	Jhagadia	Umalla	0.92	1.76	0.13	1.09	3.90	0.08	0.00
10	Kheda	Mahudha	Heranj	1.78	1.77	0.05	0.14	3.75	0.43	0.00
11	Kheda	Kapadvanj	Savali	0.53	3.41	0.00	0.28	4.22	0.10	0.00
12	Mahisagar	Balasinor	Janod	2.10	3.02	0.00	1.53	6.65	0.04	0.00
13	Mahisagar	Khanpur	Limadiya	3.21	5.09	0.00	0.51	8.82	0.06	0.00
14	Navsari	Khergam	Vad	7.55	2.36	0.00	2.30	12.21	0.11	0.00
15	Surat	Olpad	Kumbhari	0.48	2.11	0.00	0.14	2.73	0.43	0.00
16	Tapi	Songadh	Kikakui	0.89	1.86	0.00	0.00	2.75	0.07	0.00
	Av			2.36	3.64	0.54	0.64	7.18	0.10	0.00

Source: Field survey data.

2.3.1 Details of Selected Sample households:

The distribution of households by size of landholding presented in Table 2.6 indicate that almost 70 per cent of selected households were from marginal and small landholding size group (possessing land less than 2 ha) followed by almost two fifth of total households from medium size land holder category (having land between 2-4 ha). Households from large size holders accounts for about 10 per cent of total households of sample. Thus, as like at state and national level, dominance of marginal and small holder group is prevalent in sample households also. The average size of landholdings of selected households was 2.10 ha.

Table 2.7: Distribution of households by Landholding categories

(Number of households)

Landholding categories	Number of households	Percent
Marginal	315	39.38
Small	239	29.88
Medium	156	19.50
Large	76	9.50
Very Large	14	1.75
Total	800	100.00

Source: Field survey data.

Most of the landholding was having irrigation facility except few parcels of large land holders group (Table 2.8). Due to high coverage of land area under irrigation, leased-out tendency was found very rare while leased-in activity was profound among very large land holder group which may be due to availability of resources with this group as well as risk bearing capacity.

Table 2.8: Average Size of landholding (in hectares)

Landholding Categories	Average Size of landholding (in hectares)					
	Owned land	Leased-in land	Leased-out land	Total operational landholding	Irrigated land	Unirrigated land
Marginal	0.62	0.00	0.01	0.61	0.56	0.05
Small	1.49	0.02	0.02	1.49	1.43	0.07
Medium	2.71	0.19	0.00	2.90	2.80	0.10
Large	5.39	0.59	0.03	5.96	5.75	0.21
Very Large	7.93	8.15	0.00	16.08	12.45	3.62
Total	1.87	0.24	0.01	2.10	1.96	0.14

Source: Field survey data.

2.3.2 Distribution of Households by Social groups, Occupations and Annual Household Income, etc.

The social group-wise classification indicates that at overall level, around 37 per cent each of total households belongs to general and other backward class group which together accounts for almost two third of total selected households (Table 2.9). While remaining households belongs to Scheduled Caste and Scheduled Tribe population. Across the land holder groups, other backward class group dominate the small and marginal land holder group, while the majority of households were from general category in case of very large land holder group and non-of the household was from weaker section.

Table 2.9: Distribution of households by Social Group across landholding categories

Landholding categories	Social group (percentage to total number of households)				
	Gen	OBC	SC	ST	total
Marginal	26.35	40.32	17.14	16.19	100.00
Small	37.66	38.49	9.21	14.64	100.00
Medium	50.00	31.41	6.41	12.18	100.00
Large	55.26	27.63	6.58	10.53	100.00
Very large	71.43	28.57	0.00	0.00	100.00
Total	37.88	36.63	11.38	14.13	100.00

Source: Field survey data.

The distribution of households by principal occupation across landholding categories indicate that at overall level, more than 94 per cent of households had the agriculture as a principal occupation (Table 2.10). Few of the households from the marginal and small land holders group were self-employed while few had salaried employment as principle occupation.

Table 2.10: Distribution of households by principal occupation across landholding categories

Landholding Categories	Principal Occupation(percentage to total number of households)								
	Cultivation	Agri. Lab	Dairy	Non-Agri. Lab	Self-Emp	Salaried Emp	Forestry	Others	Total
Marginal	90.48	0.32	1.27	0.00	4.44	3.49	0.00	0.00	100.0
Small	94.98	0.00	1.26	0.42	2.51	0.42	0.00	0.42	100.0
Medium	98.72	0.00	0.64	0.00	0.00	0.64	0.00	0.00	100.0
Large	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.0
Very Large	92.86	0.00	7.14	0.00	0.00	0.00	0.00	0.00	100.0
Total	94.38	0.13	1.13	0.13	2.50	1.63	0.00	0.13	100.0

Source: Field survey data.

The annual household income from various sources across the land holdings category indicate that majority of the income was from the crop cultivation followed by the income from the wage labour (Table 2.11). Income from the wage labour was the prominent source of income for the marginal and small land holder which confirm the

Table 2.11: Annual household income from various sources across the landholding categories (in Rs)

Landholding categories	Net income from cultivation (Rs)	Net income from animal husbandry (Rs)	Income from wage labour (Rs)	Total (Rs.)
Marginal	636231	-235179	11735808	12136860
Small	3523341	-14299	9799264	13308306
Medium	13476047	38669	6990250	20504966
Large	11889961	124310	4235229	16249500
Very Large	4678111	759680	825680	6263471
Total	34203690	673181	33709861	68586732

Source: Field survey data.

2.3.3 Livestock and Fixed Capital (machinery) Endowments

The distribution of households by livestock possession across landholding categories is presented in Table 2.12. The livestock and fixed capital endowment with selected households indicate that more than two fifth of total households had milch buffaloes, around three fifth of the household possessed milch cows, and about 15 per cent households had bullock. Except few marginal households, none of the households possess small ruminants like goats and sheep as well as commercial poultry farm.

Table 2.12: Distribution of households by livestock possession across landholding categories (%)

Landholding Categories	Households Owning Livestock (Percentage of Total number households)					
	Milch Cows	Milch Buffaloes	Bullock	Goats	Sheep	Poultry
Marginal	21.59	32.06	6.67	0.00	0.32	0.00
Small	34.31	48.12	15.90	0.00	0.00	0.00
Medium	41.03	48.08	25.00	0.00	0.00	0.00
Large	38.16	63.16	22.37	0.00	0.00	0.00
Very Large	50.00	35.71	14.29	0.00	0.00	0.00
Total	31.25	43.00	14.63	0.00	0.13	0.00

Note: Some households have more than one type of animal, thus total livestock would be more than 100 per cent.
Source: Field survey data.

The distribution of households by farm machinery/equipment possession across landholding categories presented in table 2.13 indicate that 59 per cent of total households has borewell followed by about 25 per cent households has tube-wells as source of irrigation with about 55 per cent has electric pumps and 12 per cent has diesel pumps. One fourth of total households possess tractor while very few households had thresher. Except few large households, none of other households has combine harvester.

Table 2.13: Distribution of households by Farm Machinery/Equipment Possession across Landholding Categories

Landholding categories	Households having farm machinery/equip (purchased/shared/taken on rent) (Percentage of HHs)								
	Tube-wells	Bore-well	electric pump	diesel pump	bullock cart	tractor	thresher	combine harvester	Others
Marginal	21.27	43.17	34.92	9.84	1.90	7.30	0.95	0.00	0.00
Small	19.67	66.95	62.34	12.55	9.62	19.25	2.09	0.00	0.00
Medium	33.33	73.08	73.08	14.74	17.31	41.67	11.54	0.00	0.00
Large	28.95	68.42	68.42	13.16	18.42	68.42	13.16	1.32	2.63
Very Large	35.71	71.43	71.43	14.29	14.29	85.71	50.00	0.00	0.00
Total	24.13	59.00	54.38	12.00	9.00	24.75	5.38	0.13	0.25

Note: Some households have more than one type of farm machinery, thus total livestock would be more than 100 per cent.
Source: Field survey data.

2.4 Chapter Summary

The chapter presented the overview of the study region. The state of Gujarat is one of the fast progressing state having impressive agricultural growth rates in the recent past, which was mainly because of well-focused and meticulous planning and execution of programmes for improvement of irrigation, quality of seeds and power as well as for subsidiary sectors like animal husbandry. The state is divided in to eight agro-climatic zones. The Per Capita Income at current prices in the State was estimated 1.46 times higher than all India average. From the field survey data, it was observed that selected villages in North and Saurashtra regions were scattered and little bit far away from the town as well as from the nearest APMC market as compared to the selected villages in South and the Central Gujarat region. The highest distance to input and APMC markets was about 21 kilometres. The groundwater level was found very shallow in the South Gujarat

followed by the Central Gujarat and Saurashtra region and the highest depth of groundwater availability was in North Gujarat region. The average geographical area of the selected village is estimated to be around 1000 ha which has range of as low as 377 ha to 1627 ha geographical area coverage. Forest coverage was found only in village of Mahisagar district. Out of total agricultural households, almost 72 per cent of total households were from the group of marginal and small landholders. The average age of the farmers was estimated of 48.6 years. On an average, 44.6 per cent households belongs to general category group, followed by 34.7 per cent households from Other Backward Classes group while remaining were from Schedules Caste and Scheduled Tribe social category. The main occupation of households in selected villages was obvious agriculture includes crop cultivation and agriculture labour. Dairy activity was an important subsidiary activity reported in these villages. The buffaloes and cattle dominate the livestock while small ruminant like sheep and goat were reported in few villages. Tractor was only the common machinery found in all villages while few villagers possess threshers and one village reported to have harvester.

Almost 70 per cent of selected households were from marginal and small landholding size group (possessing land less than 2 ha) followed by almost two fifth of total households from medium size land holder category (having land between 2-4 ha). Most of the landholding was having irrigation facility except few parcels of large land holders group. Due to high coverage of land area under irrigation, leased-out tendency was found very rare while leased-in activity was profound among very large land holder group which may be due to availability of resources with this group as well as risk bearing capacity. The social group-wise classification indicates that at overall level, around 37 per cent each of total households belongs to general and other backward class group which together accounts for almost two third of total selected households. While remaining households belongs to Scheduled Caste and Scheduled Tribe population. At overall level, more than 94 per cent of households had the agriculture as a principal occupation. Few of the households from the marginal and small land holders group were self-employed while few had salaried employment as principle occupation. The annual household income from various sources across the land holdings category indicate that majority of the income was from the crop cultivation followed by the income from the wage labour. More than two fifth of

total households had milch buffaloes, around three fifth of the household possessed milch cows, and about 15 per cent households had bullock. Except few marginal households, none of the households possess small ruminants like goats and sheep as well as commercial poultry farm. About 59 per cent of total households had borewell followed by about 25 per cent households has tube-wells as source of irrigation with about 55 per cent has electric pumps and 12 per cent had diesel pumps. One fourth of total households possess tractor while very few households had thresher.

The details on crop and input markets are discussed in next chapter.

Chapter III
Crop and Input Markets

3.1 Introduction:

After having discussed about the study area and the socio-economic characteristics of the selected households, this chapter discuss about the crops grown by the selected households and parameters related to input markets.

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

As mentioned in earlier, all the crops grown by the selected households were listed and were coded for the data analysis purpose (see Table 1.3 in Chapter 1). The distribution of households growing different crops presented in Table 3.1 shows that total 800 selected households had grown variety of crops during three seasons (kharif, rabi & summer) in the year under study and the major crops grown were paddy, cotton, wheat, groundnut and fodder crops.

Table 3.1: Distribution of households growing different crops

(No. of households)

	Distribution of households growing different crops					
Crop Code	Marginal	Small	Medium	Large	Very Large	Total
101	162	86	51	31	5	335
102	2	7	7			16
103	23	43	21	13	3	103
104	20	5	3	1		29
106	87	53	31	22	2	195
201	5		2	2		9
202	18	13	7	4		42
288	4	3	1			8
401	13	19	17	10	1	60
511		5	10	8	2	25
588	4	4	4	1	2	15
601	11	5	5	1		22
688	3	6	5	7	1	22
708		8	2	4	1	15
788	5	6	2	1		14
1001	20	58	48	23	7	156
1002	35	22	14	6		77
1003	3	14	14	5	1	37
1004	19	38	19	9	1	86
1101	43	71	77	30	9	230
1302	26	30	16	8	3	83
1401	3	9	5			17
1488	36	53	26	16	4	135
1702				1		1
1888	1			1		2
Grand Total	543	558	387	204	42	1734

The crop-wise average area under different crops across the landholdings categories presented in Table 3.2 indicate that average land covered under crop was relatively higher in case of tobacco growing farmers followed by sugarcane, groundnut and cotton growers. Across groups, marginal farmers covered maximum area under groundnut crop followed by tobacco, while all other preferred to cover maximum area under tobacco crop.

Table 3.2: Area under different crops across the landholding categories

	Area under different crops across the landholding categories (Av. Area in ha)					
Crop Code	Marginal	Small	Medium	Large	Very Large	Total
101	0.47	0.92	1.58	3.35	8.03	1.13
102	0.18	0.27	0.82			0.50
103	0.54	0.94	1.16	2.28	4.77	1.17
104	0.39	0.60	1.65	1.20		0.59
106	0.48	0.87	1.45	2.72	3.60	1.03
201	0.16		1.56	0.85		0.62
202	0.35	0.46	0.86	1.83		0.61
288	0.10	0.57	0.64			0.35
401	0.52	0.75	1.37	2.87	4.08	1.28
511		0.81	1.02	1.79	1.20	1.24
588	0.15	0.20	1.13	1.60	3.00	0.90
601	0.25	0.41	1.06	2.88		0.59
688	0.56	0.93	0.93	1.14	3.20	1.05
708		0.43	0.24	1.48	0.32	0.68
788	0.20	0.32	0.84	0.96		0.40
1001	0.60	0.69	1.12	1.91	4.12	1.14
1002	0.40	0.72	1.39	2.06		0.80
1003	0.28	0.65	1.01	1.48	5.50	1.00
1004	0.48	0.98	1.37	2.01	3.70	1.10
1101	0.59	1.07	1.78	3.66	9.43	1.88
1302	0.57	1.04	1.93	4.77	12.95	1.85
1401	0.40	0.69	0.61			0.62
1488	0.28	0.56	0.68	1.00	1.38	0.59
1702				1.00		1.00
1888	0.40			0.48		0.44

Source: Field survey data.

The yield level of crops grown by the selected households across landholding categories is presented in Table 3.3. Though the productivity is relative factor which depends on the area under crop and related parameters, comparison of same across landholding category indicate the mixed trend of productivity across land holder groups which was expected as the crops are specific to particular regions and while averaging at state level, it has high deviation among the yield level across landholding groups.

Table 3.3: Yield of different crops across the landholding categories

Crop code	Yield of different crops across the landholding categories (kg per ha)					
	Marginal	Small	Medium	Large	Very Large	Total
101	4115	4901	4957	4486	3416	4484
102	334	990	847			857
103	1783	1038	937	1023	1014	1087
104	1375	2081	827	1001		1314
106	2622	2748	2553	2329	2780	2554
201	488		847	518		697
202	574	663	357	246		450
288	167	529	375			439
401	15706	28646	35429	35893	13982	31491
511		2139	1229	729	367	1050
588	8674	3242	2657	112	250	1591
601	1269	2708	1706	6116		2751
688	4759	9468	9241	3885		5841
708		17198	15333	10811	10938	13191
788	8650	2502	5540	4170		4814
1001	1714	1465	1094	1584	1285	1370
1002	1697	1534	2753	1811		2011
1003	1184	579	594	491	1018	646
1004	1506	1021	1548	1499	1081	1314
1101	2416	1373	1881	1298	1010	1505
1302	2442	2355	3004	2413	2152	2456
1401	2752	1014	1428			1333
1488	20898	11002	13778	9767	10562	12607
1702				240		240
1888	1500			12510		7503

Source: Field survey data.

Box 3.1: Number of farmers whose reported crop failure due to some reason

Crop	Number of farmers whose reported crop failure due to some reason					
	Marginal	Small	Medium	Large	Very large	Total
101	0	0	1	0	0	1
102	0	0	1	0	0	1
103	1	3	1	0	0	5
104	3	1	1	0	0	5
202	2	0	2	0	0	4
288	2	0	0	0	0	2
401	0	1	2	0	0	3
601	0	0	0	0	0	0
688	0	0	0	1	0	1
788	0	0	0	0	0	0
1001	0	0	0	0	0	0
1003	0	1	0	0	0	1
1004	0	1	0	0	0	1
1101	1	0	0	0	0	1
1488	1	2	0	0	0	3
Total	10	9	8	1	0	28

Reasons: First stage of cultivation on farm - 20 farmers; Excess rain or flood crop was fail - 18 farmers & Crop was fail due to disease - 8 farmers.

Besides, while comparing the productivity across the land holder groups, one of the reasons for high deviation among these groups was some of the farmers have reported the failure of crop during the agriculture year under study (Box 3.1). In total, loss was mostly experienced by the marginal and small group of farmers. It was reported that on first stage of cultivation, 20 farmers have reported failure, while excess of rain or flood like situation has ravages the crop of 18 farmers. Due to heavy attack of pest and diseases, crop sown of 8 farmers was destroyed.

3.3 Value of the Output and Marketed Surplus:

The selected farmers have reported the average value of crops produced per household (by taking into account prevailing market rate for total quantity produced on the farm) and same is reported in Tables 3.4 and 3.5, while total sale value of crop produced (actual quantity sold) is presented in Tables 3.6 and 3.7.

Table 3.4: Average Value of Total Crop Produced

	Average Value of Total Crop Produced (Rs. per household)					
Crops	Marginal	Small	Medium	Large	Very Large	Total
101	42204	91004	160272	317177	600560	106485
102	1700	7686	20043			12344
103	21278	25027	29894	63325	134250	33197
104	8823	20492	23400	20400		12742
106	23110	42509	66989	120342	167000	47804
201	5090		70240	22300		23392
202	10956	18443	19164	25988		16073
288	1088	15617	8300			7438
401	13701	47636	112265	217094	160200	88714
511		239280	173980	183086	63400	181108
588	57625	33675	167750	17100	63500	78687
601	12727	44160	72000	704000		64764
688	75667	98279	152940	169571	0	125835
708		41948	15208	55925	23250	40863
788	28015	8183	86938	42500		28968
1001	53712	56163	67058	155482	323874	85857
1002	33316	56987	191338	197237		81583
1003	23467	14820	25032	33005	201600	26891
1004	24020	33589	71534	87974	143000	47263
1101	65468	77015	169344	247201	501664	144581
1302	71103	128710	317638	665000	1669667	254472
1401	53533	33094	42300			39409
1488	20331	21497	30771	33919	47525	25215
1702				15600		15600
1888	24000			180000		102000
Grand Total	35003	57016	112969	188592	392919	86258

Note: Total value of produced is estimated at prevailing market rate.
Source: Field survey data.

The sale value of produce is value of produce which is actually sold in the market which does not take into account quantity of particular commodity kept for home consumption, as seed or feed or retained at home for any other purpose. Out of the total quantity produced, around 15 per cent was reported unsold or kept at home and 85 per cent produced was sold. Across land holding groups, it was observed that lower the land holding size more the share of total produce retained at home, may be due to less marketable surplus with marginal and small land holders.

Table 3.5: Average Value of Total Crop Produced (Rs. per ha)

Crops	Average Value of Total Crop Produced (Rs. per ha)					
	Marginal	Small	Medium	Large	Very Large	Total
101	42204	91004	160272	317177	600560	106485
102	1700	7686	20043	-	-	12344
103	21278	25027	29894	63325	134250	33197
104	8823	20492	23400	20400	-	12742
106	23110	42509	66989	120342	167000	47804
201	5090	-	70240	22300	-	23392
202	10956	18443	19164	25988	-	16073
288	1088	15617	8300	-	-	7438
401	13701	47636	112265	217094	160200	88714
511	-	239280	173980	183086	63400	181108
588	57625	33675	167750	17100	63500	78687
601	12727	44160	72000	704000	-	64764
688	75667	98279	152940	169571	0	125835
708	-	41948	15208	55925	23250	40863
788	28015	8183	86938	42500	-	28968
1001	53712	56163	67058	155482	323874	85857
1002	33316	56987	191338	197237	-	81583
1003	23467	14820	25032	33005	201600	26891
1004	24020	32705	75299	87974	143000	47263
1101	65468	77015	169344	247201	501664	144581
1302	71103	128710	317638	665000	1669667	254472
1401	53533	33094	42300	-	-	39409
1488	20331	21497	30771	33919	47525	25215
1702	-	-	-	15600	-	15600
1888	24000	-	-	180000	-	102000
Grand Total	35003	56914	113261	188592	392919	86258

Note: Total value of produced is estimated at prevailing market rate.
Source: Field survey data.

Table 3.6: Crop-wise Total Sale Value of Crops

	Crop-wise total sale value of crops (in Rs)					
Crops code	Marginal	Small	Medium	Large	Very Large	Total
101	4600095	6237910	6769081	8388921	2393800	28389807
102	1600	27000	92200			120800
103	96900	106700	68850	39375		311825
104	126135	90000	67400	17000		300535
106	1115790	1528590	1642025	1732965	227500	6246870
201	24200		123480	43600		191280
202	154875	186460	106750	62000		510085
288		45000	8100			53100
401	168592	890090	1801002	2153940	148200	5161823
511		1085700	1533800	1347090	126800	4093390
588	230500	134700	455600	17100	127000	964900
601	100000	220800	360000	704000		1384800
688	225000	589677	726200	1187000		2727877
708		311280	25416	216500	22750	575946
788	130375	43600	170875	40000		384850
1001	819181	2502470	2523250	2918512	1834280	10597693
1002	1079950	1127620	2544735	1120820		5873125
1003	66400	190700	315920	158100	196000	927120
1004	448230	1230607	1428068	791770	143000	4041674
1101	2723195	5230227	12797627	7267956	4457250	32476255
1302	1845675	3673300	5027210	5320000	5009000	20875185
1401	153600	272250	203600			629450
1488	294325	363910	32200	34667	20000	745102
1702				15600		15600
1888	24000					24000
Grand Total	14428618	26088590	38823389	33576915	14705580	127623092

Source: Field survey data.

Table 3.7: Crop-wise Total Sale Value of Crops (in Rs per hh)

Crops code	Crop-wise Total Sale Value of Crops (in Rs per hh)					
	Marginal	Small	Medium	Large	Very Large	Total
101	28396	72534	132727	270610	478760	84746
102	800	3857	13171	-	-	7550
103	4213	2481	3279	3029	0	3027
104	6307	18000	22467	17000	-	10363
106	12825	28841	52969	78771	113750	32035
201	4840	-	61740	21800	-	21253
202	8604	14343	15250	15500	-	12145
288	0	15000	8100	-	-	6638
401	12969	46847	105941	215394	148200	86030
511	-	217140	133380	193386	63400	163736
588	57625	33675	113900	17100	63500	64327
601	9091	44160	72000	704000	-	62945
688	75000	98279	145240	169571	0	123994
708	-	38910	12708	54125	22750	38396
788	26075	7267	85438	40000	-	27489
1001	40959	43146	52568	126892	262040	67934
1002	30856	51255	181767	186803	-	76274
1003	22133	13621	22566	31620	196000	25057
1004	23591	32384	75161	87974	143000	46996
1101	63330	73665	166203	242265	495250	141201
1302	70988	122443	314201	665000	1669667	251508
1401	51200	30250	40720	-	-	37026
1488	8176	6866	1238	2167	5000	5519
1702	-	-	-	15600	-	15600
1888	24000	-	-	0	-	12000
Grand Total	26572	46754	99802	165573	350133	73600

Source: Field survey data.

The details on agency-wise sale reported by the selected households (first to three sale attempts) is presented in Table 3.8 and crop-wise agency-wise sale was estimated and presented in Table 3.9. It can be seen from the table 3.8 that majority of the portion of the quantity produced was sold during the first attempt only (96.5 per cent) that to majority of sale was made to local private trader followed by sale in the nearby mandi. The other agencies which had very low share were input dealers, cooperative government agency and processors. At overall level, out of the total attempts made by the selected households to sale all commodities produced by them, almost three fifth of total was sold to local private trader/place, followed by the one fourth of total sale to nearby mandi, 8.5 per cent to processor, 4.6 per cent to cooperative and government agency and remaining

2.6 per cent to input dealers. While across groups, highest share of farmers from marginal and small group sold their produce to local private traders and the lowest in local mandi, indicate distress sale of produce by this vulnerable section of farming community.

Table 3.8: Agency through which reported crops were sold

Landholding categories	Agency through which reported crops were sold (Percentage)						
	Local Pvt	Mandi	Input dealers	Cooperative & Govt. Agency	Processors\	Others	total
First Disposal							
Marginal	67.5	17.9	1.9	6.9	4.8	0.0	99.0
Small	58.0	24.3	2.8	3.7	8.1	0.0	96.9
Medium	51.7	27.6	3.5	3.8	7.6	0.0	94.2
Large	51.9	30.4	2.2	2.8	5.5	0.6	93.4
Very Large	52.8	33.3	0.0	5.6	2.8	0.0	94.4
Total	58.4	24.2	2.6	4.6	6.5	0.1	96.4
Second Disposal							
Marginal	0.0	0.7	0.0	0.0	0.2	0.0	1.0
Small	0.7	0.2	0.0	0.0	1.3	0.0	2.2
Medium	0.3	1.7	0.0	0.0	2.3	0.0	4.4
Large	1.7	2.2	0.0	0.0	1.7	0.0	5.5
Very Large	5.6	0.0	0.0	0.0	0.0	0.0	5.6
Total	0.6	1.0	0.0	0.0	1.3	0.0	2.9
Third Disposal							
Marginal	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Small	0.0	0.2	0.0	0.0	0.7	0.0	0.9
Medium	0.0	0.0	0.0	0.0	1.5	0.0	1.5
Large	0.0	0.0	0.0	0.0	1.1	0.0	1.1
Very Large	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.1	0.0	0.0	0.7	0.0	0.8
ALL							
Marginal	67.5	18.6	1.9	6.9	5.0	0.0	100.0
Small	58.6	24.7	2.8	3.7	10.1	0.0	100.0
Medium	52.0	29.4	3.5	3.8	11.3	0.0	100.0
Large	53.6	32.6	2.2	2.8	8.3	0.6	100.0
Very Large	58.3	33.3	0.0	5.6	2.8	0.0	100.0
Total	59.0	25.3	2.6	4.6	8.5	0.1	100.0

Source: Field survey data.

The commodity-wise agency-wise sale also reflect the same picture as presented in Tables 3.9 a-c. While in case of oilseed crops, sale was reported to the processor. The small farmers reported sale of sugarcane harvest to large farmers in same village while some farmers had sold same to some the private jiggery preparation units in village and in nearby mandi to sugarcane juice units.

Table 3.9a: Crop wise agency through which reported crops were sold in first disposal

(Percentage)

Crop Code	Marginal Farmers							Small Farmers						
	Local Pvt	Mandi	Input Dealers	Cooperative & Govt Agency	Processors	Others	Total	Local Pvt	Mandi	Input Dealers	Cooperative & Govt Agency	Processors	Others	Total
101	41.2	48.0	34.8	75.0	50.0	-	43.9	26.7	28.0	26.1	25.0	50.0		27.0
102	0.0	33.3	-	-	-	-	14.3	25.0	0.0	-	-	-		14.3
103	37.5	0.0	-	-	0.0	-	31.6	25.0	100.0	-	-	0.0		31.6
104	73.7	100.0	-	-	-	-	77.3	10.5	0.0	-	-	-		9.1
106	42.0	42.9	0.0	-	-	-	41.1	28.6	14.3	66.7	-	-		28.7
201	0.0	75.0	0.0	100.0	-	-	55.6	0.0	0.0	0.0	0.0	-		0.0
202	46.2	33.3	-	100.0	-	-	43.2	30.8	38.1	-	0.0	-		32.4
288	0.0	0.0	-	-	-	-	0.0	100.0	50.0	-	-	-		66.7
401	29.0	20.0	0.0	-	0.0	-	22.8	35.5	25.0	20.0	-	100.0		31.6
511	0.0	0.0	-	-	0.0	0.0	0.0	18.2	16.7	-	-	100.0		20.0
588	28.6	0.0	-	0.0	40.0	-	26.7	28.6	0.0	-	0.0	40.0		26.7
601	14.3	-	-	-	0.0	-	11.1	42.9	-	-	-	50.0		44.4
688	11.1	28.6	-	-	-	-	18.8	44.4	14.3	-	-	-		31.3
708	0.0	0.0	-	0.0	0.0	-	0.0	66.7	57.1	-	0.0	0.0		53.3
788	42.9	0.0	-	-	50.0	-	41.7	28.6	100.0	-	-	50.0		41.7
1001	9.8	10.9	-	14.3	16.0	-	11.6	42.6	28.1	-	42.9	32.0		35.4
1002	52.3	0.0	0.0	33.3	-	-	45.5	23.1	40.0	100.0	33.3	-		28.6
1003	0.0	4.5	-	50.0	14.3	-	8.3	60.0	36.4	-	0.0	28.6		36.1
1004	15.6	24.1	-	44.4	20.0	-	21.6	44.4	37.9	-	22.2	60.0		40.9
1101	22.3	12.5	-	9.1	12.1	-	15.7	23.4	31.3	-	27.3	24.2		26.6
1302	28.0	33.3	-	75.0	100.0	-	31.3	36.0	66.7	-	25.0	0.0		36.1
1401	20.0	0.0	-	-	0.0	-	17.6	53.3	100.0	-	-	0.0		52.9
1488	42.9	-	-	-	-	-	42.9	40.8	-	-	-	-		40.8
1702	-	0.0	-	-	-	-	0.0	-	0.0	-	-	-		0.0
1888	100.0	-	-	-	-	-	100.0	0.0	-	-	-	-		0.0
Total	33.4	20.7	21.6	43.9	16.4	0.0	28.9	31.3	30.6	35.1	25.8	30.3	0.0	30.8

Source: Field survey data.

Table 3.9a..continues..

Crop Code	**Medium farmers**							**Large farmers**						
	Local Pvt	Mandi	Input Dealers	Cooperative& Govt Agency	Processors	Others	Total	Local Pvt	Mandi	Input Dealers	Cooperative & Govt Agency	Processors	Others	Total
101	16.6	14.0	30.4	0.0	0.0	-	16.2	12.8	10.0	8.7	0.0	0.0	-	11.2
102	75.0	66.7	-	-	-	-	71.4	0.0	0.0	-	-	-	-	0.0
103	25.0	0.0	-	-	100.0	-	26.3	12.5	0.0	-	-	0.0	-	10.5
104	10.5	0.0	-	-	-	-	9.1	5.3	0.0	-	-	-	-	4.5
106	17.6	0.0	33.3	-	-	-	17.1	10.9	42.9	0.0	-	-	-	12.4
201	0.0	0.0	100.0	0.0	-	-	22.2	100.0	25.0	0.0	0.0	-	-	22.2
202	15.4	14.3	-	0.0	-	-	13.5	7.7	14.3	-	0.0	-	-	10.8
288	0.0	50.0	-	-	-	-	33.3	0.0	0.0	-	-	-	-	0.0
401	19.4	35.0	40.0	-	0.0	-	26.3	12.9	20.0	40.0	-	0.0	-	17.5
511	54.5	33.3	-	-	0.0	0.0	40.0	18.2	41.7	-	-	0.0	100	32.0
588	28.6	0.0	-	100.0	20.0	-	26.7	14.3	0.0	-	0.0	0.0	-	6.7
601	28.6	-	-	-	50.0	-	33.3	14.3	-	-	-	0.0	-	11.1
688	33.3	14.3	-	-	-	-	25.0	11.1	28.6	-	-	-	-	18.8
708	0.0	14.3	-	100.0	0.0	-	13.3	33.3	14.3	-	0.0	100.0	-	26.7
788	14.3	0.0	-	-	0.0	-	8.3	14.3	0.0	-	-	0.0	-	8.3
1001	26.2	34.4	-	35.7	20.0	-	29.3	11.5	18.8	-	0.0	16.0	-	14.0
1002	18.5	20.0	0.0	33.3	-	-	18.2	6.2	40.0	0.0	0.0	-	-	7.8
1003	40.0	40.9	-	0.0	42.9	-	38.9	0.0	13.6	-	50.0	14.3	-	13.9
1004	24.4	20.7	-	22.2	20.0	-	22.7	8.9	13.8	-	11.1	0.0	-	10.2
1101	31.9	32.3	-	27.3	19.7	-	28.8	14.9	9.4	-	27.3	6.1	-	11.2
1302	21.3	0.0	-	0.0	0.0	-	19.3	10.7	0.0	-	0.0	0.0	-	9.6
1401	26.7	0.0	-	-	100.0	-	29.4	0.0	0.0	-	-	0.0	-	0.0
1488	8.2	-	-	-	-	-	8.2	6.1	-	-	-	-	-	6.1
1702	-	0.0	-	-	-	-	0.0	-	50.0	-	-	-	-	50.0
1888	0.0	-	-	-	-	-	0.0	0.0	-	-	-	-	-	0.0
Total	21.0	26.2	32.4	19.7	21.3	0.0	22.5	11.1	15.2	10.8	7.6	8.2	100	11.8

Source: Field survey data.

Table 3.9a..continues..

(Percentage)

Crop Code	Very Large Farmers hh							ALL						
	Local Pvt	Mandi	Input Dealers	Cooperative& Govt Agency	Processors	Others	Total	Local Pvt	Mandi	Input Dealers	Cooperative & Govt Agency	Processors	Others	Total
101	2.7	0.0	0.0	0.0	0.0	-	1.8	100.0	100.0	100.0	100.0	100.0	100.0	-
102	0.0	0.0	-	-	-	-	0.0	100.0	100.0	100.0	-	-	-	-
103	0.0	0.0	-	-	0.0	-	0.0	100.0	100.0	100.0	-	-	100.0	-
104	0.0	0.0	-	-	-	-	0.0	100.0	100.0	100.0	-	-	-	-
106	0.8	0.0	0.0	-	-	-	0.8	100.0	100.0	100.0	100.0	-	-	-
201	0.0	0.0	0.0	0.0	-	-	0.0	100.0	100.0	100.0	100.0	100.0	-	-
202	0.0	0.0	-	0.0	-	-	0.0	100.0	100.0	100.0	-	100.0	-	-
288	0.0	0.0	-	-	-	-	0.0	100.0	100.0	100.0	-	-	-	-
401	3.2	0.0	0.0	-	0.0	-	1.8	100.0	100.0	100.0	100.0	-	100.0	-
511	9.1	8.3	-	-	0.0	0.0	8.0	100.0	100.0	100.0	-	-	100.0	100.0
588	0.0	100.0	-	0.0	0.0	-	13.3	100.0	100.0	100.0	-	100.0	100.0	-
601	0.0	-	-	-	0.0	-	0.0	100.0	100.0	-	-	-	100.0	-
688	0.0	0.0	-	-	-	-	0.0	93.8	100.0	85.7	-	-	-	-
708	0.0	14.3	-	0.0	0.0	-	6.7	100.0	100.0	100.0	-	100.0	100.0	-
788	0.0	0.0	-	-	0.0	-	0.0	100.0	100.0	100.0	-	-	100.0	-
1001	4.9	3.1	-	7.1	4.0	-	4.3	94.5	95.1	95.3	-	100.0	88.0	-
1002	0.0	0.0	0.0	0.0	-	-	0.0	100.0	100.0	100.0	100.0	100.0	-	-
1003	0.0	4.5	-	0.0	0.0	-	2.8	100.0	100.0	100.0	-	100.0	100.0	-
1004	2.2	0.0	-	0.0	0.0	-	1.1	96.6	95.6	96.6	-	100.0	100.0	-
1101	3.2	5.2	-	9.1	0.0	-	3.4	85.8	95.7	90.6	-	100.0	62.1	-
1302	4.0	0.0	-	0.0	0.0	-	3.6	100.0	100.0	100.0	-	100.0	100.0	-
1401	0.0	0.0	-	-	0.0	-	0.0	100.0	100.0	100.0	-	-	100.0	-
1488	2.0	-	-	-	-	-	2.0	100.0	100.0	-	-	-	-	-
1702	-	0.0	-	-	-	-	0.0	50.0	-	50.0	-	-	-	-
1888	0.0	-	-	-	-	-	0.0	100.0	100.0	-	-	-	-	-
Total	2.2	3.3	0.0	3.0	0.8	0.0	2.4	96.4	98.9	95.9	100.0	100.0	77.0	100.0

Table 3.9b: Crop wise agency through which reported crops were sold in second disposal

(Percentage)

Crop Code	Marginal							Small						
	Local Pvt	Mandi	Input Dealers	Cooperative & Govt Agenc	Processors	Others	Total	Local Pvt	Mandi	Input Dealers	Cooperative & Govt Agenc	Processors	Others	Total
688	0.0	14.3	-	-	-	-	6.3	0.0	0.0	-	-	-	-	0.0
1001	0.0	0.0	-	0.0	0.0	-	0.0	1.6	0.0	-	0.0	4.0	-	1.2
1004	0.0	0.0	-	-	0.0	-	0.0	28.6	0.0	-	-	0.0	-	16.7
1101	0.0	2.1	-	0.0	1.5	-	1.1	0.0	1.0	-	0.0	7.6	-	2.2
1702	-	0.0	-	-	-	-	0.0	-	0.0	-	-	-	-	0.0
Total	0.0	0.8	0.0	0.0	0.8	0.0	0.3	0.4	0.3	0.0	0.0	4.9	0.0	0.7

Crop Code	Medium							Large						
	local pvt	mandi	input dealers	cooperative&govt agency	processors	Others	total	local pvt	mandi	input dealers	cooperative&govt agency	processors	Others	total
688	0.0	0.0	-	-	-	-	0.0	0.0	0.0	-	-	-	-	0.0
1001	0.0	3.1	-	0.0	0.0	-	1.2	1.6	1.6	-	0.0	8.0	-	2.4
1004	0.0	0.0	-	-	0.0	-	0.0	0.0	100.0	-	-	0.0	-	8.3
1101	1.1	4.2	-	0.0	12.1	-	4.9	2.1	1.0	-	0.0	1.5	-	1.5
1702	-	0.0	-	-	-	-	0.0	-	50.0	-	-	-	-	50.0
Total	0.1	1.7	0.0	0.0	6.6	0.0	1.0	0.4	1.1	0.0	0.0	2.5	0.0	0.7

Crop Code	Very large							ALL						
	local pvt	mandi	input dealers	cooperative&govt agency	processors	Others	total	local pvt	mandi	input dealers	cooperative&govt agency	processors	Others	total
688	0.0	0.0	-	-	-	-	0.0	6.3	0.0	14.3	-	-	-	-
1001	1.6	0.0	-	0.0	0.0	-	0.6	5.5	4.9	4.7	-	0.0	12.0	-
1004	0.0	0.0	-	-	0.0	-	0.0	25.0	28.6	100.0	-	-	0.0	-
1101	1.1	0.0	-	0.0	0.0	-	0.4	10.1	4.3	8.3	-	0.0	22.7	-
1702	-	0.0	-	-	-	-	0.0	50.0	-	50.0	-	-	-	-
Total	0.2	0.0	0.0	0.0	0.0	0.0	0.1	2.9	1.1	3.9	0.0	0.0	14.8	0.0

Source: Field survey data.

Table 3.9c: Crop wise agency through which reported crops were sold in third disposal

(Percentage)

Crop Code	Marginal							Small						
	Local Pvt	Mandi	Input Dealers	Cooperative & Govt Agency	Processors	Others	Total	Local Pvt	Mandi	Input Dealers	Cooperative & Govt Agency	Processors	Others	Total
1101	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	1.1	0.0	0.0	4.5	-	1.5
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	2.5	0.0	0.3

Crop Code	Medium							Large						
	Local Pvt	Mandi	Input Dealers	Cooperative & Govt Agency	Processors	Others	Total	Local Pvt	Mandi	Input Dealers	Cooperative & Govt Agency	Processors	Others	Total
1101	0.0	0.0	0.0	0.0	7.5	-	1.9	0.0	0.0	0.0	0.0	3.0	-	0.8
Total	0.0	0.0	0.0	0.0	4.1	0.0	0.3	0.0	0.0	0.0	0.0	1.6	0.0	0.1

Crop Code	Very large							ALL						
	Local Pvt	Mandi	Input Dealers	Cooperative & Govt Agency	Processors	Others	Total	Local Pvt	Mandi	Input Dealers	Cooperative & Govt Agency	Processors	Others	Total
1101	0.0	0.0	0.0	0.0	0.0	-	0.0	4.1	0.0	1.1	0.0	0.0	14.9	-
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.3	0.0	0.0	8.2	0.0

Notes: Percentage share of each sale to respective commodity total sale; Total sale under each agency to total sale of all commodity.
Source: Field survey data.

The reasons for dissatisfaction regarding (first/second/third) disposal of reported crops as opined by the selected households are presented in Table 3.10. At overall level, more than 98 per cent of the selected households were unsatisfied with sale of crops due to receipt of lower rate than market, followed by delayed payments, deductions for loans borrowed and faulty weighing and grading. The crop-wise reasons for dissatisfaction regarding first, second and third disposal are presented in Tables 3.11a-c which repeat the same results.

Table 3.10: Reasons for dissatisfaction regarding first/second/third major disposal of reported crops

Landholding Categories	Reasons for dissatisfaction (Percentage)					
	Lower Than Market Price	Delayed Payments	Deductions For Loans Borrowed	Faulty Weighing & Grading	Others	Total
First Disposal						
Marginal	100.0	99.1	100.0	100.0	100.0	99.3
Small	96.7	96.8	100.0	100.0	100.0	96.9
Medium	100.0	93.1	100.0	85.7	100.0	94.2
Large	100.0	91.8	100.0	100.0	-	93.4
Very Large	100.0	93.3	-	-	-	94.4
Total	98.7	95.9	100.0	95.0	100.0	96.4
Second Disposal						
Marginal	0.0	0.9	0.0	0.0	0.0	0.7
Small	2.2	2.3	0.0	0.0	0.0	2.2
Medium	0.0	5.1	0.0	14.3	0.0	4.4
Large	0.0	6.8	0.0	0.0	-	5.5
Very Large	0.0	6.7	-	-	-	5.6
Total	0.9	3.2	0.0	5.0	0.0	2.8
Third Disposal						
Marginal	0.0	0.0	0.0	0.0	0.0	0.0
Small	1.1	0.9	0.0	0.0	0.0	0.9
Medium	0.0	1.8	0.0	0.0	0.0	1.5
Large	0.0	1.4	0.0	0.0	-	1.1
Very Large	0.0	0.0	-	-	-	0.0
Total	0.4	0.9	0.0	0.0	0.0	0.8
ALL						
Marginal	100.0	100.0	100.0	100.0	100.0	100.0
Small	100.0	100.0	100.0	100.0	100.0	100.0
Medium	100.0	100.0	100.0	100.0	100.0	100.0
Large	100.0	100.0	100.0	100.0	-	100.0
Very Large	100.0	100.0	-	-	-	100.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Field survey data.

Table 3.10a: Crop-wise reasons for dissatisfaction regarding first disposal
(Percentage)

First Disposal

Crop Code	Marginal						Small					
	Lower Than Market Price	Delayed Payments	Deductions For Loans Borrowed	Faulty Weighing & Grading	Others	Total	Lower Than Market Price	Delayed Payments	Deductions For Loans Borrowed	Faulty Weighing & Grading	Others	Total
101	50.0	43.7	22.2	75.0	-	43.9	32.0	26.2	22.2	25.0	-	27.0
102	0.0	25.0	-	-	-	14.3	33.3	0.0	-	-	-	14.3
103	0.0	35.7	-	50.0	-	31.6	33.3	35.7	-	0.0	-	31.6
104	0.0	84.2	-	-	100.0	77.3	50.0	5.3	-	-	0.0	9.1
106	42.1	40.8	0.0	50.0	66.7	41.1	36.8	28.2	0.0	50.0	0.0	28.7
201	-	62.5	0.0	-	-	55.6	-	0.0	0.0	-	-	0.0
202	20.0	46.9	-	-	-	43.2	40.0	31.3	-	-	-	32.4
288	0.0	0.0	-	-	-	0.0	100.0	50.0	-	-	-	66.7
401	33.3	22.7	0.0	-	-	22.8	11.1	34.1	50.0	-	-	31.6
511	0.0	0.0	0.0	-	-	0.0	25.0	20.0	0.0	-	-	20.0
588	0.0	33.3	-	-	-	26.7	66.7	16.7	-	-	-	26.7
601	33.3	0.0	0.0	-	-	11.1	33.3	40.0	100.0	-	-	44.4
688	0.0	21.4	-	-	-	18.8	50.0	28.6	-	-	-	31.3
708	0.0	0.0	0.0	-	0.0	0.0	50.0	45.5	100.0	-	100.0	53.3
788	0.0	50.0	0.0	-	-	41.7	100.0	30.0	100.0	-	-	41.7
1001	11.1	11.9	-	0.0	-	11.6	44.4	33.3	-	50.0	-	35.4
1002	11.1	52.3	0.0	0.0	-	45.5	55.6	24.6	0.0	100.0	-	28.6
1003	33.3	6.1	-	-	-	8.3	33.3	36.4	-	-	-	36.1
1004	25.0	21.0	0.0	33.3	-	21.6	35.0	43.5	33.3	33.3	-	40.9
1101	14.3	16.3	-	0.0	25.0	16.9	34.3	25.8	-	0.0	50.0	28.5
1302	22.7	33.9	50.0	-	-	31.3	50.0	30.5	50.0	-	-	36.1
1401	66.7	8.3	0.0	-	-	17.6	33.3	58.3	50.0	-	-	52.9
1488	25.0	44.4	-	-	-	42.9	75.0	37.8	-	-	-	40.8
1702	-	0.0	-	-	-	0.0	-	0.0	-	-	-	0.0
1888	-	100.0	-	-	-	100.0	-	0.0	-	-	-	0.0
Total	26.5	29.8	13.2	30.0	44.4	28.9	38.7	29.3	31.6	25.0	33.3	30.8

Table 3.10a……

Crop Code	Medium						Large					
	Lower Than Market Price	Delayed Payments	Deductions For Loans Borrowed	Faulty Weighing & Grading	Others	Total	Lower Than Market Price	Delayed Payments	Deductions For Loans Borrowed	Faulty Weighing & Grading	Others	Total
101	4.0	18.0	33.3	0.0	-	16.2	12.0	10.2	22.2	0.0	-	11.2
102	66.7	75.0	-	-	-	71.4	0.0	0.0	-	-	-	0.0
103	33.3	28.6	-	0.0	-	26.3	33.3	0.0	-	50.0	-	10.5
104	0.0	10.5	-	-	0.0	9.1	50.0	0.0	-	-	0.0	4.5
106	5.3	18.4	50.0	0.0	33.3	17.1	15.8	11.7	50.0	0.0	0.0	12.4
201	-	12.5	100.0	-	-	22.2	-	25.0	0.0	-	-	22.2
202	20.0	12.5	-	-	-	13.5	20.0	9.4	-	-	-	10.8
288	0.0	50.0	-	-	-	33.3	0.0	0.0	-	-	-	0.0
401	33.3	25.0	25.0	-	-	26.3	22.2	15.9	25.0	-	-	17.5
511	75.0	30.0	100.0	-	-	40.0	0.0	40.0	0.0	-	-	32.0
588	33.3	25.0	-	-	-	26.7	0.0	8.3	-	-	-	6.7
601	0.0	60.0	0.0	-	-	33.3	33.3	0.0	0.0	-	-	11.1
688	50.0	21.4	-	-	-	25.0	0.0	21.4	-	-	-	18.8
708	50.0	9.1	0.0	-	0.0	13.3	0.0	36.4	0.0	-	0.0	26.7
788	0.0	10.0	0.0	-	-	8.3	0.0	10.0	0.0	-	-	8.3
1001	33.3	28.1	-	50.0	-	29.3	7.4	15.6	-	0.0	-	14.0
1002	22.2	16.9	50.0	0.0	-	18.2	11.1	6.2	50.0	0.0	-	7.8
1003	0.0	42.4	-	-	-	38.9	33.3	12.1	-	-	-	13.9
1004	40.0	16.1	66.7	0.0	-	22.7	0.0	12.9	0.0	33.3	-	10.2
1101	22.9	28.5	-	83.3	25.0	30.9	14.3	11.3	-	0.0	0.0	12.0
1302	9.1	23.7	0.0	-	-	19.3	9.1	10.2	0.0	-	-	9.6
1401	0.0	33.3	50.0	-	-	29.4	0.0	0.0	0.0	-	-	0.0
1488	0.0	8.9	-	-	-	8.2	0.0	6.7	-	-	-	6.1
1702	-	0.0	-	-	-	0.0	-	50.0	-	-	-	50.0
1888	-	0.0	-	-	-	0.0	-	0.0	-	-	-	0.0
Total	19.6	22.6	36.8	30.0	22.2	22.6	11.3	11.8	18.4	10.0	0.0	11.8

Table 3.10a……

Crop Code	Very large						All					
	Lower Than Market Price	Delayed Payments	Deductions For Loans Borrowed	Faulty Weighing & Grading	Others	Total	Lower Than Market Price	Delayed Payments	Deductions For Loans Borrowed	Faulty Weighing & Grading	Others	Total
101	2.0	1.9	0.0	0.0	-	1.8	100.0	100.0	100.0	100.0	100.0	-
102	0.0	0.0	-	-	-	0.0	100.0	100.0	100.0	-	-	-
103	0.0	0.0	-	0.0	-	0.0	100.0	100.0	100.0	-	100.0	-
104	0.0	0.0	-	-	0.0	0.0	100.0	100.0	100.0	-	-	100.0
106	0.0	1.0	0.0	0.0	0.0	0.8	100.0	100.0	100.0	100.0	100.0	100.0
201	-	0.0	0.0	-	-	0.0	100.0	-	100.0	100.0	-	-
202	0.0	0.0	-	-	-	0.0	100.0	100.0	100.0	-	-	-
288	0.0	0.0	-	-	-	0.0	100.0	100.0	100.0	-	-	-
401	0.0	2.3	0.0	-	-	1.8	100.0	100.0	100.0	100.0	-	-
511	0.0	10.0	0.0	-	-	8.0	100.0	100.0	100.0	100.0	-	-
588	0.0	16.7	-	-	-	13.3	100.0	100.0	100.0	-	-	-
601	0.0	0.0	0.0	-	-	0.0	100.0	100.0	100.0	100.0	-	-
688	0.0	0.0	-	-	-	0.0	100.0	100.0	92.9	-	-	-
708	0.0	9.1	0.0	-	0.0	6.7	100.0	100.0	100.0	100.0	-	100.0
788	0.0	0.0	0.0	-	-	0.0	100.0	100.0	100.0	100.0	-	-
1001	3.7	4.4	-	0.0	-	4.3	100.0	100.0	93.3	-	100.0	-
1002	0.0	0.0	0.0	0.0	-	0.0	100.0	100.0	100.0	100.0	100.0	-
1003	0.0	3.0	-	-	-	2.8	100.0	100.0	100.0	-	-	-
1004	0.0	1.6	0.0	0.0	-	1.1	100.0	100.0	95.2	100.0	100.0	-
1101	5.7	3.2	-	0.0	0.0	3.6	100.0	91.4	85.1	-	83.3	100.0
1302	9.1	1.7	0.0	-	-	3.6	100.0	100.0	100.0	100.0	-	-
1401	0.0	0.0	0.0	-	-	0.0	100.0	100.0	100.0	100.0	-	-
1488	0.0	2.2	-	-	-	2.0	100.0	100.0	100.0	-	-	-
1702	-	0.0	-	-	-	0.0	100.0	-	50.0	-	-	-
1888	-	0.0	-	-	-	0.0	100.0	-	100.0	-	-	-
Total	2.6	2.5	0.0	0.0	0.0	2.4	100.0	98.7	95.9	100.0	95.0	100.0

Source: Field survey data.

Table 3.10b: Crop-wise reasons for dissatisfaction regarding second disposal

Second Disposal

(Percentage)

Crop Code	Marginal						Small					
	Lower Than Market Price	Delayed Payments	Deductions For Loans Borrowed	Faulty Weighing & Grading	Others	Total	Lower Than Market Price	Delayed Payments	Deductions For Loans Borrowed	Faulty Weighing & Grading	Others	Total
688	0.0	7.1	-	-	-	6.3	0.0	0.0	-	-	-	0.0
1001	0.0	0.0	-	0.0	-	0.0	0.0	1.5	-	0.0	-	1.2
1004	0.0	0.0	0.0	0.0	-	0.0	0.0	3.2	0.0	0.0	-	2.3
1101	0.0	0.9	-	0.0	0.0	0.8	5.7	1.8	-	0.0	0.0	2.4
1702	-	0.0	-	-	-	0.0	-	0.0	-	-	-	0.0
Grand Total	0.0	0.3	0.0	0.0	0.0	0.2	0.9	0.7	0.0	0.0	0.0	0.7

Crop Code	Medium						Large					
	Lower Than Market Price	Delayed Payments	Deductions For Loans Borrowed	Faulty Weighing & Grading	Others	Total	Lower Than Market Price	Delayed Payments	Deductions For Loans Borrowed	Faulty Weighing & Grading	Others	Total
688	0.0	0.0	-	-	-	0.0	0.0	0.0	-	-	-	0.0
1001	0.0	1.5	-	0.0	-	1.2	0.0	3.0	-	0.0	-	2.4
1004	0.0	0.0	0.0	0.0	-	0.0	0.0	1.6	0.0	0.0	-	1.1
1101	0.0	5.4	-	16.7	0.0	5.2	0.0	1.8	-	0.0	0.0	1.6
1702	-	0.0	-	-	-	0.0	-	50.0	-	-	-	1.3
Grand Total	0.0	1.2	0.0	5.0	0.0	1.0	0.0	0.9	0.0	0.0	0.0	0.7

Crop Code	Very large						All					
	Lower Than Market Price	Delayed Payments	Deductions For Loans Borrowed	Faulty Weighing & Grading	Others	Total	Lower Than Market Price	Delayed Payments	Deductions For Loans Borrowed	Faulty Weighing & Grading	Others	Total
688		0.0	0.0	-	-	-	0.0	7.1	-	-	-	6.3
1001		3.7	0.0	-	0.0	-	0.0	6.7	-	0.0	-	5.5
1004		0.0	0.0	0.0	0.0	-	0.0	4.8	0.0	0.0	-	3.4
1101		2.9	0.0	-	0.0	25.0	5.7	10.4	-	16.7	0.0	10.4
1702		-	0.0	-	-	-	-	50.0	-	-	-	1.3
Grand Total		0.9	0.0	0.0	0.0	22.2	0.9	3.2	0.0	5.0	0.0	2.8

Source: Field survey data.

Table 3.10c: Crop-wise reasons for dissatisfaction regarding third disposal

(Percentage)

Third Disposal

Crop Code	Lower Than Market Price	Delayed Payments	Deductions For Loans Borrowed	Faulty Weighing & Grading	Others	Total	Lower Than Market Price	Delayed Payments	Deductions For Loans Borrowed	Faulty Weighing & Grading	Others	Total
Marginal							**Small**					
1101	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.3
Medium							**Large**					
1101	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.2	0.0	0.0	0.0	0.1
Very large							**All**					
1101	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.9	0.0	0.0	0.0	0.8

Source: Field survey data.

Out of the total four major reasons cited for dissatisfactions, one among them was low price received for the produce sold. While out of total crop growers, around 17.4 percent had opined that price was reasonable though it was lower than market price. It can be seen from the Table 3.11 that among the large land holdings group, more reasonability was reported about price received.

Table 3.11: Whether price received for the reported crops was reasonable

(Percentage of households)

Crops	Marginal	Small	Medium	Large	Very Large	Grand Total
101	20.5	33.3	17.8	38.7	80.0	26.6
102	0.0	100.0	40.0	-	-	42.9
103	16.7	16.7	40.0	0.0	-	21.1
104	5.9	50.0	0.0	100.0	-	13.6
106	7.5	16.2	22.7	37.5	100.0	17.1
201	20.0	-	0.0	100.0	-	33.3
202	31.3	50.0	20.0	100.0	-	43.2
288	-	50.0	0.0	-	-	33.3
401	23.1	33.3	33.3	50.0	0.0	33.3
511	-	0.0	0.0	12.5	0.0	4.0
588	0.0	25.0	25.0	0.0	0.0	13.3
601	100.0	0.0	0.0	100.0	-	22.2
688	0.0	20.0	0.0	33.3	-	13.3
708	-	12.5	0.0	0.0	0.0	6.7
788	0.0	0.0	0.0	100.0	-	8.3
1001	31.6	31.0	14.6	17.4	42.9	24.5
1002	11.4	18.2	28.6	50.0	-	19.5
1003	33.3	15.4	7.1	0.0	0.0	11.1
1004	26.3	19.4	25.0	22.2	0.0	22.4
1101	14.3	15.5	9.1	16.7	44.4	14.4
1302	26.9	23.3	25.0	25.0	66.7	26.5
1401	33.3	11.1	20.0	-	-	17.6
1488	66.7	55.0	50.0	100.0	100.0	63.3
1702	-	-	-	0.0	-	0.0
1888	100.0	-	-	-	-	100.0
Total	20.7	25.1	17.0	31.4	44.1	23.1

Source: Field survey data.

While the major reasons for unreasonable prices received for the reported crops were no minimum prices are fixed followed by very few buyers, no government purchase as such and presence of private buyers collude (Table 3.12).

Table 3.12: Reasons for unreasonable prices received for the reported crops

(Percentage)

Crop Codes	Marginal						Small					
	Very Few Buyers	No Government Purchase	Private Buyers Collude	No Minimum Fixed Price	All Of The Above	Total	Very Few Buyers	No Government Purchase	Private Buyers Collude	No Minimum Fixed Price	All Of The Above	Total
101	18.2	50.0	30.0	48.6	100.0	47.4	9.1	28.3	46.7	22.3	0.0	26.3
102	-	50.0	-	25.0	-	33.3	-	0.0	-	0.0	-	0.0
103	-	0.0	0.0	40.0	33.3	31.3	-	100.0	50.0	40.0	0.0	37.5
104	0.0	100.0	100.0	84.6	-	88.9	0.0	0.0	0.0	7.7	-	5.6
106	33.3	81.8	31.8	44.3	100.0	46.7	0.0	0.0	59.1	25.7	0.0	29.5
201	0.0	-	100.0	66.7	-	80.0	0.0	-	0.0	0.0	-	0.0
202	33.3	42.9	80.0	30.0	-	47.8	66.7	14.3	20.0	30.0	-	21.7
288	-	0.0	-	0.0	0.0	0.0	-	100.0	-	100.0	0.0	66.7
401	29.4	29.4	40.0	20.0	-	34.6	41.2	29.4	50.0	25.0	-	28.8
511	-	0.0	-	0.0	0.0	0.0	-	16.7	-	33.3	7.7	17.9
588	57.1	0.0	66.7	0.0	0.0	47.1	28.6	50.0	33.3	0.0	0.0	17.6
601	0.0	-	0.0	-	-	0.0	57.1	-	100.0	-	-	100.0
688	0.0	0.0	-	25.0	33.3	25.0	0.0	100.0	-	50.0	0.0	33.3
708	-	-	-	-	0.0	0.0	-	-	-	-	50.0	50.0
788	44.4	-	50.0	-	50.0	64.3	44.4	-	50.0	-	50.0	35.7
1001	50.0	0.0	-	7.7	11.2	11.0	50.0	50.0	-	30.8	34.8	33.9
1002	0.0	50.0	75.0	53.3	0.0	51.7	100.0	0.0	12.5	24.4	60.0	25.0
1003	-	0.0	-	4.2	14.3	6.3	-	100.0	-	33.3	28.6	34.4
1004	50.0	33.3	-	25.0	14.0	20.8	0.0	16.7	-	31.3	53.5	41.7
1101	16.7	80.0	33.3	22.4	14.3	19.2	33.3	0.0	33.3	24.1	34.9	30.6
1302	0.0	50.0	23.1	32.5	33.3	31.7	0.0	25.0	61.5	30.0	66.7	38.3
1401	0.0	50.0	0.0	25.0	0.0	22.2	66.7	0.0	100.0	50.0	50.0	44.4
1488	20.0	100.0	66.7	30.0	-	46.7	80.0	0.0	33.3	50.0	-	40.0
1702	-	-	-	-	0.0	0.0	-	-	-	-	0.0	0.0
1888	-	-	-	-	-	-	-	-	-	-	-	-
Total	24.7	44.0	41.3	36.8	13.4	32.5	40.0	24.0	46.3	26.1	35.8	30.4

Source: Field survey data.

Crop Codes	Medium						Large						Very large					
	Very Few Buyers	No Government Purchase	Private Buyers Collude	No Minimum Fixed Price	All Of The Above	Total	Very Few Buyers	No Government Purchase	Private Buyers Collude	No Minimum Fixed Price	All Of The Above	Total	Very Few Buyers	No Government Purchase	Private Buyers Collude	No Minimum Fixed Price	All Of The Above	Total
101	36.4	19.6	13.3	18.9	0.0	18.0	36.4	2.2	10.0	9.5	0.0	7.9	0.0	0.0	0.0	0.7	0.0	0.4
102	-	50.0	-	75.0	-	66.7	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0
103	-	0.0	50.0	10.0	33.3	18.8	-	0.0	0.0	10.0	33.3	12.5	-	0.0	0.0	0.0	0.0	0.0
104	100.0	0.0	0.0	7.7	-	5.6	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0
106	33.3	9.1	9.1	18.6	0.0	15.2	33.3	9.1	0.0	11.4	0.0	8.6	0.0	0.0	0.0	0.0	0.0	0.0
201	100.0	-	0.0	33.3	-	20.0	0.0	-	0.0	0.0	-	0.0	0.0	-	0.0	0.0	-	0.0
202	0.0	42.9	0.0	40.0	-	30.4	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0
288	-	0.0	-	0.0	100.0	33.3	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0
401	23.5	29.4	0.0	30.0	-	21.2	5.9	11.8	10.0	20.0	-	13.5	0.0	0.0	0.0	5.0	-	1.9
511	-	50.0	-	55.6	38.5	46.4	-	33.3	-	11.1	38.5	28.6	-	0.0	-	0.0	15.4	7.1
588	14.3	50.0	0.0	100.0	0.0	17.6	0.0	0.0	0.0	0.0	33.3	5.9	0.0	0.0	0.0	0.0	66.7	11.8
601	42.9	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0
688	100.0	0.0	-	25.0	33.3	25.0	0.0	0.0	-	0.0	33.3	16.7	0.0	0.0	-	0.0	0.0	0.0
708	-	-	-	-	14.3	14.3	-	-	-	-	28.6	28.6	-	-	-	-	7.1	7.1
788	11.1	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0
1001	0.0	50.0	-	46.2	32.6	35.6	0.0	0.0	-	11.5	18.0	16.1	0.0	0.0	-	3.8	3.4	3.4
1002	0.0	50.0	12.5	17.8	20.0	18.3	0.0	0.0	0.0	4.4	20.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
1003	-	0.0	-	45.8	28.6	40.6	-	0.0	-	12.5	28.6	15.6	-	0.0	-	4.2	0.0	3.1
1004	50.0	33.3	-	31.3	18.6	23.6	0.0	16.7	-	12.5	11.6	12.5	0.0	0.0	-	0.0	2.3	1.4
1101	50.0	20.0	33.3	46.6	30.2	34.7	0.0	0.0	0.0	5.2	17.5	13.0	0.0	0.0	0.0	1.7	3.2	2.6
1302	0.0	25.0	7.7	25.0	0.0	20.0	100.0	0.0	7.7	10.0	0.0	8.3	0.0	0.0	0.0	2.5	0.0	1.7
1401	33.3	50.0	0.0	25.0	50.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1488	0.0	0.0	0.0	20.0	-	13.3	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0
1702	-	-	-	-	0.0	0.0	-	-	-	-	100.0	100.0	-	-	-	-	0.0	0.0
1888	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	27.1	25.6	8.3	27.3	28.0	24.7	8.2	6.4	4.1	8.7	18.7	10.7	0.0	0.0	0.0	1.2	4.0	1.7

Source: Field survey data.

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

As mentioned earlier, as the crop cultivation is transferring from subsistence to commercialised farming, use of off-farm inputs have been increased to a large extent. It can be seen from the Table 3.13 that in most of the cases, off farm inputs were used on large scale which were purchased from the market or in few cases were borrowed from others. While less than 10 percent of households had used farm saved seed.

Table 3.13: Details of Seed used and its procurement channels

(Percent to total)

	Marginal					Small					Medium				
Seed / Crops code	Farm Saved	Exchange	Purchase	Borrowed	Others	Farm Saved	Exchange	Purchase	Borrowed	Others	Farm Saved	Exchange	Purchase	Borrowed	Others
101	6.2	0.0	93.2	0.6	0.0	0.0	0.0	100.0	0.0	0.0	2.0	0.0	94.1	3.9	0.0
102	100.0	0.0	0.0	0.0	0.0	14.3	0.0	71.4	0.0	0.0	42.9	0.0	71.4	0.0	0.0
103	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
104	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
106	8.0	0.0	90.8	1.1	0.0	3.8	0.0	96.2	0.0	0.0	6.5	3.2	90.3	0.0	0.0
201	40.0	0.0	60.0	0.0	0.0	-	-	-	-	-	0.0	0.0	100.0	0.0	0.0
202	16.7	0.0	83.3	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
288	75.0	0.0	25.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
401	0.0	0.0	100.0	0.0	0.0	15.8	0.0	84.2	0.0	0.0	11.8	0.0	88.2	0.0	0.0
511	-	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
588	50.0	0.0	50.0	0.0	0.0	50.0	0.0	50.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
688	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
708	-	-	-	-	-	12.5	0.0	87.5	0.0	0.0	50.0	0.0	50.0	0.0	0.0
788	40.0	0.0	60.0	0.0	0.0	66.7	0.0	33.3	0.0	0.0	0.0	0.0	100.0	0.0	0.0
1001	0.0	0.0	105.0	0.0	0.0	6.9	0.0	91.4	0.0	0.0	12.5	0.0	87.5	0.0	0.0
1002	2.9	0.0	94.3	2.9	0.0	4.5	0.0	90.9	4.5	0.0	0.0	0.0	100.0	0.0	0.0
1003	66.7	0.0	33.3	0.0	0.0	0.0	0.0	100.0	0.0	0.0	21.4	0.0	78.6	0.0	0.0
1004	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
1101	0.0	0.0	97.7	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
1302	65.4	0.0	23.1	7.7	3.8	80.0	0.0	20.0	0.0	0.0	75.0	0.0	25.0	0.0	0.0
1401	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
1488	0.0	0.0	97.2	0.0	0.0	3.8	0.0	96.2	0.0	0.0	3.8	0.0	100.0	0.0	0.0
1702	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	9.6	0.0	89.1	0.9	0.2	8.3	0.0	95.1	0.2	0.0	5.8	0.2	66.1	0.4	0.0

Source: Field survey data.

(Percent to total)

Crops code	Large					Very Large					Total				
	Farm Saved	Exchange	Purchase	Borrowed	Others	Farm Saved	Exchange	Purchase	Borrowed	Others	Farm Saved	Exchange	Purchase	Borrowed	Others
101	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	48.4	25.7	15.2	9.3	1.5
102	-	-	-	-	-	-	-	-	-	-	12.5	43.8	43.8	0.0	0.0
103	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	22.3	41.7	20.4	12.6	2.9
104	0.0	0.0	100.0	0.0	0.0	-	-	-	-	-	69.0	17.2	10.3	3.4	0.0
106	13.6	0.0	86.4	0.0	0.0	0.0	0.0	100.0	0.0	0.0	44.6	27.2	15.9	11.3	1.0
201	0.0	0.0	100.0	0.0	0.0	-	-	-	-	-	55.6	0.0	22.2	22.2	0.0
202	0.0	0.0	100.0	0.0	0.0	-	-	-	-	-	42.9	31.0	16.7	9.5	0.0
288	-	-	-	-	-	-	-	-	-	-	50.0	37.5	12.5	0.0	0.0
401	30.0	0.0	70.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	21.7	31.7	28.3	16.7	1.7
511	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	20.0	40.0	32.0	8.0
588	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	26.7	26.7	26.7	6.7	13.3
688	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	13.6	27.3	22.7	31.8	4.5
708	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	53.3	13.3	26.7	6.7
788	100.0	0.0	0.0	0.0	0.0	-	-	-	-	-	35.7	42.9	14.3	7.1	0.0
1001	21.7	0.0	78.3	0.0	0.0	0.0	0.0	100.0	0.0	0.0	12.8	37.2	30.8	14.7	4.5
1002	0.0	0.0	100.0	0.0	0.0	-	-	-	-	-	45.5	28.6	18.2	7.8	0.0
1003	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	8.1	37.8	37.8	13.5	2.7
1004	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	22.1	43.0	23.3	10.5	1.2
1101	0.0	0.0	103.3	0.0	0.0	0.0	0.0	100.0	0.0	0.0	18.7	30.9	33.5	13.0	3.9
1302	75.0	0.0	25.0	0.0	0.0	66.7	0.0	33.3	0.0	0.0	31.3	36.1	19.3	9.6	3.6
1401	-	-	-	-	-	-	-	-	-	-	17.6	52.9	29.4	0.0	0.0
1488	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	26.7	39.3	19.3	11.9	3.0
1702	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	00.0	0.0
Total	3.6	0.0	34.7	0.0	0.0	0.4	0.0	7.5	0.0	0.0	31.1	32.3	22.4	11.8	2.5

Source: Field survey data.

Same the case of use of the fertilisers, plant protections chemicals, diesel, petrol, and electricity which were purchased from markets. While in case of human and animal labour as well as irrigation, family labours and own farm

irrigation was used (Table 3.14). Some of the households have not used some inputs which are marked as 'no use' in table.

Table 3.14: Details on use of Fertiliser, Manure, Plant protection, Labour and Other inputs.

(per cent to total)

Farmers Groups	Fertiliser						Manures						Plant protection chemicals					
	Farm Saved	Exchange	Purchase	Borrowed	Others	No Use	Farm Saved	Exchange	Purchase	Borrowed	Others	No Use	Farm Saved	Exchange	Purchase	Borrowed	Others	No Use
Marginal	0.0	0.0	98.7	0.3	0.0	1.0	44.4	0.0	18.4	0.0	0.0	38.1	0.0	0.0	57.8	0.3	0.0	41.9
Small	0.0	0.0	100.0	0.0	0.0	0.0	56.5	0.0	18.8	0.0	0.0	26.8	0.0	0.0	75.7	0.0	0.0	24.3
Medium	0.0	0.0	100.0	0.0	0.0	0.0	62.2	0.0	16.7	0.0	0.0	23.7	0.0	0.0	89.1	0.0	0.0	10.9
Large	0.0	0.0	100.0	0.0	0.0	0.0	61.8	0.0	32.9	0.0	0.0	14.5	0.0	0.0	93.4	0.0	0.0	6.6
Very Large	0.0	0.0	100.0	0.0	0.0	0.0	57.1	0.0	21.4	0.0	0.0	28.6	0.0	0.0	100.0	0.0	0.0	0.0
Total	0.0	0.0	99.5	0.1	0.0	0.4	53.4	0.0	19.6	0.0	0.0	29.5	0.0	0.0	73.4	0.1	0.0	26.5

Farmers Groups	Diesel						Electricity						Labour human				
	farm saved	exchange	purchase	borrowed	Others	No Use	farm saved	exchange	purchase	borrowed	Others	No Use	farm saved	exchange	purchase	borrowed	Others
Marginal	0.0	0.0	38.1	0.0	0.0	61.9	0.0	0.0	50.2	0.0	0.0	49.8	48.9	0.0	47.3	36.2	12.7
Small	0.0	0.0	44.4	0.0	0.0	55.6	0.0	0.0	66.1	0.0	0.0	33.9	47.3	0.0	55.2	28.0	15.9
Medium	0.0	0.0	57.1	0.0	0.0	42.9	0.0	0.0	78.8	0.0	0.0	21.2	48.1	0.0	50.6	28.2	19.2
Large	0.0	0.0	71.1	0.0	0.0	28.9	0.0	0.0	77.6	0.0	0.0	22.4	34.2	0.0	44.7	28.9	26.3
Very Large	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	85.7	0.0	0.0	14.3	50.0	0.0	64.3	7.1	28.6
Total	0.0	0.0	47.9	0.0	0.0	52.1	0.0	0.0	63.8	0.0	0.0	36.3	46.9	0.0	50.4	31.0	16.5

Farmers Groups	Labour animal						Irrigation					
	Farm Saved	Exchange	Purchase	Borrowed	Others	No Use	Farm Saved	Exchange	Purchase	Borrowed	Others	No Use
Marginal	1.0	0.0	11.7	0.0	0.0	87.6	10.2	0.0	46.0	0.0	0.0	44.1
Small	5.4	0.0	22.6	0.0	0.0	73.2	6.3	0.0	34.3	0.0	0.0	60.3
Medium	12.8	0.0	23.1	0.0	0.0	66.0	7.7	0.0	19.9	0.0	0.0	73.7
Large	10.5	0.0	9.2	0.0	0.0	81.6	5.3	0.0	18.4	0.0	0.0	77.6
Very Large	14.3	0.0	28.6	0.0	0.0	57.1	0.0	0.0	21.4	0.0	0.0	78.6
Total	5.8	0.0	17.3	0.0	0.0	78.0	7.9	0.0	34.4	0.0	0.0	58.5

Note: ' No Use' are the households who have not used the particular input (i.e. out of total hh)
Source: Field survey data.

3.4.1 Agency through which inputs were procured Seeds, Fertilizer and other inputs

The details on agency-wise seeds procured is presented in Table 3.15. It can be seen from the table that input dealer and the local private trader were two important sources for purchase of seed for the selected households. In case of other inputs such as fertilisers, insecticides and diesel, same pattern was observed. The labours used were mostly family labours supported with animal labour available with farm or with neighbouring farm (Table 3.16).

Table 3.15: Agency through which seeds were procured

(Percent to total)

Crops Code	Marginal					Small					Medium				
	Own Farm	Local Trader	Input Dealer	Cooperative & Govt. Agency	Others	Own Farm	Local Trader	Input Dealer	Cooperative & Govt. Agency	Others	Own Farm	Local Trader	Input Dealer	Cooperative & Govt. Agency	Others
101	6.2	46.9	42.6	4.3	0.0	0.0	46.5	50.0	3.5	0.0	2.0	45.1	47.1	5.9	0.0
102	100.0	0.0	0.0	0.0	0.0	14.3	0.0	71.4	0.0	0.0	42.9	0.0	71.4	0.0	0.0
103	34.8	0.0	65.2	0.0	0.0	11.6	0.0	88.4	2.3	0.0	14.3	0.0	76.2	9.5	0.0
104	0.0	100.0	0.0	0.0	0.0	0.0	80.0	20.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0
106	8.0	82.8	9.2	0.0	0.0	3.8	64.2	32.1	0.0	0.0	6.5	51.6	41.9	0.0	0.0
201	40.0	0.0	60.0	0.0	0.0	-	-	-	-	-	0.0	0.0	100.0	0.0	0.0
202	16.7	0.0	83.3	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
288	75.0	0.0	25.0	0.0	0.0	0.0	33.3	66.7	0.0	0.0	0.0	0.0	100.0	0.0	0.0
401	0.0	7.7	84.6	0.0	7.7	15.8	0.0	84.2	0.0	0.0	11.8	0.0	82.4	0.0	5.9
511	-	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	0.0	90.0	20.0	0.0
588	50.0	0.0	50.0	0.0	0.0	50.0	0.0	50.0	0.0	0.0	0.0	0.0	100.0	50.0	0.0
688	0.0	33.3	66.7	0.0	0.0	0.0	16.7	83.3	0.0	0.0	0.0	20.0	80.0	0.0	0.0
708	-	-	-	-	-	12.5	12.5	75.0	0.0	0.0	50.0	50.0	0.0	0.0	0.0
788	40.0	0.0	60.0	0.0	0.0	66.7	16.7	16.7	0.0	0.0	0.0	0.0	100.0	0.0	0.0
1001	0.0	0.0	90.0	20.0	0.0	6.9	0.0	89.7	1.7	0.0	12.5	2.1	83.3	4.2	0.0
1002	2.9	91.4	5.7	0.0	0.0	4.5	54.5	40.9	0.0	0.0	0.0	64.3	35.7	0.0	0.0
1003	66.7	0.0	33.3	0.0	0.0	0.0	0.0	100.0	0.0	0.0	28.6	0.0	71.4	0.0	0.0
1004	0.0	5.3	94.7	0.0	0.0	0.0	0.0	100.0	2.7	0.0	0.0	0.0	90.0	20.0	0.0
1101	0.0	14.0	81.4	2.3	0.0	1.4	2.8	97.2	0.0	0.0	0.0	11.7	88.3	0.0	0.0
1302	65.4	30.8	0.0	0.0	3.8	80.0	6.7	13.3	0.0	0.0	75.0	18.8	6.3	0.0	0.0
1401	0.0	33.3	66.7	0.0	0.0	0.0	22.2	77.8	0.0	0.0	0.0	0.0	100.0	0.0	0.0
1488	0.0	63.9	33.3	0.0	0.0	3.8	41.5	54.7	0.0	0.0	3.8	19.2	80.8	0.0	0.0
1702	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	11.1	45.4	40.9	2.3	0.4	9.4	23.0	70.6	1.1	0.0	6.6	13.4	50.7	2.8	0.2

Crops Code	Large					Very Large					Total				
	Own Farm	Local Trader	Input Dealer	Cooperative & Govt. Agency	Others	Own Farm	Local Trader	Input Dealer	Cooperative &Govt.Agency	Others	Own Farm	Local Trader	Input Dealer	Cooperative & Govt. Agency	Others
101	0.0	32.3	48.4	19.4	0.0	0.0	40.0	60.0	0.0	0.0	3.3	45.1	46.0	5.7	0.0
102	-	-	-	-	-	-	-	-	-	-	37.5	0.0	62.5	0.0	0.0
103	7.7	0.0	76.9	30.8	0.0	0.0	0.0	100.0	0.0	0.0	16.5	0.0	79.6	6.8	0.0
104	0.0	100.0	0.0	0.0	0.0	-	-	-	-	-	0.0	96.6	3.4	0.0	0.0
106	13.6	31.8	40.9	13.6	0.0	0.0	0.0	100.0	0.0	0.0	7.2	66.2	25.1	1.5	0.0
201	0.0	50.0	50.0	0.0	0.0	-	-	-	-	-	22.2	11.1	66.7	0.0	0.0
202	0.0	0.0	100.0	0.0	0.0	-	-	-	-	-	7.1	0.0	92.9	0.0	0.0
288	-	-	-	-	-	-	-	-	-	-	37.5	12.5	50.0	0.0	0.0
401	30.0	0.0	60.0	0.0	10.0	0.0	0.0	100.0	0.0	0.0	13.3	1.7	80.0	0.0	5.0
511	0.0	0.0	75.0	37.5	0.0	0.0	0.0	50.0	50.0	0.0	0.0	0.0	84.0	24.0	0.0
588	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	26.7	0.0	73.3	13.3	0.0
688	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	13.6	86.4	0.0	0.0
708	0.0	0.0	75.0	0.0	25.0	0.0	0.0	100.0	0.0	0.0	13.3	13.3	66.7	0.0	6.7
788	100.0	0.0	0.0	0.0	0.0	-	-	-	-	-	50.0	7.1	42.9	0.0	0.0
1001	21.7	0.0	69.6	8.7	0.0	0.0	0.0	100.0	0.0	0.0	9.6	0.6	85.3	5.8	0.0
1002	0.0	33.3	50.0	16.7	0.0	-	-	-	-	-	2.6	71.4	24.7	1.3	0.0
1003	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	16.2	0.0	83.8	0.0	0.0
1004	0.0	0.0	77.8	44.4	0.0	0.0	0.0	100.0	0.0	0.0	0.0	1.2	94.2	10.5	0.0
1101	0.0	10.0	90.0	3.3	0.0	0.0	0.0	100.0	0.0	0.0	0.4	8.7	90.4	0.9	0.0
1302	75.0	12.5	12.5	0.0	0.0	66.7	0.0	33.3	0.0	0.0	73.5	16.9	8.4	0.0	1.2
1401	-	-	-	-	-	-	-	-	-	-	0.0	17.6	82.4	0.0	0.0
1488	0.0	37.5	62.5	0.0	0.0	0.0	25.0	75.0	0.0	0.0	2.2	42.2	55.6	0.0	0.0
1702	100.0	0.0	0.0	0.0	0.0	-	-	-	-	-	100.0	0.0	0.0	0.0	0.0
Total	3.8	5.8	24.7	4.5	0.4	0.4	0.6	6.8	0.2	0.0	9.7	27.4	60.1	3.4	0.3

Source: Field survey data.

Table 3.16: Agency through which Fertilizer, Manure, Plant protection, labour and other inputs procured

Landholding Categories	Fertiliser					Manures					Plant Protection Chemicals				
	Own Farm	Local Trader	Input Dealer	Cooperative &Govt.Agency	Others	Own Farm	Local Trader	Input Dealer	Cooperative &Govt.Agency	Others	Own Farm	Local Trader	Input Dealer	Cooperative &Govt.Agency	Others
Marginal	0.0	47.9	41.9	9.2	0.0	44.4	16.5	1.0	0.0	1.0	0.0	25.4	29.8	2.9	0.0
Small	0.0	28.5	64.9	10.5	0.0	56.1	11.3	3.8	0.4	4.2	0.0	21.3	53.6	0.8	0.0
Medium	0.0	19.9	65.4	16.7	0.0	61.5	10.3	1.3	0.6	5.8	0.6	22.4	66.0	0.0	0.0
Large	0.0	17.1	47.4	35.5	0.0	61.8	21.1	5.3	0.0	6.6	0.0	19.7	72.4	1.3	0.0
Very Large	0.0	14.3	64.3	21.4	0.0	57.1	7.1	0.0	0.0	14.3	0.0	14.3	85.7	0.0	0.0
Total	0.0	33.1	54.3	13.8	0.0	53.1	14.0	2.3	0.3	3.6	0.1	22.9	49.0	1.5	0.0

Landholding Categories	Diesel					Electricity					Labour Human				
	Own Farm	Local Trader	Input Dealer	Cooperative &Govt.Agency	Others	Own Farm	Local Trader	Input Dealer	Cooperative &Govt.Agency	Others	Own Farm	Local Trader	Input Dealer	Cooperative &Govt.Agency	Others
Marginal	0.0	0.6	10.2	27.3	0.0	0.0	0.3	0.0	49.8	0.0	85.1	0.0	0.3	0.3	59.4
Small	0.4	4.2	13.4	26.4	0.0	0.0	0.0	0.8	65.3	0.0	77.0	0.0	2.1	0.4	68.6
Medium	0.0	9.0	19.9	28.2	0.0	0.0	0.0	0.0	78.8	0.0	76.3	0.0	0.0	0.0	69.9
Large	0.0	14.5	25.0	31.6	0.0	0.0	1.3	1.3	75.0	0.0	63.2	0.0	0.0	0.0	71.1
Very Large	7.1	21.4	64.3	7.1	0.0	0.0	0.0	0.0	85.7	0.0	57.1	0.0	0.0	0.0	92.9
Total	0.3	5.0	15.4	27.3	0.0	0.0	0.3	0.4	63.1	0.0	78.4	0.0	0.8	0.3	65.9

Landholding Categories	Labour Animal					Irrigation				
	Own Farm	Local Trader	Input Dealer	Cooperative &Govt.Agency	Others	Own Farm	Local Trader	Input Dealer	Cooperative &Govt.Agency	Others
Marginal	1.0	1.0	0.0	0.0	10.8	10.2	22.5	0.0	0.6	22.9
Small	5.4	0.0	0.8	0.0	21.8	6.3	17.6	1.3	0.0	15.5
Medium	10.9	0.6	0.0	0.0	23.7	7.7	12.2	0.0	0.0	7.7
Large	7.9	1.3	0.0	0.0	10.5	5.3	13.2	1.3	0.0	3.9
Very Large	14.3	0.0	0.0	0.0	28.6	0.0	21.4	0.0	0.0	0.0
Total	5.1	0.6	0.3	0.0	16.9	7.9	18.1	0.5	0.3	15.5

Source: Field survey data.

3.5 Expenditure incurred and quality of inputs

The majority of the selected households had opined that the quality of seed used by them was satisfactory and very few households had reported poor quality of seed (Table 3.17). Same the case of other inputs used by the selected households (Table 3.18).

Table 3.17: Quality of Seed used

(Percent to total)

Crops Code	Marginal				Small				Medium			
	Good	Satisfactory	Poor	Don't Know	Good	Satisfactory	Poor	Don't Know	Good	Satisfactory	Poor	Don't Know
101	61.7	38.3	0.0	0.0	65.1	34.9	0.0	0.0	72.5	27.5	0.0	0.0
102	50.0	50.0	0.0	0.0	57.1	28.6	0.0	0.0	100.0	14.3	0.0	0.0
103	65.2	30.4	4.3	0.0	67.4	32.6	0.0	0.0	76.2	23.8	0.0	0.0
104	65.0	35.0	0.0	0.0	40.0	60.0	0.0	0.0	66.7	33.3	0.0	0.0
106	37.9	62.1	0.0	0.0	54.7	45.3	0.0	0.0	67.7	32.3	0.0	0.0
201	100.0	0.0	0.0	0.0	-	-	-	-	100.0	0.0	0.0	0.0
202	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0
288	75.0	25.0	0.0	0.0	33.3	66.7	0.0	0.0	100.0	0.0	0.0	0.0
401	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0
511	-	-	-	-	40.0	60.0	0.0	0.0	70.0	30.0	0.0	0.0
588	100.0	0.0	0.0	0.0	75.0	25.0	0.0	0.0	50.0	50.0	0.0	0.0
688	66.7	33.3	0.0	0.0	83.3	16.7	0.0	0.0	100.0	0.0	0.0	0.0
708	-	-	-	-	37.5	62.5	0.0	0.0	50.0	50.0	0.0	0.0
788	100.0	0.0	0.0	0.0	83.3	16.7	0.0	0.0	100.0	0.0	0.0	0.0
1001	105.0	0.0	0.0	0.0	89.7	8.6	0.0	0.0	93.8	6.3	0.0	0.0
1002	71.4	28.6	0.0	0.0	72.7	27.3	0.0	0.0	78.6	21.4	0.0	0.0
1003	66.7	33.3	0.0	0.0	64.3	35.7	0.0	0.0	85.7	14.3	0.0	0.0
1004	84.2	15.8	0.0	0.0	86.5	13.5	0.0	0.0	75.0	25.0	0.0	0.0
1101	88.4	9.3	0.0	0.0	83.1	14.1	1.4	1.4	90.9	6.5	2.6	0.0
1302	96.2	3.8	0.0	0.0	96.7	3.3	0.0	0.0	81.3	18.8	0.0	0.0
1401	66.7	33.3	0.0	0.0	77.8	22.2	0.0	0.0	100.0	0.0	0.0	0.0
1488	72.2	25.0	0.0	0.0	56.6	43.4	0.0	0.0	88.5	11.5	3.8	0.0
1702	-	-	-	-	-	-	-	-	-	-	-	-
Total	69.1	30.5	0.2	0.0	76.3	26.9	0.2	0.2	60.5	11.5	0.6	0.0

Source: Field survey data.

Crops Code	Large				Very Large				Total			
	Good	Satisfactory	Poor	Don't Know	Good	Satisfactory	Poor	Don't Know	Good	Satisfactory	Poor	Don't Know
101	80.6	19.4	0.0	0.0	60.0	40.0	0.0	0.0	66.0	34.0	0.0	0.0
102	-	-	-	-	-	-	-	-	75.0	25.0	0.0	0.0
103	92.3	7.7	0.0	0.0	66.7	33.3	0.0	0.0	71.8	27.2	1.0	0.0
104	0.0	100.0	0.0	0.0	-	-	-	-	58.6	41.4	0.0	0.0
106	68.2	22.7	9.1	0.0	100.0	0.0	0.0	0.0	51.3	47.7	1.0	0.0
201	100.0	0.0	0.0	0.0	-	-	-	-	100.0	0.0	0.0	0.0
202	100.0	0.0	0.0	0.0	-	-	-	-	100.0	0.0	0.0	0.0
288	-	-	-	-	-	-	-	-	62.5	37.5	0.0	0.0
401	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0
511	100.0	0.0	0.0	0.0	50.0	50.0	0.0	0.0	72.0	28.0	0.0	0.0
588	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	80.0	20.0	0.0	0.0
688	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	90.9	9.1	0.0	0.0
708	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	60.0	40.0	0.0	0.0
788	100.0	0.0	0.0	0.0	-	-	-	-	92.9	7.1	0.0	0.0
1001	91.3	8.7	0.0	0.0	85.7	14.3	0.0	0.0	92.9	7.1	0.0	0.0
1002	66.7	33.3	0.0	0.0	-	-	-	-	72.7	27.3	0.0	0.0
1003	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	78.4	21.6	0.0	0.0
1004	77.8	22.2	0.0	0.0	0.0	100.0	0.0	0.0	81.4	18.6	0.0	0.0
1101	100.0	3.3	0.0	0.0	100.0	0.0	0.0	0.0	89.6	8.7	1.3	0.4
1302	75.0	25.0	0.0	0.0	100.0	0.0	0.0	0.0	91.6	8.4	0.0	0.0
1401	-	-	-	-	-	-	-	-	82.4	17.6	0.0	0.0
1488	93.8	6.3	0.0	0.0	75.0	25.0	0.0	0.0	71.9	27.4	0.7	0.0
1702	100.0	0.0	0.0	0.0	-	-	-	-	100.0	0.0	0.0	0.0
Total	33.5	4.3	0.4	0.0	6.6	1.3	0.0	0.0	246.0	74.6	1.3	0.2

Source: Field survey data.

Table 3.18: Quality of inputs such as fertilizer, manure, plant protection, labour etc.

(percent to total)

Landholding Categories	Fertiliser				Manures				Plant Protection Chemicals			
	Good	Satisfactory	Poor	Don't Know	Good	Satisfactory	Poor	Don't Know	Good	Satisfactory	Poor	Don't Know
Marginal	66.0	32.4	0.6	0.0	53.0	9.2	0.0	0.0	37.5	20.6	0.0	0.0
Small	72.4	27.2	0.4	0.0	60.3	13.0	0.0	0.0	56.5	19.2	0.0	0.0
Medium	80.8	19.2	0.0	0.0	67.3	9.0	0.0	0.0	63.5	24.4	1.3	0.0
Large	82.9	13.2	3.9	0.0	65.8	15.8	3.9	0.0	77.6	11.8	3.9	0.0
Very Large	85.7	14.3	0.0	0.0	57.1	14.3	0.0	0.0	78.6	21.4	0.0	0.0
Total	72.8	26.1	0.8	0.0	59.3	11.0	0.4	0.0	52.8	20.1	0.6	0.0

Landholding Categories	Diesel				Electricity				Labour Human			
	Good	Satisfactory	Poor	Don't Know	Good	Satisfactory	Poor	Don't Know	Good	Satisfactory	Poor	Don't Know
Marginal	37.8	0.3	0.0	0.0	46.7	3.5	0.0	0.0	57.1	5.1	37.8	0.0
Small	41.0	3.3	0.0	0.0	59.4	6.7	0.0	0.0	69.9	8.4	21.8	0.0
Medium	46.8	9.0	1.3	0.0	71.8	6.4	0.6	0.0	78.8	12.8	8.3	0.0
Large	55.3	14.5	0.0	0.0	63.2	13.2	0.0	0.0	92.1	5.3	2.6	0.0
Very Large	64.3	35.7	0.0	0.0	64.3	21.4	0.0	0.0	78.6	21.4	0.0	0.0
Total	42.6	4.9	0.3	0.0	57.3	6.3	0.1	0.0	68.9	7.9	23.3	0.0

Landholding Categories	Labour Animal				Irrigation			
	Good	Satisfactory	Poor	Don't Know	Good	Satisfactory	Poor	Don't Know
Marginal	8.3	3.2	1.0	0.0	46.0	9.8	0.0	0.0
Small	20.5	4.6	1.7	0.0	33.1	6.7	0.0	0.0
Medium	25.0	7.1	1.9	0.0	25.0	1.3	0.0	0.0
Large	13.2	5.3	0.0	0.0	22.4	0.0	0.0	0.0
Very Large	42.9	0.0	0.0	0.0	21.4	0.0	0.0	0.0
Total	16.3	4.5	1.3	0.0	35.4	6.1	0.0	0.0

Source: Field survey data.

The total expenditure incurred on the purchase of inputs reported by the selected households was estimated to be higher in case of marginal farmer and the lowest was in case of very large farm holdings, which indicate that higher the land size lower the per unit expenses on inputs (Table 3.19 and 3.20).

Table 3.19: Expenses incurred for the purchase of inputs

(in Rs. /ha)

Landholding Categories	Seeds	Fertilisers	Manures	Plant Protection Chemicals	Diesel	Electricity	Human Labour	Animal Labour
Marginal	4421	5796	6087	2188	909	3151	21989	717
Small	5548	5111	5544	2445	1275	3382	16996	1556
Medium	4799	6823	5534	3279	1928	2742	14552	1660
Large	5551	5815	3701	3669	3155	2097	11041	803
Very Large	4119	5911	3779	3204	5426	1679	5213	954
Total	5035	5928	4915	3043	2400	2642	13980	1210

Landholding Categories	Irrigation	Repair Of Mach.	Interest	Cost of Hiring Of Machinery	Lease Rent For Land	Other Expenses	Total Expenses
Marginal	3200	628	20	6399	113	121	55739
Small	1417	956	0	4914	330	4	49479
Medium	869	1583	0	3347	1309	23	48449
Large	447	1715	29	2182	2000	38	42241
Very Large	555	1596	0	470	8144	184	40941
Total	1138	1355	10	3431	1957	55	47062

Table 3.20: Total expenses incurred for the purchase of inputs (in Rs)

Landholding Categories	Av. Exp (Rs) per household
Marginal	43785
Small	94415
Medium	162483
Large	285355
Very Large	721348
Total	116864

Source: Field survey data.

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

It can be seen from the table 3.21 that more than 85 percent of the selected households reported that price paid for the seed input was either high or very high.

Table 3.21: Whether price paid for the reported inputs are reasonable: input Seeds

(percent to total)

Crop Codes	Marginal			Small			Medium		
	Reasonable	High	Very High	Reasonable	High	Very High	Reasonable	High	Very High
101	19.1	79.6	1.2	20.9	77.9	1.2	13.7	84.3	2.0
102	100.0	0.0	0.0	71.4	14.3	0.0	57.1	14.3	42.9
103	13.0	30.4	56.5	11.6	25.6	62.8	4.8	52.4	42.9
104	10.0	90.0	0.0	40.0	40.0	20.0	0.0	100.0	0.0
106	10.3	85.1	4.6	13.2	77.4	9.4	9.7	77.4	12.9
201	40.0	60.0	0.0	-	-	-	0.0	100.0	0.0
202	22.2	77.8	0.0	7.7	92.3	0.0	0.0	100.0	0.0
288	75.0	25.0	0.0	33.3	33.3	33.3	0.0	0.0	100.0
401	23.1	76.9	0.0	5.3	94.7	0.0	11.8	88.2	0.0
511	-	-	-	0.0	0.0	100.0	0.0	30.0	70.0
588	50.0	50.0	0.0	75.0	0.0	25.0	25.0	25.0	50.0
688	0.0	33.3	66.7	0.0	16.7	83.3	0.0	40.0	60.0
708	-	-	-	12.5	25.0	62.5	50.0	0.0	50.0
788	60.0	20.0	20.0	66.7	16.7	16.7	0.0	100.0	0.0
1001	15.0	40.0	50.0	5.2	24.1	69.0	0.0	25.0	75.0
1002	11.4	85.7	2.9	4.5	72.7	22.7	21.4	64.3	14.3
1003	66.7	33.3	0.0	7.1	42.9	50.0	28.6	0.0	71.4
1004	5.3	31.6	63.2	0.0	37.8	62.2	0.0	35.0	65.0
1101	7.0	44.2	46.5	8.5	22.5	69.0	3.9	37.7	58.4
1302	65.4	30.8	3.8	76.7	23.3	0.0	75.0	25.0	0.0
1401	0.0	100.0	0.0	0.0	55.6	44.4	0.0	60.0	40.0
1488	11.1	61.1	25.0	17.0	54.7	28.3	15.4	50.0	38.5
1702	-	-	-	-	-	-	-	-	-
Grand Total	18.5	67.2	14.1	17.1	49.7	36.7	8.5	36.0	28.1

Source: Field survey data.

(percent to total)

Crop Codes	Large			Very Large			Total		
	Reasonable	High	Very High	Reasonable	High	Very High	Reasonable	High	Very High
101	19.4	80.6	0.0	20.0	80.0	0.0	18.8	80.0	1.2
102	-	-	-	-	-	-	68.8	12.5	18.8
103	0.0	30.8	69.2	0.0	33.3	66.7	8.7	33.0	58.3
104	0.0	100.0	0.0	-	-	-	13.8	82.8	3.4
106	36.4	59.1	4.5	0.0	100.0	0.0	13.8	79.0	7.2
201	0.0	100.0	0.0	-	-	-	22.2	77.8	0.0
202	0.0	100.0	0.0	-	-	-	11.9	88.1	0.0
288	-	-	-	-	-	-	50.0	25.0	25.0
401	30.0	60.0	10.0	0.0	100.0	0.0	15.0	83.3	1.7
511	0.0	37.5	62.5	0.0	50.0	50.0	0.0	28.0	72.0
588	0.0	0.0	100.0	0.0	0.0	100.0	40.0	20.0	40.0
688	0.0	42.9	57.1	0.0	100.0	0.0	0.0	36.4	63.6
708	0.0	0.0	100.0	0.0	0.0	100.0	13.3	13.3	73.3
788	100.0	0.0	0.0	-	-	-	57.1	28.6	14.3
1001	4.3	8.7	87.0	0.0	0.0	100.0	4.5	23.1	72.4
1002	16.7	83.3	0.0	-	-	-	11.7	77.9	10.4
1003	0.0	0.0	100.0	0.0	0.0	100.0	18.9	18.9	62.2
1004	11.1	33.3	55.6	0.0	100.0	0.0	2.3	36.0	61.6
1101	3.3	33.3	66.7	0.0	11.1	88.9	5.7	32.6	61.7
1302	75.0	25.0	0.0	66.7	33.3	0.0	72.3	26.5	1.2
1401	-	-	-	-	-	-	0.0	64.7	35.3
1488	0.0	43.8	56.3	0.0	25.0	75.0	12.6	53.3	34.1
1702	0.0	0.0	100.0	-	-	-	0.0	0.0	100.0
Grand Total	5.3	16.9	16.0	0.6	2.6	4.7	15.5	53.6	30.9

Source: Field survey data.

The prices paid for off-farm inputs such as fertilisers, plant protection, diesel were reported either high or very high while in case of manure, same was reported at reasonable price. The labour rate reported is very high. Thus, at overall level, all the inputs were categorised under high to very high category and thus inputs were not reasonable.

Table 3.22: Whether price paid for the reported inputs are reasonable: input such as fertilisers, manure, plant protection, labour etc...

(Percent to total)

Landholding Categories	Fertiliser			Manures			Plant Protection Chemicals			Diesel		
	Reasonable	High	Very High	Reasonable	High	Very High	Reasonable	High	Very High	Reasonable	High	Very High
Marginal	2.86	82.54	13.65	40.63	13.65	7.62	8.57	33.97	20.32	7.30	2.86	0.63
Small	4.18	60.25	35.56	35.56	15.06	22.59	7.53	29.29	40.59	3.77	5.86	11.72
Medium	1.92	52.56	45.51	33.97	10.90	31.41	5.13	37.18	47.44	6.41	14.74	17.95
Large	0.00	60.53	39.47	32.89	18.42	34.21	1.32	48.68	44.74	9.21	23.68	27.63
Very Large	0.00	35.71	64.29	14.29	0.00	50.00	0.00	35.71	64.29	0.00	28.57	71.43
Total	2.75	67.13	29.75	36.63	13.75	20.00	6.75	34.63	34.75	6.13	8.50	11.13

Landholding Categories	Electricity			Labour Human			Labour Animal			Irrigation		
	Reasonable	High	Very High	Reasonable	High	Very High	Reasonable	High	Very High	Reasonable	High	Very High
Marginal	7.94	19.05	7.30	31.11	17.78	51.11	2.22	3.49	6.67	12.70	27.94	15.24
Small	12.55	25.52	20.08	13.39	31.80	54.81	2.93	2.93	20.92	7.95	17.57	14.23
Medium	19.23	24.36	25.00	12.18	35.90	51.92	2.56	3.21	28.21	6.41	7.69	12.18
Large	11.84	27.63	26.32	13.16	34.21	52.63	0.00	6.58	11.84	7.89	5.26	9.21
Very Large	21.43	42.86	14.29	7.14	28.57	64.29	14.29	14.29	14.29	0.00	7.14	14.29
Total	12.13	23.25	16.50	20.00	27.25	52.75	2.50	3.75	15.75	9.38	18.38	13.75

Landholding Categories	Minor Repair And Maintenance Of Machinery And Equipment			Interest			Cost Of Hiring Of Machinery			Lease Rent For Land			Other Expenses		
	Reasonable	High	Very High	Reasonable	High	Very High	Reasonable	High	Very High	Reasonable	High	Very High	Reasonable	High	Very High
Marginal	2.54	3.17	1.59	0.32	0.00	0.00	24.44	43.81	21.27	0.32	0.32	0.00	0.00	0.32	0.32
Small	6.69	6.28	10.46	0.00	0.00	0.00	12.13	36.82	32.64	1.67	0.42	0.00	0.00	0.00	0.42
Medium	14.74	13.46	17.31	0.00	0.00	0.00	10.90	26.92	27.56	7.05	2.56	2.56	0.64	0.64	0.64
Large	22.37	18.42	28.95	1.32	1.32	0.00	3.95	28.95	9.21	14.47	5.26	2.63	0.00	2.63	1.32
Very Large	28.57	7.14	64.29	0.00	0.00	0.00	0.00	14.29	7.14	28.57	35.71	0.00	14.29	0.00	0.00
Total	8.50	7.63	11.00	0.25	0.13	0.00	15.75	36.50	24.50	3.88	1.88	0.75	0.38	0.50	0.50

Source: Field survey data.

The reasons for unreasonable prices paid for inputs are presented in Tables 3.23 and 3.24 which indicate that in case of seed, households opined that seed was not subsidised, very few sellers of seed, absence of government sell, collude by private sellers and no price control were the reasons reported for the same. Same trend was observed in case of other inputs as well.

Table 3.23: Reasons for unreasonable prices paid for the inputs: Seed

(per cent to total)

Crop Codes	Marginal							Small						
	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other
101	40.7	2.5	1.2	9.3	45.1	22.8	0.0	38.4	0.0	2.3	8.1	43.0	24.4	0.0
102	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.3	0.0
103	30.4	0.0	34.8	0.0	0.0	52.2	0.0	27.9	0.0	27.9	0.0	2.3	58.1	0.0
104	0.0	0.0	0.0	0.0	0.0	90.0	0.0	0.0	0.0	0.0	0.0	0.0	60.0	0.0
106	6.9	1.1	4.6	13.8	12.6	56.3	0.0	7.5	1.9	7.5	11.3	13.2	50.9	0.0
201	60.0	0.0	0.0	0.0	60.0	0.0	0.0	-	-	-	-	-	-	-
202	77.8	0.0	0.0	0.0	77.8	0.0	0.0	92.3	0.0	0.0	0.0	92.3	0.0	0.0
288	25.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	33.3	0.0	33.3	0.0	0.0
401	76.9	0.0	0.0	0.0	76.9	0.0	0.0	94.7	0.0	0.0	0.0	94.7	0.0	0.0
511	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	20.0	80.0	0.0
588	50.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0
688	0.0	0.0	0.0	33.3	0.0	66.7	0.0	0.0	0.0	0.0	16.7	0.0	83.3	0.0
708	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	87.5	0.0
788	20.0	0.0	0.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0
1001	20.0	0.0	20.0	0.0	10.0	60.0	0.0	10.3	0.0	10.3	0.0	1.7	82.8	0.0
1002	5.7	0.0	8.6	0.0	8.6	77.1	0.0	22.7	13.6	13.6	0.0	27.3	63.6	0.0
1003	33.3	0.0	33.3	0.0	33.3	0.0	0.0	14.3	0.0	14.3	0.0	21.4	71.4	0.0
1004	52.6	0.0	52.6	0.0	0.0	42.1	0.0	37.8	2.7	35.1	0.0	5.4	62.2	0.0
1101	30.2	0.0	2.3	0.0	30.2	67.4	0.0	9.9	0.0	0.0	0.0	9.9	81.7	0.0
1302	0.0	0.0	0.0	19.2	3.8	7.7	0.0	0.0	0.0	0.0	0.0	0.0	23.3	0.0
1401	66.7	0.0	0.0	33.3	66.7	0.0	0.0	11.1	0.0	0.0	22.2	11.1	66.7	0.0
1488	0.0	0.0	5.6	16.7	2.8	61.1	0.0	0.0	1.9	1.9	5.7	1.9	73.6	0.0
1702	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	26.7	0.9	6.6	7.5	26.0	41.2	0.0	21.5	1.1	8.3	3.6	18.5	56.7	0.0

Source: Field survey data.

(Percent to total)

Crop Codes	Medium							Large						
	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other
101	35.3	0.0	2.0	9.8	37.3	37.3	0.0	38.7	0.0	0.0	9.7	38.7	32.3	0.0
102	0.0	0.0	0.0	0.0	0.0	57.1	0.0	-	-	-	-	-	-	-
103	33.3	0.0	33.3	4.8	0.0	57.1	0.0	30.8	0.0	23.1	0.0	7.7	69.2	0.0
104	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
106	9.7	0.0	3.2	9.7	16.1	61.3	0.0	4.5	0.0	0.0	9.1	4.5	50.0	0.0
201	100.0	0.0	0.0	0.0	100.0	0.0	0.0	50.0	0.0	0.0	0.0	50.0	50.0	0.0
202	100.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0
288	0.0	0.0	0.0	0.0	0.0	100.0	0.0	-	-	-	-	-	-	-
401	88.2	0.0	0.0	0.0	88.2	0.0	0.0	60.0	0.0	0.0	0.0	70.0	0.0	0.0
511	0.0	0.0	0.0	0.0	0.0	100.0	0.0	12.5	0.0	0.0	0.0	0.0	0.0	87.5
588	25.0	0.0	0.0	0.0	25.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
688	0.0	0.0	20.0	0.0	0.0	80.0	0.0	0.0	0.0	0.0	0.0	28.6	71.4	0.0
708	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
788	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1001	16.7	0.0	10.4	0.0	2.1	83.3	0.0	4.3	0.0	4.3	0.0	0.0	91.3	0.0
1002	14.3	0.0	7.1	0.0	14.3	64.3	0.0	0.0	0.0	0.0	16.7	0.0	66.7	0.0
1003	0.0	0.0	0.0	0.0	0.0	71.4	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
1004	50.0	0.0	50.0	0.0	0.0	50.0	0.0	33.3	0.0	22.2	0.0	11.1	55.6	0.0
1101	14.3	0.0	0.0	1.3	11.7	80.5	0.0	13.3	0.0	0.0	0.0	10.0	86.7	0.0
1302	0.0	0.0	0.0	12.5	6.3	6.3	0.0	0.0	0.0	0.0	12.5	0.0	12.5	0.0
1401	0.0	0.0	20.0	0.0	0.0	440.0	0.0	-	-	-	-	-	-	-
1488	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1702	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	100.0	0.0
Grand Total	16.2	0.0	5.1	2.3	12.1	43.1	0.0	7.0	0.0	1.1	1.5	6.0	22.6	1.3

Source: Field survey data.\

(Percent to total)

Crop Codes	Very Large							Total						
	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other
101	20.0	0.0	0.0	20.0	20.0	40.0	0.0	38.8	1.2	1.5	9.3	42.4	26.6	0.0
102	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	31.3	0.0
103	0.0	0.0	0.0	0.0	0.0	100.0	0.0	29.1	0.0	29.1	1.0	1.9	59.2	0.0
104	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	86.2	0.0
106	0.0	0.0	0.0	0.0	0.0	100.0	0.0	7.2	1.0	4.6	11.8	12.3	55.4	0.0
201	-	-	-	-	-	-	-	66.7	0.0	0.0	0.0	66.7	11.1	0.0
202	-	-	-	-	-	-	-	88.1	0.0	0.0	0.0	88.1	0.0	0.0
288	-	-	-	-	-	-	-	12.5	0.0	12.5	0.0	25.0	12.5	0.0
401	0.0	0.0	0.0	0.0	100.0	0.0	0.0	81.7	0.0	0.0	0.0	85.0	0.0	0.0
511	0.0	0.0	0.0	0.0	0.0	100.0	0.0	4.0	0.0	0.0	0.0	4.0	64.0	28.0
588	0.0	0.0	0.0	0.0	0.0	100.0	0.0	20.0	0.0	0.0	0.0	20.0	40.0	0.0
688	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	4.5	9.1	9.1	77.3	0.0
708	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	86.7	0.0
788	-	-	-	-	-	-	-	21.4	0.0	0.0	0.0	21.4	21.4	0.0
1001	0.0	0.0	0.0	0.0	0.0	100.0	0.0	12.2	0.0	10.3	0.0	2.6	82.1	0.0
1002	-	-	-	-	-	-	-	11.7	3.9	9.1	1.3	14.3	70.1	0.0
1003	0.0	0.0	0.0	0.0	0.0	100.0	0.0	8.1	0.0	8.1	0.0	10.8	70.3	0.0
1004	0.0	0.0	0.0	0.0	0.0	100.0	0.0	43.0	1.2	40.7	0.0	3.5	54.7	0.0
1101	0.0	0.0	0.0	0.0	0.0	100.0	0.0	15.2	0.0	0.4	0.4	13.9	80.0	0.0
1302	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	9.6	2.4	14.5	0.0
1401	-	-	-	-	-	-	-	17.6	0.0	5.9	23.5	17.6	276.5	0.0
1488	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1702	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grand Total	0.2	0.0	0.0	0.2	0.4	6.8	0.0	22.2	0.6	6.4	4.2	19.4	49.3	0.4

Source: Field survey data.

Table 3.24: Reasons for unreasonable prices paid for the inputs: Fertiliser, manure, plant protection etc.

(Percent to total)

Landholding Categories	Fertiliser							Manures						
	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other
Marginal	34.3	4.1	7.0	7.0	33.0	45.1	0.0	1.6	1.0	0.0	1.9	1.6	15.2	0.3
Small	26.8	2.9	8.8	5.9	22.6	55.6	0.0	0.4	2.1	0.0	2.5	0.0	32.6	0.0
Medium	27.6	2.6	8.3	2.6	23.1	61.5	0.0	0.0	2.6	0.0	0.6	0.0	39.1	0.0
Large	31.6	1.3	5.3	1.3	25.0	64.5	0.0	0.0	5.3	0.0	2.6	0.0	44.7	0.0
Very Large	7.1	0.0	0.0	0.0	7.1	92.9	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0
Total	30.0	3.1	7.5	5.1	26.8	54.1	0.0	0.8	2.0	0.0	1.9	0.6	28.5	0.1

Landholding Categories	Plant Protection Chemicals							Diesel						
	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other
Marginal	21.0	0.6	5.4	3.5	17.5	25.4	0.0	2.2	0.0	0.0	0.0	1.9	1.3	0.0
Small	17.2	0.4	9.6	3.3	10.9	45.6	0.0	0.8	0.0	0.0	0.0	1.7	15.9	0.0
Medium	21.8	0.0	9.0	3.8	14.7	55.1	0.0	2.6	0.0	0.0	2.6	5.8	23.7	0.0
Large	25.0	0.0	6.6	2.6	18.4	64.5	0.0	5.3	0.0	1.3	3.9	10.5	35.5	0.0
Very Large	7.1	0.0	0.0	0.0	7.1	92.9	0.0	0.0	0.0	0.0	0.0	7.1	92.9	0.0
Total	20.1	0.4	7.4	3.4	14.9	42.1	0.0	2.1	0.0	0.1	0.9	3.5	14.9	0.0

Landholding Categories	Electricity							Labour Human						
	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other
Marginal	12.1	0.0	7.3	0.6	3.5	13.3	0.0	31.1	17.8	51.1	0.0	0.0	0.0	0.0
Small	14.6	0.0	5.4	2.1	7.9	28.9	0.0	13.4	31.8	54.8	0.0	0.0	0.0	0.0
Medium	9.6	0.0	2.6	1.3	7.7	35.3	0.0	12.2	35.9	51.9	0.0	0.0	0.0	0.0
Large	7.9	0.0	0.0	2.6	6.6	42.1	0.0	13.2	34.2	52.6	0.0	0.0	0.0	0.0
Very Large	0.0	0.0	0.0	0.0	0.0	57.1	0.0	7.1	28.6	64.3	0.0	0.0	0.0	0.0
Total	11.8	0.0	5.0	1.4	5.9	25.8	0.0	20.0	27.3	52.8	0.0	0.0	0.0	0.0

Source: Field survey data.

(Percent to total)

Landholding Categories	Labour Animal							Irrigation						
	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other
Marginal	0.0	0.0	0.0	0.0	0.0	10.2	0.0	0.0	16.8	0.0	1.0	0.0	25.4	0.0
Small	0.4	0.0	0.0	0.0	0.0	23.4	0.0	1.3	11.3	0.0	0.8	0.0	18.4	0.0
Medium	0.0	0.0	0.0	0.0	0.0	31.4	0.0	1.3	6.4	0.0	1.3	0.0	10.9	0.0
Large	0.0	0.0	0.0	0.0	0.0	18.4	0.0	0.0	3.9	0.0	0.0	0.0	10.5	0.0
Very Large	0.0	0.0	0.0	0.0	0.0	28.6	0.0	0.0	7.1	0.0	0.0	0.0	14.3	0.0
Total	0.1	0.0	0.0	0.0	0.0	19.4	0.0	0.6	11.8	0.0	0.9	0.0	18.9	0.0

Landholding Categories	Repair & Maintenance Of Machinery &Equipment							Interest						
	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other	Not Subsidised	Very Few Sellers	No Govt. Sellers	pvt. sellers collude	no price control	All of the above	Any other
Marginal	0.0	0.0	0.0	0.0	1.6	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Small	0.0	0.0	0.0	0.8	1.7	14.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Medium	0.6	0.0	0.0	0.6	3.2	26.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Large	2.6	0.0	0.0	2.6	1.3	40.8	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0
Very Large	7.1	0.0	0.0	0.0	0.0	64.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.5	0.0	0.0	0.6	1.9	15.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0

Landholding Categories	Cost of Hiring of Machinery							Lease Rent For Land							Other Expenses						
	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other	Not Subsidised	Very Few Sellers	No Govt. Sellers	Pvt. Sellers Collude	No Price Control	All Of The Above	Any Other
Marginal	7.0	0.3	0.6	12.1	8.6	43.5	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0
Small	12.1	0.0	0.0	13.0	12.6	43.9	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
Medium	8.3	0.0	0.0	10.3	8.3	35.9	0.0	1.9	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0
Large	7.9	0.0	0.0	9.2	7.9	21.1	0.0	0.0	0.0	0.0	1.3	1.3	5.3	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0
Very Large	0.0	0.0	0.0	14.3	0.0	7.1	0.0	0.0	7.1	0.0	7.1	0.0	21.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	8.8	0.1	0.3	11.8	9.5	39.4	0.0	0.5	0.1	0.0	0.3	0.1	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0

Source: Field survey data.

3.7 Chapter Summary

This chapter presented the details on crops grown by the selected households and parameters related to input markets. The major crops grown by the selected households were paddy, cotton, wheat, groundnut and fodder crops. The average land covered under crop was relatively higher in case of tobacco growing farmers followed by sugarcane, groundnut and cotton growers. The mixed trend of productivity was observed which was expected as the crops are specific to particular regions as well as some of the farmers have reported the failure of crop during the agriculture year under study. Out of the total quantity of crop produced, around 15 per cent was reported unsold or kept at home and 85 per cent produced was sold. The majority of the portion of the quantity produced was sold during the first attempt only (96.5 per cent) that to majority of sale was made to local private trader followed by sale in the nearby mandi with very low share sold to input dealers, cooperative government agency and processors. At overall level, almost three fifth of total was sold to local private trader/place, followed by the one fourth of total sale to nearby mandi, 8.5 per cent to processor, 4.6 per cent to cooperative and government agency and remaining 2.6 per cent to input dealers. While in case of oilseed crops, sale was reported to the processor. The small farmers reported sale of sugarcane harvest to large farmers in same village while some farmers had sold same to some the private jiggery preparation units in village and in nearby mandi to sugarcane juice units.

At overall level, more than 98 per cent of the selected households were unsatisfied with sale of crops due to receipt of lower rate than market, followed by delayed payments, deductions for loans borrowed and faulty weighing and

grading. Out of the total four major reasons cited for dissatisfactions, one among them was low price received for the produce sold. While the major reasons for unreasonable prices received for the reported crops were no minimum prices are fixed followed by very few buyers, no government purchase as such and presence of private buyers collude. In most of the cases, off farm inputs were used on large scale which were purchased from the market or in few cases were borrowed from others. While less than 10 percent of households had used farm saved seed.

Same the case of use of the fertilisers, plant protections chemicals, diesel, petrol, and electricity which were purchased from markets. While in case of human and animal labour as well as irrigation, family labours and own farm irrigation was used.

The input dealer and the local private trader were two important sources for purchase of seed for the selected households. In case of other inputs such as fertilisers, insecticides and diesel, same pattern was observed. The labours used were mostly family labours supported with animal labour available with farm or with neighbouring farm. The majority of the selected households had opined that the quality of seed used by them was satisfactory and very few households had reported poor quality of seed. Same the case of other inputs used by the selected households. The total expenditure incurred on the purchase of inputs reported by the selected households was estimated to be higher in case of marginal farmer and the lowest was in case of very large farm holdings, which indicate that higher the land size lower the per unit expenses on inputs. More than 85 percent of the selected households reported that price paid for the seed input was either high or very high. The prices paid for off-farm inputs such as fertilisers, plant protection, diesel were reported either high or very high while in case of manure, same was reported at reasonable price. The labour rate reported is very high. Thus, at overall level, all the inputs were categorised under high to very high category and thus inputs were not reasonable. The reasons for unreasonable prices paid for inputs indicate that in case of seed, households opined that seed was not subsidised, very few sellers of seed, absence of government sell, collude by private sellers and no price control were the reasons reported for the same. Same trend was observed in case of other inputs as well.

The next chapter presents details on animal products and input markets.

Chapter IV

Animal Products and Input Markets

4.1 Introduction:

After having discussed about the crops grown by the selected households and output markets, this chapter discusses the data on animal products and input markets.

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

The details on the agency-wise sale of produce from animal husbandry such as milk, eggs by the selected households are presented in Table 4.1.

Table 4.1: Agency through which the reported produce from animal husbandry was sold

(Percentage of households)

Land-holding Categories	Milk						Woll					
	Directly To Other Household	Local Trader	Commission Agent	Cooperative & Govt Agency	Processor	Others	Directly To Other Household	Local Trader	Commission Agent	Cooperative & Govt Agency	Processor	Others
First Disposal												
Marginal	2.96	8.89	0.00	80.00	3.70	0.00	0.0	100.0	0.0	0.0	0.0	0.0
Small	6.00	2.67	0.00	72.67	6.00	0.67	0.0	0.0	0.0	0.0	0.0	0.0
Medium	7.84	1.96	0.00	69.61	6.86	0.00	0.0	0.0	0.0	0.0	0.0	0.0
Large	5.26	1.75	0.00	73.68	7.02	1.75	0.0	0.0	0.0	0.0	0.0	0.0
Very Large	11.11	0.00	0.00	66.67	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0
Total	5.52	4.19	0.00	74.17	5.52	0.44	0.0	100.0	0.0	0.0	0.0	0.0
Second Disposal												
Marginal	0.74	0.00	0.00	0.74	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0
Small	0.67	0.00	0.00	1.33	0.00	1.33	0.0	0.0	0.0	0.0	0.0	0.0
Medium	0.00	0.00	0.00	0.98	0.00	2.94	0.0	0.0	0.0	0.0	0.0	0.0
Large	0.00	0.00	0.00	3.51	1.75	0.00	0.0	0.0	0.0	0.0	0.0	0.0
Very Large	0.00	0.00	0.00	0.00	11.11	0.00	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.44	0.00	0.00	1.32	0.44	1.10	0.0	0.0	0.0	0.0	0.0	0.0
Total Disposal												
Marginal	3.70	8.89	0.00	80.74	3.70	0.00	0.0	100.0	0.0	0.0	0.0	0.0
Small	6.67	2.67	0.00	74.00	6.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0
Medium	7.84	1.96	0.00	70.59	6.86	2.94	0.0	0.0	0.0	0.0	0.0	0.0
Large	5.26	1.75	0.00	77.19	8.77	1.75	0.0	0.0	0.0	0.0	0.0	0.0
Very Large	11.11	0.00	0.00	66.67	11.11	0.00	0.0	0.0	0.0	0.0	0.0	0.0
Total	5.96	4.19	0.00	75.50	5.96	1.55	0.0	100.0	0.0	0.0	0.0	0.0

Source: Field survey data.

It can be seen from the table that more than 86 per cent of total milk produced was sold in village, of which sale to local traders was more than half of total produce sold followed by more than one third of total produce was directly sold to households in village in the first disposal itself. The remaining produce was sold during second disposal to the same agencies. The highest share of households reported sale of milk in cooperative and government agency during first disposal was in case of marginal group.

4.3 Usefulness of these Channels and Reasons for Dissatisfaction

During the sale of the animal produce, some of the households have reported their dissatisfactions and reasons for same are presented in Table 4.2. It can be seen from the table that major reasons for the dissatisfactions were lower price than market price and deductions towards loan borrowed. The disposal was mainly during first attempt only as mentioned earlier.

Table 4.2: Reasons for dissatisfaction regarding first/second major disposal of reported produce from animal husbandry

(Percentage of households)

Land-holding Categories	First Disposal					Second Disposal				
	Lower Than Market Price	Delayed Payments	Deductions For Loans Borrowed	Faulty Weighing And Grading	Other	Lower Than Market Price	Delayed Payments	Deductions For Loans Borrowed	Faulty Weighing And Grading	Other
Marginal	46.7	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0
Small	54.0	2.7	0.0	0.0	0.0	1.3	0.7	0.0	0.0	0.0
Medium	57.8	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0
Large	47.4	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0	0.0
Very Large	44.4	0.0	0.0	0.0	11.1	11.1	0.0	0.0	0.0	0.0
Total	51.7	1.1	0.0	0.0	0.4	1.5	0.2	0.0	0.0	0.0
Total Disposal										
Marginal	47.4	0.0	0.0	0.0	0.0	-	-	-	-	-
Small	55.3	3.3	0.0	0.0	0.0	-	-	-	-	-
Medium	58.8	1.0	0.0	0.0	1.0	-	-	-	-	-
Large	50.9	0.0	0.0	0.0	0.0	-	-	-	-	-
Very Large	55.6	0.0	0.0	0.0	11.1	-	-	-	-	-
Total	53.2	1.3	0.0	0.0	0.4	-	-	-	-	-

Source: Field survey data.

Table 4.3: Produce-wise total sale value (in Rs)

Landholding Categories	Total sale value (Rs)					Rs. per household				
	Milk	Wool	Hide, Bones, Manure	Other Produce	Total	Milk	Wool	Hide, Bones, Manure	Other Produce	Total
Marginal	1570311	5000	27600	5500	1608411	11662	5000	986	550	11856
Small	2267126	0	63850	13600	2344576	15149	0	1013	800	15665
Medium	1679614	0	47900	5900	1733414	16837	0	1114	983	17365
Large	947915	0	35100	2500	985515	16630	0	1404	833	17290
Very Large	962480	0	14900	1000	978380	106942	0	1863	1000	108709
Total	7427446	5000	189350	28500	7645296	16500	5000	1134	770	16954

Note: Rs per households is estimated by diving the number of sample household under the category.
Source: Field survey data.

4.4 Adequacy of Price received and if Inadequate, reasons for the same

The details on adequacy of price received from the sale of milk produce are presented in table 4.4. It can be seen from the table that major reasons for the unreasonable prices received from the buyers for sold produced were very few buyers and collude of private buyers. Besides, some other reasons for same were no minimum price and no purchase by any government agency in selected area.

Table 4.4: Reasons for unreasonable prices received from the sale of reported milk produce

(Percentage of households)

Landholding Categories	Very Few Buyers	No Govt. Purchase	Pvt Buyers Collude	No Minimum Price	All Of The Above	Others
Marginal	34.1	0.0	31.0	2.3	14.0	0.0
Small	22.0	0.8	18.2	3.0	40.9	0.0
Medium	27.3	2.3	25.0	3.4	38.6	0.0
Large	19.6	0.0	15.7	0.0	33.3	0.0
Very Large	14.3	0.0	14.3	0.0	57.1	0.0
Total	26.5	0.7	23.3	2.5	31.2	0.0

Source: Field survey data.

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

The details on farmer related inputs for animal husbandry are presented in table 4.5. It can be seen from the table that almost all inputs for cattle and buffalo rearing were purchased from market while farm saved inputs were used in case of sheet/goat/piggery rearing. In case of green and dry fodder for animals, home grown fodder was the major source followed by purchased fodder from the nearby farmers or market. The concentrates were mostly purchased from the markets.

Table 4.5: Procurement of inputs related to animal husbandry

(Percentage of households)

Particulars	Marginal	Small	Medium	Large	Very Large	Total
Cost of animal seeds (Cattle/buffalo)						
Farm saved	0.00	0.00	0.98	0.00	11.11	0.44
Exchanged	0.00	0.00	0.00	0.00	0.00	0.00
Purchased	93.33	96.00	98.04	100.00	100.00	96.25
Borrowed	0.00	0.67	0.00	0.00	0.00	0.22
Others	0.00	0.67	0.00	0.00	0.00	0.22
Cost of animal seeds (Sheep, goat, piggery, etc.)						
Farm saved	100.0	0.0	0.0	0.0	0.0	100.0
Exchanged	0.0	0.0	0.0	0.0	0.0	0.0
Purchased	0.0	0.0	0.0	0.0	0.0	0.0
Borrowed	0.0	0.0	0.0	0.0	0.0	0.0
Others	0.0	0.0	0.0	0.0	0.0	0.0
Animal Feed						
Green fodder						
farm saved	77.04	88.00	89.22	91.23	88.89	85.43
exchanged	0.74	0.00	0.00	0.00	0.00	0.22
purchased	25.93	14.67	10.78	14.04	22.22	17.22
borrowed	0.00	0.00	0.00	0.00	0.00	0.00
Others	0.00	0.00	0.00	0.00	0.00	0.00
Dry Fodder						
farm saved	77.78	90.00	91.18	87.72	88.89	86.31
exchanged	0.00	0.00	0.00	0.00	0.00	0.00
purchased	21.48	12.00	7.84	10.53	22.22	13.91
borrowed	0.00	0.00	0.00	0.00	0.00	0.00
Others	0.00	0.00	0.00	0.00	0.00	0.00
Concentrates						
farm saved	0.74	2.00	0.98	0.00	0.00	1.10
exchanged	0.00	0.00	0.98	0.00	0.00	0.22
purchased	96.30	95.33	99.02	96.49	100.00	96.69
borrowed	0.00	0.67	0.00	0.00	0.00	0.22
Others	0.00	0.00	0.00	0.00	0.00	0.00
Others						
farm saved	10.37	13.33	9.80	1.75	11.11	10.15
exchanged	0.00	0.00	0.98	0.00	0.00	0.22
purchased	36.30	54.67	48.04	54.39	88.89	48.34
borrowed	0.00	0.00	0.98	0.00	0.00	0.22
Others	0.00	0.00	0.00	0.00	0.00	0.00

Source: Field survey data.

Table 4.6: Agency through which reported inputs related to animal husbandry were procured

(Percentage of households)

Particular	Marginal	Small	Medium	Large	Very Large
Cost of Animal Seeds					
Cattle/Buffalo					
Own Farm	0.00	0.00	1.96	0.00	0.00
Local Trader	0.74	2.67	0.00	1.75	0.00
Input Dealer	48.89	50.67	54.90	61.40	44.44
Cooperative & Govt. Agency	42.22	45.33	44.12	35.09	66.67
Others	2.96	2.00	0.98	1.75	0.00
Total	0.00	0.00	1.96	0.00	0.00
Sheep, Goat, Piggery, Etc.					
Own Farm	100.00	0.00	0.00	0.00	0.00
Local Trader	0.00	0.00	0.00	0.00	0.00
Input Dealer	0.00	0.00	0.00	0.00	0.00
Cooperative & Govt. Agency	0.00	0.00	0.00	0.00	0.00
Others	0.00	0.00	0.00	0.00	0.00
Total	100.00	0.00	0.00	0.00	0.00
Animal Feed					
Green Fodder					
Own Farm	77.04	88.00	88.24	91.23	88.89
Local Trader	21.48	13.33	11.76	8.77	11.11
Input Dealer	0.00	0.00	0.00	0.00	0.00
Cooperative & Govt. Agency	0.00	0.00	0.00	0.00	0.00
Others	8.15	2.00	2.94	5.26	11.11
Total	77.04	88.00	88.24	91.23	88.89
Dry Fodder					
Own Farm	77.78	90.00	90.20	87.72	88.89
Local Trader	20.00	11.33	7.84	8.77	11.11
Input Dealer	0.00	0.00	0.00	0.00	0.00
Cooperative & Govt. Agency	0.00	0.00	0.00	0.00	0.00
Others	6.67	1.33	3.92	1.75	11.11
Total	77.78	90.00	90.20	87.72	88.89
Concentrates					
Own Farm	0.00	2.00	0.98	0.00	0.00
Local Trader	2.22	0.67	0.00	1.75	11.11
Input Dealer	27.41	44.67	40.20	45.61	66.67
Cooperative & Govt. Agency	71.11	63.33	66.67	54.39	55.56
Others	0.00	0.00	0.00	0.00	0.00
Total	0.00	2.00	0.98	0.00	0.00
Others					
Own Farm	11.11	12.00	8.82	1.75	11.11
Local Trader	22.96	20.67	10.78	17.54	11.11
Input Dealer	12.59	34.00	40.20	36.84	66.67
Cooperative & Govt. Agency	0.00	1.33	0.00	0.00	0.00
Others	0.00	0.00	0.00	0.00	11.11
Total	11.11	12.00	8.82	1.75	11.11

Source: Field survey data.

Agency through which reported inputs (related to animal husbandry) were procured by the selected households is presented in Table 4.6. It can be seen from the table that private input dealer followed by cooperative and government agency were major procurement stations for cattle and buffalo dairy farmers while for small ruminants, inputs were used from own farm. While in case of animal feed procurement for cattle and buffalo, own farm and local traders were major sources.

4.6 Expenditure incurred and quality of inputs

The expenses incurred for the purchase of inputs related to animal husbandry presented in Table 4.7 indicate that expenditure per households for rearing the livestock was reported the lowest by the medium land holders followed by small and large landholding groups. As such one cannot compare it as per landholding group as possession of livestock is different across the groups.

Table 4.7: Expenses incurred for the purchase of inputs related to animal husbandry

(in Rs/Hh.)

Landholding Categories	Cost Of Animal Seeds			Animal Feed				Veterinary Charges	Interest	Lease Rent For Land	Labour Charges	Other Expenses	Total Expenses (Rs)
	Cattle/Buffalo	Sheep/ Goat/Piggery	Poultry & Duckery	Green Fodder	Dry Fodder	Concentrates	Others						
Marginal	374.1	800.0	0.0	2342.7	3004.4	6181.6	826.6	532.0	0.0	0.0	388.9	29.6	13685.9
Small	522.3	0.0	0.0	3387.5	4310.3	5138.8	1359.3	735.0	0.0	0.0	296.0	11.3	15760.5
Medium	324.4	0.0	0.0	1893.0	2321.2	2756.4	659.4	457.4	0.0	0.0	31.4	0.0	8443.2
Large	580.5	0.0	0.0	3387.5	4153.7	4932.5	1180.0	818.4	0.0	0.0	56.1	0.0	15108.9
Very Large	938.9	0.0	0.0	4866.7	5700.0	6961.1	3966.7	1044.4	22.2	0.0	522.2	277.8	24300.0
Total	527.8	800.0	0.0	3155.1	3907.0	5548.3	1184.3	732.5	0.4	0.0	430.5	18.1	15505.8

Source: Field survey data.

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

The selected households were asked to give their opinion about the amount paid by them for purchase of inputs. The responses indicate that majority of selected households were opined that rate charged for inputs were reasonable while some of them have felt that it is too high and very high. It was very strange to note that as the land size increases, the uncomfortable about prices paid was

higher. It means that higher the land size, input rates were reported high and very high prices category, rather it should have been opposite.

Table 4.8: Whether price paid for the reported inputs related to animal husbandry reasonable

(Percentage of households)

Particular	Marginal	Small	Medium	Large	Very large	Total
Cost of animal seeds						
Cattle/buffalo						
Reasonable	60.0	52.0	49.0	45.6	44.4	52.8
High	19.3	20.0	19.6	15.8	44.4	19.6
Very high	14.1	24.0	30.4	38.6	11.1	24.1
Sheep, goat, piggery, etc.						
Reasonable	100.0	0.0	0.0	0.0	0.0	100.0
High	0.0	0.0	0.0	0.0	0.0	0.0
Very high	0.0	0.0	0.0	0.0	0.0	0.0
Animal feed						
Green fodder						
Reasonable	75.6	46.7	48.0	49.1	22.2	55.4
High	10.4	15.3	17.6	17.5	11.1	14.6
Very high	14.1	38.0	34.3	33.3	66.7	30.0
Dry fodder						
Reasonable	63.7	39.3	41.2	45.6	22.2	47.5
High	21.5	20.0	17.6	17.5	0.0	19.2
Very high	13.3	40.7	40.2	33.3	77.8	32.2
Concentrates						
Reasonable	16.3	8.0	14.7	14.0	11.1	12.8
High	63.0	46.7	44.1	49.1	33.3	51.0
Very high	18.5	44.0	41.2	33.3	55.6	34.7
Others						
Reasonable	20.7	12.0	8.8	5.3	11.1	13.0
High	16.3	18.7	17.6	24.6	22.2	18.5
Very high	8.9	33.3	31.4	26.3	55.6	25.2
Veterinary charges						
Reasonable	51.9	48.0	44.1	49.1	22.2	47.9
High	9.6	15.3	15.7	15.8	44.4	14.3
Very high	10.4	27.3	28.4	28.1	33.3	22.7
Interest						
Reasonable	0.0	0.0	0.0	0.0	0.0	0.0
High	0.0	0.0	0.0	0.0	0.0	0.0
Very high	0.0	0.0	0.0	0.0	11.1	0.2
Labour charges						
Reasonable	0.0	0.7	2.0	0.0	0.0	0.7
High	0.7	0.0	0.0	1.8	0.0	0.4
Very high	0.7	3.3	4.9	3.5	22.2	3.3
Other Expenses						
Reasonable	0.7	0.7	0.0	0.0	0.0	0.4
High	0.0	0.0	0.0	0.0	0.0	0.0
Very high	0.0	0.7	0.0	0.0	11.1	0.4

Source: Field survey data.

Those who were unsatisfied with the prices paid for input were asked to cite reasons for same. The major reasons cited for un-satisfaction were inputs were that inputs are not subsidized, there were no government sales and no control over the price charged by the input seller.

Table 4.9: Reasons for unreasonable prices paid for the inputs related to animal husbandry

(Percentage of households)

Particular	Marginal	Small	Medium	Large	Very large	Total
Cost of animal seeds						
Cattle/buffalo						
Not subsidized	3.7	1.3	1.0	1.8	0.0	2.0
Very few sellers	0.0	0.0	0.0	1.8	0.0	0.2
No govt. sellers	0.7	0.0	0.0	0.0	0.0	0.2
Pvt. sellers collude	0.0	0.0	0.0	0.0	0.0	0.0
No price control	3.0	0.0	1.0	0.0	0.0	1.1
All of the above	29.6	42.7	49.0	50.9	55.6	41.5
Any other	0.0	0.0	0.0	0.0	0.0	0.0
Sheep, goat, piggery, etc.						
Not subsidized	0.0	0.0	0.0	0.0	0.0	0.0
Very few sellers	0.0	0.0	0.0	0.0	0.0	0.0
No govt. sellers	0.0	0.0	0.0	0.0	0.0	0.0
Pvt. sellers collude	0.0	0.0	0.0	0.0	0.0	0.0
No price control	0.0	0.0	0.0	0.0	0.0	0.0
All of the above	100.0	0.0	0.0	0.0	0.0	100.0
Any other	0.0	0.0	0.0	0.0	0.0	0.0
Animal feed						
Green fodder						
Not subsidized	0.0	0.7	1.0	1.8	0.0	0.7
Very few sellers	0.0	0.0	0.0	0.0	0.0	0.0
No govt. sellers	0.0	0.0	0.0	0.0	0.0	0.0
Pvt. sellers collude	0.0	0.0	0.0	0.0	0.0	0.0
No price control	0.0	0.0	1.0	0.0	0.0	0.2
All of the above	24.4	52.7	51.0	49.1	77.8	43.9
Any other	0.0	0.0	0.0	0.0	0.0	0.0
Dry fodder						
Not subsidized	0.0	0.0	1.0	1.8	0.0	0.4
Very few sellers	0.0	0.0	0.0	0.0	0.0	0.0
No govt. sellers	0.0	0.0	0.0	0.0	0.0	0.0
Pvt. sellers collude	0.7	0.7	0.0	3.5	0.0	0.9
No price control	0.0	0.0	1.0	0.0	0.0	0.2
All of the above	30.4	56.7	54.9	45.6	77.8	47.5
Any other	3.7	3.3	2.0	0.0	0.0	2.6
Concentrates						
Not subsidized	25.9	24.0	19.6	19.3	0.0	22.5
Very few sellers	0.0	0.0	0.0	0.0	0.0	0.0
No govt. sellers	0.0	0.0	0.0	0.0	0.0	0.0
Pvt. sellers collude	7.4	1.3	2.9	10.5	11.1	4.9
No price control	26.7	22.0	20.6	19.3	0.0	22.3
All of the above	42.2	62.7	57.8	50.9	77.8	54.3
Any other	0.0	0.0	0.0	0.0	0.0	0.0
Others (Wheat flour, Salt, Jegrry, Mineral Mixer).....						
Not subsidized	1.5	4.0	1.0	0.0	0.0	2.0
Very few sellers	0.0	0.0	0.0	0.0	0.0	0.0
No govt. sellers	0.0	0.0	2.9	0.0	0.0	0.7
Pvt. sellers collude	1.5	0.0	0.0	0.0	0.0	0.4
No price control	0.7	0.0	0.0	1.8	0.0	0.4
All of the above	21.5	48.7	45.1	49.1	77.8	40.4
Any other	0.0	0.0	0.0	0.0	0.0	0.0

Particular	Marginal	Small	Medium	Large	Very large	Total
Veterinary charges						
Not subsidized	2.2	0.0	1.0	0.0	0.0	0.9
Very few sellers	0.0	0.0	0.0	0.0	0.0	0.0
No govt. sellers	0.0	0.7	0.0	0.0	0.0	0.2
Pvt. sellers collude	0.0	0.0	0.0	0.0	0.0	0.0
No price control	1.5	0.0	1.0	0.0	0.0	0.7
All of the above	17.8	42.0	43.1	43.9	77.8	36.0
Any other	0.0	0.0	0.0	0.0	0.0	0.0
Interest						
Not subsidized	0.0	0.0	0.0	0.0	0.0	0.0
Very few sellers	0.0	0.0	0.0	0.0	0.0	0.0
No govt. sellers	0.0	0.0	0.0	0.0	0.0	0.0
Pvt. sellers collude	0.0	0.0	0.0	0.0	0.0	0.0
No price control	0.0	0.0	0.0	0.0	0.0	0.0
All of the above	0.0	0.0	0.0	0.0	11.1	0.2
Any other	0.0	0.0	0.0	0.0	0.0	0.0
Labour charges						
Not subsidized	0.0	0.0	0.0	0.0	0.0	0.0
Very few sellers	0.0	0.0	0.0	0.0	0.0	0.0
No govt. sellers	0.0	0.0	0.0	0.0	0.0	0.0
Pvt. sellers collude	0.0	0.0	0.0	0.0	0.0	0.0
No price control	0.0	0.0	0.0	0.0	0.0	0.0
All of the above	1.5	4.0	6.9	5.3	22.2	4.4
Any other	0.0	0.0	0.0	0.0	0.0	0.0
Other Expenses						
Not subsidized	0.0	0.0	0.0	0.0	0.0	0.0
Very few sellers	0.0	0.0	0.0	0.0	0.0	0.0
No govt. sellers	0.0	0.0	0.0	0.0	0.0	0.0
Pvt. sellers collude	0.0	0.0	0.0	0.0	0.0	0.0
No price control	0.0	0.0	0.0	0.0	0.0	0.0
All of the above	0.0	0.7	0.0	0.0	11.1	0.4
Any other	0.0	0.0	0.0	0.0	0.0	0.0

Source: Field survey data.

4.8 Chapter Summary:

This chapter presented the data on animal products and input markets. It was observed that more than 86 per cent of total milk produced was sold in village, of which sale to local traders was more than half of total produce sold followed by more than one third of total produce was directly sold to households in village in the first disposal itself. The remaining produce was sold during second disposal to the same agencies. During the sale of the animal produce, some of the households have reported their dissatisfactions and reasons cited for same lower price than market price and deductions towards loan borrowed. The disposal was mainly during first attempt only. The major reasons for the unreasonable prices received from the buyers for sold produced were very few

buyers and collude of private buyers. Besides, some other reasons for same were no minimum price and no purchase by any government agency in selected area. The inputs for cattle and buffalo rearing were purchased from market while farm saved inputs were used in case of sheet/goat/piggery rearing. In case of green and dry fodder for animals, home grown fodder was the major source followed by purchased fodder from the nearby farmers or market. The concentrates were mostly purchased from the markets. The private input dealer followed by cooperative and government agency were major procurement stations for cattle and buffalo dairy farmers while for small ruminants, inputs were used from own farm. While in case of animal feed procurement for cattle and buffalo, own farm and local traders were major sources. The expenditure per households for rearing the livestock was reported the lowest by the medium land holders followed by small and large landholding groups. As such one cannot compare it as per landholding group as possession of livestock is different across the groups.

The majority of selected households were opined that rate charged for inputs were reasonable while some of them have felt that it is too high and very high. It was very strange to note that as the land size increases, the uncomfortable about prices paid was higher. It means that higher the land size, input rates were reported high and very high prices category, rather it should have been opposite. Those who were unsatisfied with the prices paid for input were asked to cite reasons for same. The major reasons cited for un-satisfaction were inputs were that inputs are not subsidized, there were no government sales and no control over the price charged by the input seller.

The next chapter presents details on labour market.

Chapter V

Labour Market

5.1 Introduction:

Labour availability is one of the important factors influencing farmers' decisions to adopt new agricultural technologies. Often peak season labour scarcity (at the time of sowing, harvesting and weeding operations) causes operative constraints in crop cultivation. After having discussed about crops and input market, it is important to have the discussion on the labour market.

5.2 Details of labour use:

The details on the types of labour (family labour, farm servant, hired labour, etc.); number of days employed and number of hours per day by the selected households is presented in Table 5.1. It can be seen from the table that on an average, five family labours along with two farms servants were employed for farming and livestock operations along with as and when required support of 13 casual labours for said work. The average number of hours worked by each of the workers either from any category was around 6-7 hours per day.

Table 5.1: Average number of labour employed for farming and livestock operations

Landholding Categories	Family Labour			Farm Servants		Casual Labour	
	Male	Female	Children	Male	Female	Male	Female
Marginal	2	1	2	1	0	5	5
Small	2	2	1	1	0	6	6
Medium	2	2	0	1	0	7	7
Large	2	2	0	2	1	10	10
Very Large	3	2	0	5	0	13	12
Total	2	2	1	1	1	7	6

Source: Field survey data.

Table 5.2: Average hours per day of labour employed for farming and livestock operations

Landholding Categories	Family Labour			Farm Servants		Casual Labour	
	Male	Female	Children	Male	Female	Male	Female
Marginal	7	6	7	6	0	7	7
Small	7	7	8	6	0	7	7
Medium	7	7	0	6	0	8	8
Large	7	7	0	6	6	8	7
Very Large	7	8	0	6	0	8	8
Total	7	7	7	6	6	7	7

Source: Field survey data.

While average number of days employed for farming and livestock operations were worked out to be 98 and 112 days respectively male and female family members, while corresponding figures for farm servants were 197 and 280 and same was around 20 days in both case of casual labours (Table 5.3).

Table 5.3: Average number of days employed for farming and livestock operations

Landholding Categories	Family Labour			Farm Servants		Casual Labour	
	Male	Female	Children	Male	Female	Male	Female
Marginal	85	112	12	168		10	10
Small	99	107	8	198		17	17
Medium	106	113		208		23	23
Large	125	134		229	280	38	38
Very Large	144	99		273		54	54
Total	98	112	10	197	280	19	19

Source: Field survey data.

5.3 Wage rate; whether the wage rate is reasonable & reasons if not

The average wage rate paid to labour engaged in farming and livestock operations as per prevailing market rate in selected study were worked out to be Rs. 220/day for male and Rs. 180 per day for female in case of farm servants, while in case of casual labour, average rate was almost same for both which was Rs. 196/day. Almost two third of selected households opined that rate paid was high and one third households reported same was very high. Thus, more than 88 per cent of households reported high wages rates for labour (Table 5.4).

Table 5.4: Average wage rate paid to labour engaged in farming and livestock operations

Landholding Categories	Farm Servants (in Rs)		Casual Labour(in Rs)	
	Male	Female	Male	Female
Marginal	201	-	169	169
Small	220	-	204	205
Medium	231	-	215	215
Large	252	180	211	210
Very Large	287	-	232	232
Total	223	180	196	196

Table 5.5: Whether wage rate paid to labour for farming and livestock operations is reasonable

(Percentage of households)

Landholding Categories	Reasonable	High	Very High	Total
Marginal	20.6	62.9	16.5	100.0
Small	6.3	61.9	31.8	100.0
Medium	2.6	64.1	33.3	100.0
Large	6.6	73.7	19.7	100.0
Very Large	7.1	57.1	35.7	100.0
total	11.3	63.8	25.0	100.0

While main reason for wage rate paid to labour for farming and livestock operations not being reasonable cited by the selected households was limited labour supply in study area (Table 5.6). The availability of work under MGNREGA as well as control of labour contractor on labour supply also created wage rate hike in the study area.

Table 5.6: Reasons for wage rate paid to labour for farming and livestock operations not being reasonable

(Percentage of households)

Landholding Categories	Limited Labour Supply	Working In MNREGA	Labour Contractors' Control	All Of The Above	Others
Marginal	72.4	1.6	0.6	8.9	1.0
Small	77.8	4.6	3.8	18.4	0.4
Medium	75.6	7.1	4.5	23.7	0.0
Large	73.7	5.3	13.2	19.7	0.0
Very Large	64.3	21.4	0.0	28.6	0.0
Total	74.6	4.3	3.5	16.0	0.5

Source: Field survey data.

5.4 Details of Labour Supply

The details on labour supply including the number of households engaged as wage labour duration and wage rate is presented in Table 5.7 and various constraints in working as wage labour such as low demand, low wage rate, harsh conditions etc. are presented is Table 5.8.

5.4.1 Details of labour supply including the number of households engaged as wage labour duration; wage rate

It can be seen from Table 5.7 that most of the engagement of wage labour was up to nine months and the wage rate prevailing for farm and MGNREGA work was reported to be Rs. 266 per day and Rs. 185 per day respectively.

Table 5.7: Engagement as wage labour

Landholding Categories	Nos of HH Engaged In Wage Labour	Duration of Engagement(In Months)						Wage Rate (Rs/day)	
		1-3 Month	3-6 Month	6-9 Month	All Through The Year	MNREGS (1-3 Month)	MNREGS (6-9 Month)	Others ' Farm	MNREGS
Marginal	130	25	44	30	31	1	2	208	188
Small	55	17	19	8	11	1	0	303	175
Medium	28	6	11	1	10	0	0	351	0
Large	7	0	2	1	4	0	0	457	0
V Large	3	0	0	1	2	0	0	833	0
Total	223	48	76	41	58	2	2	266	185

5.4.2 Details of labour supply various constraints to working as wage labour such as low demand, low wage rate, harsh conditions etc.

The major constrains for worker were that wage rate was low and limited period availability of work. The other constraints faced were poor health and only few able bodied members in the family as well as work available were of hard in nature.

Table 5.8: Constraints related to wage labour (Percentage of households)

Landholding Categories	Work available for a very limited period of time	Wage is very low	Poor health	Only few able bodied members in the family	Very hard work	Wage not paid on time	Frequent problems with payment into bank account
Marginal	68.5	89.2	20.8	10.8	11.5	6.2	3.1
Small	89.1	89.1	40.0	32.7	10.9	5.5	5.5
Medium	89.3	100.0	50.0	28.6	7.1	0.0	0.0
Large	100.0	85.7	57.1	42.9	0.0	0.0	0.0
Very Large	100.0	100.0	100.0	66.7	0.0	0.0	0.0
Total	77.6	90.6	31.4	20.2	10.3	4.9	3.1

Source: Field survey data.

5.5 Chapter Summary:

This chapter presented data and discussion on the labour market. On an average, five family labours along with two farms servants were employed for farming and livestock operations along with as and when required support of 13 casual labours for said work. The average number of hours worked by each of the workers either from any category was around 6-7 hours per day. The average number of days employed for farming and livestock operations were worked out to be 98 and 112 days respectively male and female family members, while corresponding figures for farm servants were 197 and 280 and same was around 20 days in both case of casual labours. The average wage rate paid to labour engaged were worked out to be Rs 220/day for male and Rs. 180 per day for female in case of farm servants, while in case of casual labour, average rate was almost same for both which was Rs. 196/day. Altogether more than 88 per cent of households reported high wages rates for labour due to limited labour supply in study area.

The next chapter presents the details on credit market.

Chapter VI

Credit Market

6.1 Introduction:

As mentioned in introductory chapter, generally large majority of farmers are not only unable to finance their variable expenses out of past savings but also have very little access to formal sector loans, due to their lack of acceptable collateral. Despite the various attempts of the government to provide low-cost production loans to small farmers, only a small percentage of them have actually benefited from such measures. The informal credit market continues to play a dominant role in meeting the credit needs of small farmers and agricultural labourers, for production as well as consumption. In many cases, loans are provided by the local moneylenders at very high rates of interest on the basis of a longstanding patron-client relationship, directly or indirectly. Hence, it is important to have idea about the access to credit sources of different farmer categories in study area.

6.2 Sources of Borrowing in the Study Region

Out of the total selected households, at overall level, more than half of the total households had taken some kind of loan. It was very surprising to note that all the farmers from very large farm holdings group have borrowed money and the lowest borrower ratio was reported in case of marginal landholder. Thus, it is clear from the table 6.1 that incidence of loan increases with the land holding size.

Table 6.1: Whether households borrowed money during the last two years

Landholding Categories	Number of Households	Percent to total sample hh
Marginal	99	31.4
Small	131	54.8
Medium	113	72.1
Large	61	80.3
Very Large	14	100.0
Total	418	52.2

Source: Field survey data.

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

The major sources of the money borrowed by the land holders were formal agencies such as government bank and cooperative society (Table 6.2). On an

average, amount borrowed was Rs. 191885 (Table 6.3). The major two reasons mentioned to borrow loan were to meet capital expenditure in farm business and to meet day to day working expenditure in farm business (Table 6.4).

Table 6.2: Source of money borrowed by the landholding categories (percentage of HHs)

Landholding Categories	Govt. Bank	Cooperative Society	SHGS	Input Dealers/ Commission Agents	Money Lenders	Employer	Total
Marginal	54.0	42.9	1.0	0.0	1.0	1.0	100.0
Small	69.8	28.6	0.0	0.0	0.0	1.5	100.0
Medium	66.2	29.8	0.0	0.4	0.0	3.6	100.0
Large	68.9	28.7	0.0	0.0	0.0	2.5	100.0
Very Large	78.6	21.4	0.0	0.0	0.0	0.0	100.0
Total	65.3	32.1	0.2	0.1	0.2	2.0	100.0

Table 6.3: Total Amount borrowed from the sources (Rs)

Landholding Categories	Govt. Bank	Cooperative Society	SHGs	Input Dealers/ Commission Agents	Money Lenders	Employer	Av amount
Marginal	103963	80435	10000	-	20000	300000	94045
Small	179219	118227	-	-	-	140000	161160
Medium	238946	146791	-	125000	-	370000	215658
Large	335214	201714	-	-	-	466667	300148
Very Large	600000	173000	-	-	-	-	508500
Total	221802	125511	10000	125000	20000	324706	191885

Table 6.4: Purpose of borrowing from the reported source (note: such tables can be prepared for each of the source of borrowing reported by the households)

Landholding Categories	Capital Exp In Farm Business	Current Exp In Farm Business	Consump. Exp	Education	Medical	Others	Total
marginal	54.0	42.9	1.0	0.0	1.0	1.0	100.0
small	69.8	28.6	0.0	0.0	0.0	1.5	100.0
medium	66.2	29.8	0.0	0.4	0.0	3.6	100.0
large	68.9	28.7	0.0	0.0	0.0	2.5	100.0
very large	78.6	21.4	0.0	0.0	0.0	0.0	100.0
total	65.3	32.1	0.2	0.1	0.2	2.0	100.0

Source: Field survey data.

The average rate of interest charged by the formal lending agencies such as banks, cooperative society and SHGs was between 6.2 to 7.1 per cent per year (Table 6.5). It was strange to note that input dealers and commission agents were also lending loan at lower rate of interest of 7.1 per cent as compared to very high rate of 24 percent charged by the private money lenders.

Table 6.5: Median rate of interest charged by the reported source from whom money was borrowed (in %)

Landholding Categories	Govt. Bank	Cooperative Society	SHGs	Input Dealers/ Commission Agents	Money Lenders	Employer
Marginal	6.9	6.2	7.0	-	24.0	7.0
Small	7.1	6.7	-	-	-	7.0
Medium	7.2	7.1	-	7.0	-	9.1
Large	7.1	7.0	-	-	-	10.2
Very Large	7.0	7.0	-	-	-	-
Total	7.1	6.7	7.0	7.0	24.0	8.5

6.4 Number of households that repaid the loan and the amount

The details on total amount repaid to each source and number of households repaying loan are presented in Table 6.6. It can be seen from the table that two third of total households have repaid the loans.

Table 6.6: Total amount repaid to each source and number of households repaying loan

	Total Amount Repaid (Rs.)						
Landholding Categories	Govt. Bank	Cooperative Society	SHGS	Input Dealers/ Commission Agents	Money Lenders	Employer	aLL
Total Amount Repaid (rs.)							
Marginal	108137	88500	10000	-	20000	300000	99721
Small	175931	105446	-	-	-	140000	154995
Medium	242437	136510	-	125000	-	494167	216509
Large	374795	199314	-	-	-	735000	327652
Very Large	553727	173000	-	-	-	-	472143
Total	226535	122046	10000	125000	20000	399643	194262
Number of households which repaid (percentage)							
Marginal	95.3	96.5	100.0	-	100.0	100.0	96.0
Small	97.3	98.7	-	-	-	100.0	97.7
Medium	98.0	100.0	-	100.0	-	75.0	97.8
Large	92.9	100.0	-	-	-	66.7	94.3
Very Large	100.0	100.0	-	-	-	-	100.0
Total	96.5	98.5	100.0	100.0	100.0	82.4	96.9

Source: Field survey data.

6.5 Reasons for non-repayment

Some of them who could not repaid the loans was mainly due to reason that payment would be made after harvesting, due to medical expenses, income is less than the expectation as well as expecting the loan waiver (Table 6.7). During the last year under report, average numbers of loans taken were mostly from formal sector (Table 6.8).

Table 6.7: Reasons for non-repayment of the borrowed money

(percentage)

Landholding Categories	Income Always Less Than Exp	Expecting Debt Waiver	Debt Repayment Postponed	Payment Will Be Made After Harvesting	Major Medical Or Other Expenses	Others
Marginal	0.0	0.0	25.0	25.0	25.0	50.0
Small	33.3	33.3	33.3	0.0	33.3	0.0
Medium	0.0	0.0	40.0	80.0	0.0	0.0
Large	0.0	0.0	0.0	57.1	57.1	0.0
Very Large	-	-	-	-	-	-
Total	7.7	7.7	23.1	38.5	30.8	15.4

Table 6.8: Average Number of loans taken from the source during the last one year

(percentage to total sample households)

Landholding Categories	Govt. Bank	Cooperative Society	SHGs	Input Dealers/ Commission Agents	Money Lenders	Employer
Marginal	1.0	1.0	1.0	-	1.0	1.0
Small	1.0	1.0	-	-	-	1.0
Medium	1.0	1.0	-	1.0	-	1.0
Large	1.0	1.0	-	-	-	1.0
Very Large	1.0	1.0	-	-	-	-
Total	1.0	1.0	1.0	1.0	1.0	1.0

Source: Field survey data.

6.6 Chapter Summary:

Out of the total selected households, at overall level, more than half of the total households had taken some kind of loan. It was very surprising to note that all the farmers from very large farm holdings group have borrowed money and the lowest borrower ratio was reported in case of marginal landholder. Thus, it is clear from the table 6.1 that incidence of loan increases with the size of land holding. The major sources of the money borrowed by the land holders were formal agencies such as government bank and cooperative society to meet capital expenditure in farm business and to meet day to day working expenditure in farm business. The average rate of interest charged by the formal lending agencies such as banks, cooperative society and SHGs was between 6.2 to 7.1 per cent per year. About two third of total households have repaid the loans. Some of them who could not repaid the loans was mainly due to reason that payment would be made after harvesting, due to medical expenses, income is less than the expectation as well as expecting the loan waiver.

The next chapter presents the asset endowments of the households, government support programs and insurance.

Chapter VII

Asset Endowments of the Households, Government Support Programs and Insurance

7.1 Introduction:

In earlier chapters, we have discussed about the output, input and credit market as well as labour market. In this chapter, details on assets possessed by the selected households as well as assess to various schemes by these households is presented and discussed.

7.2 Details on number of households possessing various types of farm and non-farm assets:

It can be seen from the table 7.1 that out of total sample households, 28.4 per cent households have reported purchase of productive assets during the year. It can be seen from the tables 7.2 and 7.3 that the majority of the selected households had purchased the common productive assets such as sickle/chaff-cutter/axe/spade/plough, irrigation pump and livestock. Besides, machinery and equipment as well as land were also purchased by few selected households. On an average, selected household had spent Rs. 166519/- towards procurement of these assets. Across the groups, lowest share of households who purchased productive assets were reported in case of marginal farmers and the highest in case of very large farmer group. Thus, purchase of assets has positive relationship with size of land holdings.

Table 7.1: Total Expenditure incurred on the purchase of productive assets

Landholding Categories	Percent of Households Reporting	Expenditure Per reporting household (Rs/hh)	Expenditure per households (total sample hh) Rs.
Marginal (M)	14.3	53798	7685
Small (S)	34.3	73677	25278
Medium(MD)	34.0	312785	106267
Large (L)	48.7	232738	113307
Very Large (VL)	71.4	414855	296325
Total (T)	28.4	166519	47250

Note: Households who have reported the purchase of productive assets being considered, while another expenditure per households indicate for all the households under study.
Source: Field survey data.

Table 7.2: Number of households reporting purchase of various productive assets

(in percentage to total reported hh)

Landholding Categories	Assets for Farm Business										Assets For Non-Farm Business			Residential Building Including Land
	Land	Building For Farm Business	Fish Tank	Livestock	Poultry/ Duckery	Sickle/Chaff-Cutter/Axe/Spade/Plough	Power Tiller/Tractor	Thresher	Pump	Others	Land &	Machinery/ Equipment	Others	
M	0.0	0.0	0.0	22.2	0.0	66.7	2.2	2.2	13.3	0.0	2.2	4.4	0.0	0.0
S	0.0	0.0	0.0	20.7	3.7	59.8	7.3	6.1	20.7	2.4	0.0	1.2	1.2	0.0
MD	0.0	0.0	0.0	17.0	0.0	45.3	20.8	3.8	35.8	3.8	1.9	3.8	0.0	0.0
L	5.4	0.0	0.0	16.2	0.0	70.3	16.2	13.5	27.0	5.4	0.0	0.0	0.0	0.0
VL	10.0	0.0	0.0	20.0	0.0	50.0	20.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0
T	1.3	0.0	0.0	19.4	1.3	59.0	11.5	5.7	24.7	2.6	0.9	2.2	0.4	0.0

Source: Field survey data.

Table 7.3: Total Expenditure incurred on the Purchase of Productive Assets

(in Rs/hh)

Land holding Categories	Assets for Farm Business									
	Land	Building For Farm Business	Fish Tank	Livestock	Poultry/ Duckery	Sickle/Chaff-Cutter/Axe/ Spade/ Plough	Power Tiller/ Tractor	Thresher	Pump	Others
M	-	-	-	65200	-	3497	40000	95000	112833	-
S	-	-	-	51676	102333	2733	111867	41600	148965	5250
MD	-	-	-	110444	-	2856	239864	89500	57184	5525
L	2250000	-	-	89667	-	4185	432000	56500	39500	97500
VL	2500000	-	-	462500	-	5740	10000	-	168713	-
T	2333333	-	-	90625	102333	3320	229296	58808	95817	36092

Source: Field survey data.

Landholding Categories	Assets For Non-Farm Business			Residential Building Including Land	Av.
	Land & Building	Machinery/ Equipment	Others		
Marginal	40000	406000	-	-	53798
Small	-	800000	500000	-	73677
Medium	10000000	800000	-	-	312785
Large	-	-	-	-	232738
Very Large	-	-	-	-	414855
Total	5020000	642400	500000	-	166519

Source: Field survey data.

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

Some of the households have reported the expenditure on repair and maintenance of the assets which they had (Table 7.4). It can be seen from the table that about one fourth of total selected households have reported expenditure on repair cost and on an average, Rs. 11128/- were spent towards repairing cost of the same. Out of the total reported households (repair), majority of the households had to repair irrigation pumps which was mainly due to power fluctuation or low quality water for which about Rs. 10542/- cost was incurred (Table 7.5 and 7.6). Besides, repair of power tiller, tractor, as well as small machinery like chaff cutter and plough were also reported. As expected, lowest number of marginal farmers had reported the lowest expenditure on repair of productive assets, may be due low possession of assets.

Table 7.4: Total expenditure incurred on the repair/improvement of productive assets

Landholding Categories	Households Reporting repair (% to total hh)	Expenditure by reporting hh (Rs./hh)
Marginal	11.7	6832
Small	24.3	10507
Medium	36.5	12023
Large	42.1	13734
Very Large	57.1	18688
Total	24.0	11128

Source: Field survey data.

Table 7.5: Number of households reporting repair/improvement of productive assets
(in percentage)

Landholding Categories	Assets For Farm Business										Assets For Non-Farm Business			Residential Building Including Land
	Land	Building For Farm Business	Fish Tank	Livestock	Poultry/Duckery	Sickle/Chaff-Cutter/Axe/Spade/Plough	Power Tiller/Tractor	Thresher	Pump	Others	Land&Building	Machinery/Equipment	Others	
Marginal	0.0	0.0	0.0	0.0	0.0	13.5	35.1	0.0	56.8	0.0	0.0	0.0	0.0	0.0
Small	0.0	0.0	0.0	0.0	0.0	17.2	41.4	8.6	67.2	3.4	0.0	0.0	1.7	0.0
Medium	0.0	0.0	0.0	0.0	0.0	14.0	43.9	12.3	61.4	1.8	0.0	0.0	0.0	0.0
Large	0.0	0.0	0.0	0.0	0.0	9.4	75.0	18.8	46.9	0.0	0.0	0.0	0.0	0.0
Very Large	0.0	0.0	0.0	0.0	0.0	0.0	87.5	50.0	62.5	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	0.0	0.0	13.5	48.4	11.5	59.9	1.6	0.0	0.0	0.5	0.0

Source: Field survey data.

Table7.6: Total Expenditure on repair/improvement of productive assets

(in Rs)

Land holding Categories	Assets for Farm Business										Assets For Non-Farm Business			Residential Building Including Land
	Land	Building For Farm Business	Fish Tank	Livestock	Poultry/Duckery	Sickle/Chaff-Cutter/Axe/Spade/Plough	Power Tiller/Tractor	Thresher	Pump	Others	Land&Building	Machinery/Equipment	Others	
Marginal	-	-	-	-	-	5700	8769	-	5252	-	-	-	-	-
Small	-	-	-	-	-	1540	7279	32340	6092	7500	-	-	5000	-
Medium	-	-	-	-	-	3063	13288	5429	8160	5000	-	-	-	-
Large	-	-	-	-	-	3667	11333	11167	5967	-	-	-	-	-
Very Large	-	-	-	-	-	-	12500	8750	5400	-	-	-	-	-
Total	-	-	-	-	-	3054	10542	13714	6522	6667	-	-	5000	-

Source: Field survey data.

Very few households have reported sale of the productive assets (5.1 per cent of total households) towards which average receipt of Rs. 15042/- per household was reported (Table 7.7). The highest share of households (reported sale to total households) reported sale of productive assets was estimated in small and medium as well as very large landholders group. Almost 83 per cent of households (out of reported sale hh) had sold livestock followed by 7.3 percent of total households sold their land. Sale of small machinery/equipment, poultry birds as well as small power tillers are also reported (Table 7.8). Overall, receipt of sale of assets estimated to be Rs. 86933 and net expenditure on productive assets was estimated to be Rs. 89147/- (Tables 7.9 and 7.10).

Table 7.7: Total receipt obtained from the sale of productive assets

Landholding Categories	Number of Households Reporting	Receipt (Rs) per reporting hh	Receipt (Rs) per sample hh
Marginal	2.2	63571	1413
Small	7.1	587585	41795
Medium	7.1	78955	5567
Large	6.6	96200	6329
Very Large	7.1	250000	17857
Total	5.1	293499	15042

Source: Field survey data.

Table 7.8: Number of households reporting sale of productive assets

(in percentage)

Land holding Categories	Assets For Farm Business										Assets For Non-Farm Business			Residential Building Including Land
	Land	Building For Farm Business	Fish Tank	Livestock	Poultry/Duckery	Sickle/Chaff - Cutter/Axe/ Spade/Plough	Power Tiller/Tractor	Thresher	Pump	Others	Land & Building	Machinery/ Equipment	Others	
M	0.0	0.0	0.0	85.7	0.0	0.0	0.0	0.0	0.0	0.0	14.3	14.3	14.3	0.0
S	17.6	0.0	0.0	82.4	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MD	0.0	0.0	0.0	81.8	0.0	18.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VL	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	7.3	0.0	0.0	82.9	2.4	4.9	2.4	0.0	0.0	0.0	2.4	2.4	2.4	0.0

Table 7.9: Total receipts from sale of productive assets (in Rs/reporting hh)

Landholding Categories	Assets For Farm Business									
	Land	Building For Farm Business	Fish Tank	Livestock	Poultry/ Duckery	Sickle/Chaff - Cutter/Axe/ Spade/Plough	Power Tiller/Tractor	Thresher	Pump	Others
M	-	-	-	8888.889	-	-	-	-	-	-
S	1033333	-	-	3453.827	12000	-	-	-	-	-
MD	-	-	-	10506.17	-	4375	-	-	-	-
L	-	-	-	19240	-	-	-	-	-	-
VL	-	-	-	-	-	-	250000	-	-	-
Total	1033333	-	-	2014.663	12000	4375	250000	-	-	-

Landholding Categories	Assets For Non-Farm Business			Residential Building Including Land	Average
	Land & Building	Machinery/Equipment	Others		
Marginal	50000	50000	25000	-	25476
Small	-	-	-	-	185903
Medium	-	-	-	-	9391
Large	-	-	-	-	19240
Very Large	-	-	-	-	250000
Total	50000	50000	25000	-	86933

Table 7. 10: Net Expenditure on Productive Assets (in Rs)

Landholding Categories	Net Expenditure (Rs.) Per Sample Households
Marginal	32775
Small	-32096
Medium	202400
Large	178538
Very Large	337338
Total	89147

Note: net expenditure can be calculated as the difference between the total expenditure incurred in the purchase of productive assets and receipts from the sale of those assets

Source: Field survey data.

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

Among the various factors which are determinant for agricultural growth and income of the farmer, technical knowhow and advice on various related parameters is important one. The information was collected from the selected households about the same and presented in Table 7.11. It can be seen from the table that major source of information for selected households was newspaper/radio/tv followed by nearby progressive farmer and gram sevek as well as extension officer of the respective area. Higher the land size, more the access to sources of technical advice. Non availability of information was main reason for the households which had no access of technical advice (Table 7.12a) while some of them were not aware of the same (Table 7.12b). The need based contact was major reason in most of the cases (Table 7.13).

Table 7.11: Sources of Technical Advice accessed for Crops grown

(percentage)

Landholding categories	Extension agents/ Gram Sevak	Krishi Vigyan Kendra	Agri. University/ college	Pvt. Commercial agents	Progressive farmer	Radio/Tv/ Newspaper/ nternet	Veterinary dept.	NGO
Marginal	16.5	1.0	4.1	8.9	23.8	37.8	0.6	1.9
Small	23.0	1.7	3.3	25.1	41.8	54.0	0.4	4.6
Medium	35.9	3.8	7.7	35.9	52.6	58.3	1.3	9.0
Large	52.6	3.9	14.5	39.5	56.6	65.8	1.3	6.6
Very large	71.4	0.0	21.4	64.3	78.6	85.7	0.0	28.6
Total	26.6	2.0	5.9	22.9	38.9	50.1	0.8	5.0

Source: Field survey data.

Table 7.12a: Number of hh not accessing the sources of technical advice

(percentage of HHs)

Landholding categories	Extension agents/Gram Sevak	Krishi Vigyan Kendra	Agri. University/ college	Pvt. Commercial agents	Progressive farmer	Radio/Tv/Newspaper/ Internet	Veterinary dept.	NGO
Marginal	83.5	99.0	95.9	91.1	76.2	62.2	99.4	98.1
Small	77.0	98.3	96.7	74.9	58.2	46.0	99.6	95.4
Medium	64.1	96.2	92.3	64.1	47.4	41.7	98.7	91.0
Large	47.4	96.1	85.5	60.5	43.4	34.2	98.7	93.4
Very large	28.6	100.0	78.6	35.7	21.4	14.3	100.0	71.4
Total	73.4	98.0	94.1	77.1	61.1	49.9	99.3	95.0

Source: Field survey data.

Table 7.12b: Reasons for not accessing the sources of technical advice

(percentage of HHs reporting no access)

Particular	Marginal	Small	Medium	Large	Very large	Total
Extension agents/Gram Sevak						
Not aware	47.9	41.8	35.0	33.3	75.0	43.1
Not available	49.4	48.9	57.0	58.3	25.0	50.9
Not required	2.7	9.2	8.0	8.3	0.0	6.0
Others	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Krishi vigyan kendra						
Not aware	5.1	14.5	12.7	11.0	21.4	10.2
Not available	93.6	79.6	80.0	84.9	71.4	85.6
Not required	1.3	6.0	7.3	4.1	7.1	4.2
Others	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Agri.university/college						
Not aware	54.3	46.8	44.4	38.5	27.3	48.3
Not available	43.7	48.1	46.5	49.2	63.6	46.3
Not required	2.0	5.2	9.0	12.3	9.1	5.3
Others	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Pvt. Commercial agents						
Not aware	3.1	10.6	3.0	8.7	0.0	5.7
Not available	95.8	87.7	93.0	91.3	100.0	92.7
Not required	1.0	1.1	4.0	0.0	0.0	1.5
Others	0.0	0.6	0.0	0.0	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Progressive farmer						
Not aware	34.6	32.4	24.3	21.2	33.3	31.5
Not available	48.3	48.9	56.8	51.5	33.3	49.9
Not required	16.7	18.0	18.9	24.2	33.3	18.0
Others	0.4	0.7	0.0	3.0	0.0	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Radio/tv/newspaper/internet						
Not aware	37.8	36.4	26.2	26.9	50.0	34.8
Not available	59.2	60.9	73.8	65.4	50.0	62.4
Not required	3.1	2.7	0.0	7.7	0.0	2.8
Others	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Veterinary dept.						
Not aware	4.5	14.7	18.2	18.7	14.3	11.7
Not available	92.0	74.4	74.0	74.7	57.1	81.0
Not required	3.2	10.9	7.8	6.7	28.6	7.2
Others	0.3	0.0	0.0	0.0	0.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
NGO						
Not aware	56.0	43.9	40.1	38.0	50.0	47.6
Not available	42.7	47.4	48.6	50.7	40.0	45.9
Not required	1.3	8.3	11.3	11.3	10.0	6.3
Others	0.0	0.4	0.0	0.0	0.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Field survey data.

Table 7.13: Frequency of Contact with the Sources

(percentage of HHs)

Particular	Marginal	Small	Medium	Large	Very large	Total
Extension agents/Gram Sevak						
Daily	0.0	0.0	0.0	0.0	0.0	0.0
Weekly	5.4	6.3	5.1	14.5	7.1	6.5
Monthly	6.0	4.2	2.6	1.3	0.0	4.3
Seasonally	0.3	0.4	0.0	1.3	0.0	0.4
Need based	4.8	11.7	28.2	34.2	64.3	15.3
Casual contact	0.0	0.4	0.0	1.3	0.0	0.3
Total	16.5	23.0	35.9	52.6	71.4	26.6
Krishi Vigyan Kendra						
Daily	0.0	0.0	0.0	0.0	0.0	0.0
Weekly	0.0	0.0	0.0	0.0	0.0	0.0
Monthly	0.0	0.0	0.0	0.0	0.0	0.0
Seasonally	0.0	0.0	0.0	0.0	0.0	0.0
Need based	1.0	1.3	3.8	3.9	0.0	1.9
Casual contact	0.0	0.4	0.0	0.0	0.0	0.1
Total	1.0	1.7	3.8	3.9	0.0	2.0
Agri. University/college						
Daily	0.3	0.0	0.0	1.3	0.0	0.3
Weekly	0.0	0.0	0.0	0.0	0.0	0.0
Monthly	0.0	0.0	0.0	0.0	0.0	0.0
Seasonally	1.0	0.8	1.3	2.6	7.1	1.3
Need based	2.9	1.7	5.1	10.5	14.3	3.9
Casual contact	0.0	0.8	1.3	0.0	0.0	0.5
Total	4.1	3.3	7.7	14.5	21.4	5.9
Pvt. Commercial agents						
Daily	0.0	0.0	0.0	0.0	0.0	0.0
Weekly	0.0	0.0	0.0	0.0	0.0	0.0
Monthly	0.3	0.4	0.0	1.3	0.0	0.4
Seasonally	3.8	8.8	14.1	19.7	35.7	9.4
Need based	3.8	15.9	19.2	13.2	28.6	11.8
Casual contact	1.0	0.0	2.6	5.3	0.0	1.4
Total	8.9	25.1	35.9	39.5	64.3	22.9
Progressive farmer						
Daily	1.0	0.8	0.6	1.3	0.0	0.9
Weekly	3.8	3.3	1.3	2.6	0.0	3.0
Monthly	3.2	0.0	1.3	0.0	0.0	1.5
Seasonally	13.3	31.4	44.2	36.8	71.4	28.0
Need based	2.5	6.3	4.5	15.8	7.1	5.4
Casual contact	0.0	0.0	0.6	0.0	0.0	0.1
Total	23.8	41.8	52.6	56.6	78.6	38.9
Radio/tv/newspaper/internet						
Daily	17.5	36.4	46.8	48.7	71.4	32.8
Weekly	7.0	5.4	3.8	2.6	14.3	5.6
Monthly	4.8	4.6	3.2	1.3	0.0	4.0
Seasonally	8.3	7.5	4.5	13.2	0.0	7.6
Need based	0.3	0.0	0.0	0.0	0.0	0.1
Casual contact	0.0	0.0	0.0	0.0	0.0	0.0
Total	37.8	54.0	58.3	65.8	85.7	50.1

Particular	Marginal	Small	Medium	Large	Very large	Total
Veterinary dept.						
Daily	0.0	0.0	0.6	0.0	0.0	0.1
Weekly	0.0	0.4	0.0	0.0	0.0	0.1
Monthly	0.0	0.0	0.0	0.0	0.0	0.0
Seasonally	0.0	0.0	0.0	0.0	0.0	0.0
Need based	0.3	0.0	0.6	1.3	0.0	0.4
Casual contact	0.3	0.0	0.0	0.0	0.0	0.1
Total	0.6	0.4	1.3	1.3	0.0	0.8
NGO						
Daily	0.0	0.0	0.0	0.0	0.0	0.0
Weekly	0.0	0.0	0.0	0.0	0.0	0.0
Monthly	0.0	0.0	0.0	0.0	0.0	0.0
Seasonally	0.0	0.8	1.3	0.0	0.0	0.5
Need based	0.3	0.4	2.6	1.3	28.6	1.4
Casual contact	1.6	3.3	5.1	5.3	0.0	3.1
Total	1.9	4.6	9.0	6.6	28.6	5.0

Source: Field survey data.

Those households who have adopted technical advice from the reported source have adopted the same totally (as given by the krishi vigyan Kendra and private commercial agents), while adoption of advice given by veterinary department was found to be poor than other sources (Table 7.14a and 7.14b).

Table 7.14a: Number of households which adopted the advice from the reported source

(Percentage of households)

Landholding categories	Extension agents/gram sevak	Krishi vigyan kendra	Agri. University/college	Pvt. Commercial agents	Progressive farmer	Radio/tv/newspaper/internet	Veterinary dept.	NGOs
%to reported hh								
Marginal	96.2	100.0	100.0	100.0	90.7	93.3	50.0	100.0
Small	96.4	100.0	100.0	100.0	96.0	94.6	100.0	100.0
Medium	98.2	100.0	100.0	100.0	98.8	90.1	100.0	92.9
Large	97.5	100.0	100.0	100.0	100.0	98.0	100.0	100.0
Very large	100.0	-	100.0	100.0	100.0	91.7	-	100.0
Total	97.2	100.0	100.0	100.0	96.1	93.5	83.3	97.5
% to sample hh								
Marginal	15.9	1.0	4.1	8.9	21.6	35.2	0.3	1.9
Small	22.2	1.7	3.3	25.1	40.2	51.0	0.4	4.6
Medium	35.3	3.8	7.7	35.9	51.9	52.6	1.3	8.3
Large	51.3	3.9	14.5	39.5	56.6	64.5	1.3	6.6
Very large	71.4	0.0	21.4	64.3	78.6	78.6	0.0	28.6
Total	25.9	2.0	5.9	22.9	37.4	46.9	0.6	4.9

Source: Field survey data.

Table 7.14b: Number of households which not adopted the advice from the reported source (Percentage of households)

Landholding categories	extension agents/ Gram Sevak	krishi vigyan kendra	agri. university/college	pvt.commercial agents	Progressive farmer	radio/tv/ newspaper/internet	veterinary dept.	NGO
%to reported hh								
M	3.8	0.0	0.0	0.0	9.3	6.7	50.0	0.0
S	3.6	0.0	0.0	0.0	4.0	5.4	0.0	0.0
MD	1.8	0.0	0.0	0.0	1.2	9.9	0.0	7.1
L	2.5	0.0	0.0	0.0	0.0	2.0	0.0	0.0
VL	0.0	-	0.0	0.0	0.0	8.3	-	0.0
Total	2.8	0.0	0.0	0.0	3.9	6.5	16.7	2.5
% to Sample HH								
M	0.6	0.0	0.0	0.0	2.2	2.5	0.3	0.0
S	0.8	0.0	0.0	0.0	1.7	2.9	0.0	0.0
MD	0.6	0.0	0.0	0.0	0.6	5.8	0.0	0.6
L	1.3	0.0	0.0	0.0	0.0	1.3	0.0	0.0
VL	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.0
Total	0.8	0.0	0.0	0.0	1.5	3.3	0.1	0.1

Source: Field survey data.

The major reasons for non-adoption of technical advice received were mostly lack of technical advice follow up and lack of financial resources (table 7.15).

Table 7.15: Reasons for not adopting the recommended advice from the reported source

(Percent of households)

Particular	Marginal	Small	Medium	Large	Very Large	Total
Extension agents/Gram Sevak						
Lack of financial resources	0.0	0.0	0.0	0.0	-	0.0
Non-availability of input & physical resources	0.0	0.0	0.0	0.0	-	0.0
Lack of technical advice for follow-up	100.0	100.0	100.0	100.0	-	100.0
Difficulty in storage, processing & marketing of products	0.0	0.0	0.0	0.0	-	0.0
Others	0.0	0.0	0.0	0.0	-	0.0
Krishi Vigyan Kendra						
Lack of financial resources	100.0	100.0	100.0	100.0	-	100.0
Non-availability of input & physical resources	0.0	0.0	0.0	0.0	-	0.0
Lack of technical advice for follow-up	0.0	0.0	0.0	0.0	-	0.0
Difficulty in storage, processing &marketing of products	0.0	0.0	0.0	0.0	-	0.0
Others	0.0	0.0	0.0	0.0	-	0.0

Agri. University/college						
Lack of financial resources	0.0	0.0	0.0	0.0	0.0	0.0
Non-availability of input & physical resources	0.0	0.0	0.0	0.0	0.0	0.0
Lack of technical advice for follow-up	0.0	0.0	0.0	0.0	0.0	0.0
Difficulty in storage, processing & marketing of products	0.0	0.0	0.0	0.0	0.0	0.0
Others	0.0	0.0	0.0	0.0	0.0	0.0
Pvt. Commercial agents						
Lack of financial resources	0.0	0.0	0.0	0.0	0.0	0.0
Non-availability of input & physical resources	0.0	0.0	0.0	0.0	0.0	0.0
Lack of technical advice for follow-up	0.0	0.0	0.0	0.0	0.0	0.0
Difficulty in storage, processing & marketing of products	0.0	0.0	0.0	0.0	0.0	0.0
Others	0.0	0.0	0.0	0.0	0.0	0.0
Progressive farmer						
Lack of financial resources	100.0	100.0	100.0	-	-	100.0
Non-availability of input & physical resources	0.0	0.0	0.0	-	-	0.0
Lack of technical advice for follow-up	0.0	0.0	0.0	-	-	0.0
Difficulty in storage, processing & marketing of products	0.0	0.0	0.0	-	-	0.0
Others	0.0	0.0	0.0	-	-	0.0
Radio/tv/newspaper/internet						
Lack of financial resources	62.5	42.9	66.7	0.0	100.0	57.7
Non-availability of input & physical resources	0.0	0.0	0.0	100.0	0.0	3.8
Lack of technical advice for follow-up	12.5	28.6	11.1	0.0	0.0	15.4
Difficulty in storage, processing & marketing of products	0.0	14.3	11.1	0.0	0.0	7.7
Others	25.0	14.3	11.1	0.0	0.0	15.4
Veterinary dept.						
Lack of financial resources	0.0	-	-	-	-	0.0
Non-availability of input & physical resources	0.0	-	-	-	-	0.0
Lack of technical advice for follow-up	100.0	-	-	-	-	100.0
Difficulty in storage, processing & marketing of products	0.0	-	-	-	-	0.0
Others	0.0	-	-	-	-	0.0
NGO						
Lack of financial resources	-	-	0.0	-	-	0.0
Non-availability of input & physical resources	-	-	0.0	-	-	0.0
Lack of technical advice for follow-up	-	-	100.0	-	-	100.0
Difficulty in storage, processing & marketing of products	-	-	0.0	-	-	0.0
Others	-	-	0.0	-	-	0.0

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

Table 7.16: Whether the Adopted advice was Useful

(Percentage of households those who taken)

Particular	Marginal	Small	Medium	Large	Very large	Total
Extension agents/Gram Sevak						
Useful	86.5	89.1	85.7	95.0	100.0	89.2
Not useful	1.9	1.8	7.1	2.5	0.0	3.3
Don't know	11.5	9.1	7.1	2.5	0.0	7.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Krishi Vigyan Kendra						
Useful	100.0	100.0	83.3	66.7	-	87.5
Not useful	0.0	0.0	16.7	33.3	-	12.5
Don't know	0.0	0.0	0.0	0.0	-	0.0
Total	100.0	100.0	100.0	100.0	-	100.0
Agri. University/college						
Useful	100.0	100.0	100.0	100.0	100.0	100.0
Not useful	0.0	0.0	0.0	0.0	0.0	0.0
Don't know	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Pvt. Commercial agents						
Useful	96.4	98.3	92.9	86.7	88.9	94.0
Not useful	3.6	1.7	7.1	13.3	11.1	6.0
Don't know	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Progressive farmer						
Useful	60.0	74.6	78.7	84.4	83.3	73.4
Not useful	0.0	3.5	4.5	8.9	0.0	3.4
Don't know	40.0	21.9	16.9	6.7	16.7	23.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Radio/tv/newspaper/internet						
Useful	66.7	78.7	85.4	93.9	81.8	78.7
Not useful	8.1	6.6	7.3	2.0	9.1	6.7
Don't know	25.2	14.8	7.3	4.1	9.1	14.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
Veterinary dept.						
Useful	50.0	100.0	100.0	100.0	-	83.3
Not useful	0.0	0.0	0.0	0.0	-	0.0
Don't know	50.0	0.0	0.0	0.0	-	16.7
Total	100.0	100.0	100.0	100.0	-	100.0
NGO						
Useful	83.3	90.9	69.2	80.0	100.0	82.1
Not useful	16.7	0.0	23.1	20.0	0.0	12.8
Don't know	0.0	9.1	7.7	0.0	0.0	5.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Field survey data.

Those households have adopted the advice from the mentioned source, majority of them have reported that advice was useful (Table 7.16). The intensity of usefulness was the highest in case of advice received from agricultural university or college while same was the lowest in case of advice received from progressive farmers. The impact of adoption of advice from the reported sources is presented in Table 7.17 which indicate that impact was reported beneficial (put together moderately beneficial and beneficial) in all cases. None of the advice was reported to harmful.

Table 7.17: Impact of the adoption of advice from the reported source

(Percentage of households)

Particular	Marginal	Small	Medium	Large	Very large	Total
Extension agents/Gram Sevak						
Beneficial	23.1	40.0	53.6	67.5	80.0	46.5
Moderately beneficial	67.3	50.9	37.5	27.5	20.0	45.5
No effect	0.0	1.8	3.6	2.5	0.0	1.9
Harmful	1.9	1.8	0.0	0.0	0.0	0.9
Don't know	7.7	5.5	5.4	2.5	0.0	5.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Krishi Vigyan Kendra						
Beneficial	0.0	75.0	33.3	66.7	-	43.8
Moderately beneficial	100.0	25.0	66.7	33.3	-	56.3
No effect	0.0	0.0	0.0	0.0	-	0.0
Harmful	0.0	0.0	0.0	0.0	-	0.0
Don't know	0.0	0.0	0.0	0.0	-	0.0
Total	100.0	100.0	100.0	100.0	-	100.0
Agri. university/college						
Beneficial	23.1	37.5	66.7	63.6	0.0	44.7
Moderately beneficial	69.2	62.5	33.3	36.4	100.0	53.2
No effect	7.7	0.0	0.0	0.0	0.0	2.1
Harmful	0.0	0.0	0.0	0.0	0.0	0.0
Don't know	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Pvt. Commercial agents						
Beneficial	60.7	70.0	44.6	43.3	44.4	55.2
Moderately beneficial	39.3	26.7	55.4	56.7	55.6	43.7
No effect	0.0	3.3	0.0	0.0	0.0	1.1
Harmful	0.0	0.0	0.0	0.0	0.0	0.0
Don't know	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Progressive farmer						
Beneficial	30.7	37.0	52.4	65.1	36.4	43.4
Moderately beneficial	41.3	50.0	34.1	27.9	54.5	40.8
No effect	0.0	1.0	3.7	4.7	0.0	1.9
Harmful	0.0	0.0	0.0	0.0	0.0	0.0
Don't know	28.0	12.0	9.8	2.3	9.1	13.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Radio/tv/newspaper/internet						
Beneficial	15.1	32.6	40.7	44.0	58.3	31.4
Moderately beneficial	42.0	41.1	34.1	48.0	16.7	39.9
No effect	17.6	10.1	11.0	2.0	16.7	11.7
Harmful	0.8	0.0	0.0	0.0	0.0	0.2
Don't know	24.4	16.3	14.3	6.0	8.3	16.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
Veterinary dept.						
Beneficial	50.0	0.0	50.0	100.0	-	50.0
Moderately beneficial	0.0	100.0	50.0	0.0	-	33.3
No effect	0.0	0.0	0.0	0.0	-	0.0
Harmful	0.0	0.0	0.0	0.0	-	0.0
Don't know	50.0	0.0	0.0	0.0	-	16.7
Total	100.0	100.0	100.0	100.0	-	100.0
NGO						
Beneficial	16.7	9.1	50.0	60.0	0.0	30.0
Moderately beneficial	50.0	72.7	28.6	40.0	100.0	52.5
No effect	16.7	0.0	7.1	0.0	0.0	5.0
Harmful	0.0	0.0	0.0	0.0	0.0	0.0
Don't know	16.7	18.2	14.3	0.0	0.0	12.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Field survey data.

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

It has been cited by many reports that awareness among farmers about the minimum support prices declared by the government of India is very poor. Therefore, attempt was made in this study to know the same. It can be seen from the table 7.18 that hardly 38 percent of selected farmer households were aware about the MSP. Those who were aware, majority of them were not aware about the procurement agencies for the crops (Table 7.19).

Across the land groups, hardly one fourth of the marginal famers were aware about the MSP while more than one half of the large farmers were aware about the same. Thus, larger the size of land holdings higher the awareness about

the MSP. Recent efforts to improve farmers' income have been focused on raising Minimum Support Prices (MSPs). Historical evidence shows that MSP does not directly translate into higher income for farmers due to a deficient and ineffective implementation framework. Additionally, high MSPs result in market distortions and render Indian exports uncompetitive in world markets.

Table 7.18: Whether aware of MSP related to the reported crops

(Percentage of households)

Crop Code	Aware of MSP					
	Marginal	Small	Medium	Large	Very large	Total
101	35.8	45.3	66.7	96.8	100.0	49.6
102	0.0	0.0	42.9	-	-	18.8
103	26.1	30.2	47.6	30.8	0.0	32.0
104	0.0	0.0	66.7	100.0	-	10.3
106	28.7	47.2	51.6	81.8	100.0	44.1
201	20.0	-	100.0	50.0	-	44.4
202	11.1	7.7	57.1	75.0	-	23.8
288	0.0	66.7	0.0	-	-	25.0
401	30.8	47.4	64.7	100.0	100.0	58.3
511	-	80.0	40.0	25.0	0.0	40.0
588	0.0	50.0	75.0	0.0	0.0	33.3
601	0.0	0.0	20.0	0.0	-	4.5
688	0.0	16.7	0.0	0.0	0.0	4.5
708	-	0.0	50.0	0.0	0.0	6.7
788	0.0	0.0	0.0	0.0	-	0.0
1001	55.0	67.2	77.1	69.6	85.7	69.9
1002	11.4	22.7	28.6	0.0	-	16.9
1003	33.3	21.4	14.3	20.0	0.0	18.9
1004	52.6	43.2	55.0	44.4	0.0	47.7
1101	30.2	53.5	57.1	66.7	77.8	53.0
1302	7.7	3.3	0.0	0.0	0.0	3.6
1401	33.3	22.2	20.0	-	-	23.5
1488	0.0	0.0	0.0	0.0	0.0	0.0
1702	-	-	-	0.0	-	0.0
1888	0.0	-	-	0.0	-	0.0
Grand Total	25.4	35.9	49.0	53.9	50.0	38.0

Source: Field survey data.

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

Table 7.19: Agencies available for procuring the crops reported at MSP

(Percentage of reported households known about MSP)

Crop Code	Marginal						Small					
	FCI	CCI	NAFED	State Civil Supplies	Do not know	Total	FCI	CCI	NAFED	State Civil Supplies	Do not know	Total
101	22.4	0.0	3.4	0.0	74.1	100.0	48.7	0.0	2.6	0.0	48.7	100.0
102	-	-	-	-	-	-	-	-	-	-	-	-
103	0.0	0.0	16.7	0.0	83.3	100.0	7.7	0.0	7.7	0.0	84.6	100.0
104	-	-	-	-	-	-	-	-	-	-	-	-
106	40.0	0.0	4.0	0.0	56.0	100.0	60.0	0.0	4.0	0.0	36.0	100.0
201	0.0	0.0	0.0	0.0	100.0	100.0	-	-	-	-	-	-
202	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	100.0	100.0
288	-	-	-	-	-	-	0.0	0.0	50.0	0.0	50.0	100.0
401	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	22.2	0.0	77.8	100.0
511	-	-	-	-	-	-	0.0	0.0	25.0	0.0	75.0	100.0
588	-	-	-	-	-	-	0.0	0.0	0.0	0.0	100.0	100.0
601	-	-	-	-	-	-	-	-	-	-	-	-
688	-	-	-	-	-	-	0.0	0.0	100.0	0.0	0.0	100.0
708	-	-	-	-	-	-	-	-	-	-	-	-
788	-	-	-	-	-	-	-	-	-	-	-	-
1001	0.0	18.2	9.1	27.3	45.5	100.0	0.0	12.8	2.6	30.8	53.8	100.0
1002	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	100.0	100.0
1003	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	66.7	0.0	33.3	100.0
1004	0.0	0.0	20.0	0.0	80.0	100.0	0.0	0.0	6.3	0.0	93.8	100.0
1101	0.0	15.4	0.0	0.0	84.6	100.0	2.6	28.9	0.0	7.9	60.5	100.0
1302	50.0	0.0	50.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	100.0
1401	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	100.0
1488	-	-	-	-	-	-	-	-	-	-	-	-
1702	-	-	-	-	-	-	-	-	-	-	-	-
1888	-	-	-	-	-	-	-	-	-	-	-	-
Grand Total	17.4	2.9	6.5	2.2	71.0	100.0	18.0	8.0	6.0	7.5	60.5	100.0

Source: Field survey data.

	Medium						Large					
Crop Code	FCI	CCI	NAFED	State Civil Supplies	Do not know	Total	FCI	CCI	NAFED	State Civil Supplies	Do not know	Total
101	38.2	0.0	0.0	0.0	61.8	100.0	46.7	0.0	13.3	0.0	40.0	100.0
102	0.0	0.0	0.0	0.0	100.0	100.0	-	-	-	-	-	-
103	10.0	0.0	10.0	0.0	80.0	100.0	0.0	0.0	0.0	0.0	100.0	100.0
104	50.0	0.0	0.0	0.0	50.0	100.0	0.0	0.0	0.0	0.0	100.0	100.0
106	50.0	0.0	0.0	6.3	43.8	100.0	55.6	0.0	11.1	0.0	33.3	100.0
201	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0
202	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0
288	-	-	-	-	-	-	-	-	-	-	-	-
401	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	40.0	0.0	60.0	100.0
511	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	100.0	100.0
588	0.0	0.0	0.0	33.3	66.7	100.0	-	-	-	-	-	-
601	0.0	0.0	0.0	0.0	100.0	100.0	-	-	-	-	-	-
688	-	-	-	-	-	-	-	-	-	-	-	-
708	0.0	0.0	0.0	0.0	100.0	100.0	-	-	-	-	-	-
788	-	-	-	-	-	-	-	-	-	-	-	-
1001	0.0	5.4	2.7	24.3	67.6	100.0	0.0	6.3	0.0	37.5	56.3	100.0
1002	0.0	0.0	0.0	0.0	100.0	100.0	-	-	-	-	-	-
1003	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	100.0	100.0
1004	0.0	0.0	9.1	9.1	81.8	100.0	0.0	0.0	25.0	0.0	75.0	100.0
1101	2.3	4.5	0.0	4.5	88.6	100.0	0.0	10.0	0.0	0.0	90.0	100.0
1302	-	-	-	-	-	-	-	-	-	-	-	-
1401	0.0	0.0	0.0	0.0	100.0	100.0	-	-	-	-	-	-
1488	-	-	-	-	-	-	-	-	-	-	-	-
1702	-	-	-	-	-	-	-	-	-	-	-	-
1888	-	-	-	-	-	-	-	-	-	-	-	-
Total	12.6	2.1	1.6	7.4	76.3	100.0	21.8	2.7	13.6	5.5	56.4	100.0

Very large	FCI	State Civil Supplies	Do not know	Total
101	60.0	0.0	40.0	100.0
102	-	-	-	-
103	-	-	-	-
104	-	-	-	-
106	0.0	0.0	100.0	100.0
201	-	-	-	-
202	-	-	-	-
288	-	-	-	-
401	0.0	0.0	100.0	100.0
511	-	-	-	-
588	-	-	-	-
601	-	-	-	-
688	-	-	-	-
708	-	-	-	-
788	-	-	-	-
1001	0.0	50.0	50.0	100.0
1002	-	-	-	-
1003	-	-	-	-
1004	-	-	-	-
1101	0.0	0.0	100.0	100.0
1302	-	-	-	-
1401	-	-	-	-
1488	-	-	-	-
1702	-	-	-	-
1888	-	-	-	-
Total	14.3	14.3	71.4	100.0

Source: Field survey data.

Very few households have reported the sale of produce to the agencies nominated by the Government (table 7.20). In fact, sale of the produce was the highest in case of the very large farmers group may be due to their approach and more marketable surplus.

Table 7.20: Agencies to whom the reported crops were sold (Percentage of Households)

Crop Code	Marginal			Small			Medium			
	State Civil Supplies	do not sell	Total	State Civil Supplies	do not sell	Total	FCI	State Civil Supplies	do not sell	Total
101	0.0	100.0	100.0	0.0	100.0	100.0	0.0	0.0	100.0	100.0
102	-	-	-	-	-	-	0.0	0.0	100.0	100.0
103	0.0	100.0	100.0	0.0	100.0	100.0	0.0	0.0	100.0	100.0
104	-	-	-	-	-	-	0.0	0.0	100.0	100.0
106	0.0	100.0	100.0	0.0	100.0	100.0	0.0	0.0	100.0	100.0
201	0.0	100.0	100.0	-	-	-	0.0	0.0	100.0	100.0
202	0.0	100.0	100.0	0.0	100.0	100.0	0.0	0.0	100.0	100.0
288	-	-	-	0.0	100.0	100.0	-	-	-	-
401	0.0	100.0	100.0	0.0	100.0	100.0	0.0	0.0	100.0	100.0
511	-	-	-	0.0	100.0	100.0	0.0	0.0	100.0	100.0
588	-	-	-	0.0	100.0	100.0	0.0	0.0	100.0	100.0
601	-	-	-	-	-	-	0.0	0.0	100.0	100.0
688	-	-	-	0.0	100.0	100.0	-	-	-	-
708	-	-	-	-	-	-	0.0	0.0	100.0	100.0
788	-	-	-	-	-	-	-	-	-	-
1001	27.3	72.7	100.0	17.9	82.1	100.0	2.7	10.8	86.5	100.0
1002	0.0	100.0	100.0	0.0	100.0	100.0	0.0	0.0	100.0	100.0
1003	0.0	100.0	100.0	0.0	100.0	100.0	0.0	0.0	100.0	100.0
1004	0.0	100.0	100.0	0.0	100.0	100.0	9.1	0.0	90.9	100.0
1101	0.0	100.0	100.0	2.6	97.4	100.0	0.0	4.5	95.5	100.0
1302	0.0	100.0	100.0	0.0	100.0	100.0	-	-	-	-
1401	0.0	100.0	100.0	0.0	100.0	100.0	0.0	0.0	100.0	100.0
1488	-	-	-	-	-	-	-	-	-	-
1702	-	-	-	-	-	-	-	-	-	-
1888	-	-	-	-	-	-	-	-	-	-
Grand Total	2.2	97.8	100.0	4.0	96.0	100.0	1.1	3.2	95.8	100.0

Source: Field survey data.

Crop Code	Large			Very large			Grand Total
	State Civil Supplies	do not sell	Total	State Civil Supplies	do not sell	Total	
101	0.0	100.0	100.0	0.0	100.0	100.0	100.0
102	-	-	-	-	-	-	100.0
103	0.0	100.0	100.0	-	-	-	100.0
104	0.0	100.0	100.0	-	-	-	100.0
106	0.0	100.0	100.0	0.0	100.0	100.0	100.0
201	0.0	100.0	100.0	-	-	-	100.0
202	0.0	100.0	100.0	-	-	-	100.0
288	-	-	-	-	-	-	100.0
401	0.0	100.0	100.0	0.0	100.0	100.0	100.0
511	0.0	100.0	100.0	-	-	-	100.0
588	-	-	-	-	-	-	100.0
601	-	-	-	-	-	-	100.0
688	-	-	-	-	-	-	100.0
708	-	-	-	-	-	-	100.0
788	-	-	-	-	-	-	-
1001	31.3	68.8	100.0	50.0	50.0	100.0	100.0
1002	-	-	-	-	-	-	100.0
1003	0.0	100.0	100.0	-	-	-	100.0
1004	0.0	100.0	100.0	-	-	-	100.0
1101	0.0	100.0	100.0	0.0	100.0	100.0	100.0
1302	-	-	-	-	-	-	100.0
1401	-	-	-	-	-	-	100.0
1488	-	-	-	-	-	-	-
1702	-	-	-	-	-	-	-
1888	-	-	-	-	-	-	-
Grand Total	4.5	95.5	100.0	14.3	85.7	100.0	100.0

Source: Field survey data.

The total value of crops sold to agencies at MSP and agency-wise sale of crops is presented in Tables 7.21a and 7.21b. It can be seen from these tables that crops sold at MSP to stipulated agency were groundnut (1001), rapeseed and mustard (1004), and cotton and the rate received by them was equal or higher than the MSP. While reasons for not sale of agriculture produce by other sample households was that procurement agency was not available (table 7.22).

Table 7.21(a): Total Value of Crops Sold to agencies at MSP (in Rs)

Landholding Categories	Quantity Sold (Kg.)	Sale Price (Rs Per Kg.)	Value Of The Crop (Rs.)
Marginal	4800	50	240000
Small	11355	48	546459
Medium	41680	48	2005850
Large	12980	50	649000
Very Large	19060	50	953000
Total	89875	49	4393889

Table 7.21(b): Total Value of crops wise sold to agencies at MSP (in Rs)

Landholding Categories	Quantity Sold (Kg)				Sale Price (Rs/Kg)			
	Crop Code				Crop Code			
	1001	1004	1101	Grand Total	1001	1004	1101	Grand Total
Marginal	4800	-	-	4800	50	-	-	50
Small	8855	-	2500	11355	48	-	50	48
Medium	35500	2500	3680	41680	49	40	50	48
Large	12980	-	-	12980	50	-	-	50
Very Large	19060	-	-	19060	50	-	-	50
Total	81195	2500	6180	89875	49	40	50	49

Table 7.22: Reasons for not selling to agencies procuring crops at MSP

(Percentage of Households)

Crop Code	Marginal				Small				Medium				
	procurement agency not available	crop already pre-pledged	Others	Total	procurement agency not available	poor quality of crop	Others	Total	procurement agency not available	poor quality of crop	received better price over MSP	Others	Total
101	100.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	100.0
102	-	-	-	-	-	-	-	-	100.0	0.0	0.0	0.0	100.0
103	100.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	80.0	0.0	0.0	20.0	100.0
104	-	-	-	-	-	-	-	-	100.0	0.0	0.0	0.0	100.0
106	100.0	0.0	0.0	100.0	96.0	0.0	4.0	100.0	87.5	0.0	0.0	12.5	100.0
201	100.0	0.0	0.0	100.0	-	-	-	-	100.0	0.0	0.0	0.0	100.0
202	100.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	100.0
288	-	-	-	-	50.0	0.0	50.0	100.0	-	-	-	-	-
401	100.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	100.0
511	-	-	-	-	100.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	100.0
588	-	-	-	-	100.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	100.0
601	-	-	-	-	-	-	-	-	100.0	0.0	0.0	0.0	100.0
688	-	-	-	-	100.0	0.0	0.0	100.0	-	-	-	-	-
708	-	-	-	-	-	-	-	-	100.0	0.0	0.0	0.0	100.0
788	-	-	-	-	-	-	-	-	-	-	-	-	-
1001	27.3	18.2	27.3	72.7	25.6	15.4	41.0	82.1	24.3	2.7	0.0	59.5	86.5
1002	100.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	100.0
1003	100.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	50.0	0.0	0.0	50.0	100.0
1004	90.0	0.0	10.0	100.0	87.5	0.0	12.5	100.0	90.9	0.0	0.0	0.0	90.9
1101	30.8	0.0	69.2	100.0	39.5	2.6	55.3	97.4	27.3	2.3	2.3	63.6	95.5
1302	100.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	-	-	-	-	-
1401	100.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	100.0
1488	-	-	-	-	-	-	-	-	-	-	-	-	-
1702	-	-	-	-	-	-	-	-	-	-	-	-	-
1888	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	87.0	1.4	9.4	97.8	72.0	3.5	20.5	96.0	65.3	1.1	0.5	28.9	95.8

Crop Code	Large				Very large				Grand Total
	procurement agency not available	poor quality of crop	Others	Total	procurement agency not available	poor quality of crop	Others	Total	
101	100.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	100.0
102	-	-	-	-	-	-	-	-	100.0
103	100.0	0.0	0.0	100.0	-	-	-	-	100.0
104	100.0	0.0	0.0	100.0	-	-	-	-	100.0
106	94.4	0.0	5.6	100.0	100.0	0.0	0.0	100.0	100.0
201	100.0	0.0	0.0	100.0	-	-	-	-	100.0
202	100.0	0.0	0.0	100.0	-	-	-	-	100.0
288	-	-	-	-	-	-	-	-	100.0
401	100.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	100.0
511	100.0	0.0	0.0	100.0	-	-	-	-	100.0
588	-	-	-	-	-	-	-	-	100.0
601	-	-	-	-	-	-	-	-	100.0
688	-	-	-	-	-	-	-	-	100.0
708	-	-	-	-	-	-	-	-	100.0
788	-	-	-	-	-	-	-	-	-
1001	12.5	18.8	37.5	68.8	0.0	16.7	33.3	50.0	78.9
1002	-	-	-	-	-	-	-	-	100.0
1003	0.0	0.0	100.0	100.0	-	-	-	-	100.0
1004	100.0	0.0	0.0	100.0	-	-	-	-	97.6
1101	40.0	5.0	55.0	100.0	42.9	0.0	57.1	100.0	97.5
1302	-	-	-	-	-	-	-	-	100.0
1401	-	-	-	-	-	-	-	-	100.0
1488	-	-	-	-	-	-	-	-	-
1702	-	-	-	-	-	-	-	-	-
1888	-	-	-	-	-	-	-	-	-
Grand Total	74.5	3.6	17.3	95.5	52.4	4.8	28.6	85.7	95.9

Source: Field survey data.

The crops for which MSP is declared by the Government and grown by the selected households were Paddy Jowar, Bajra, Maize, Wheat, Gram, Tur (Arhar), Sugarcane, Groundnut Sesamum (Til), Rapeseed & Mustard and Cotton. Though the MSP was declared, procurement was not either undertaken by the stipulated agencies or was taken at odd time that to at far off places. Due to which large number of farmers had to sold their output lower than the MSP price (table 7.23).

Table 7.23: Quantity of Crops sold at lower than MSP

Crops code	Marginal		Small		Medium		Large		Very large		Total	
	Qtls.	No.	Qtls.	No.	Qtls.	No.	Qtls.	No.	Qtls.	No.	Qtls.	No.
101	918.9	75	1505.6	56	1307.8	29	631.4	13	512.0	3	4875.7	176
102	0.8	1	13.5	1	46.1	5	0.0	0	0.0	0	60.4	7
103	61.4	6	55.0	5	41.5	5	25.0	2	0.0	0	182.9	18
104	62.7	14	58.0	2	41.0	2	0.0	0	0.0	0	161.7	18
106	641.0	53	862.0	34	756.0	18	958.0	13	140.0	1	3357.0	119
201	0.0	0	0.0	0	0.0	0	10.8	1	7.2	1	18.0	2
202	797.5	16	606.0	12	245.0	5	200.0	4	0.0	0	1848.5	37
401	24.2	13	40.9	18	34.4	15	22.7	10	2.6	1	124.7	57
1001	621.3	16	1677.8	43	1421.5	35	729.8	18	127.7	3	4578.0	115
1003	30.0	1	306.0	10	340.0	11	185.0	4	35.0	1	896.0	27
1004	572.7	18	1172.6	36	672.3	20	281.5	9	35.8	1	2734.8	84
1101	1677.7	36	2645.6	55	3012.4	65	1220.0	25	219.5	5	8775.2	186

Source: Field survey data.

7.7 PM-AASHA[1]: Whether received any deficiency payments under PM-AASHA; details such as number of households; quantity sold; payment received and time taken

None of the farmers have reported receipt of deficiency payment under BBY[2] or PM AASHA which indicate the poor reach and coverage under these schemes (table 7.24 and 7.25).

[1] Ministry implements Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM-AASHA) to ensure Minimum Support Price (MSP) to farmers of notified oilseeds and pulses qualifying Fair Average Quality (FAQ) norms. PM-AASHA is an umbrella scheme comprising of Price Support Scheme (PSS), Price Deficiency Payment Scheme (PDPS) and Private Procurement & Stockist Scheme (PPSS). These schemes are implemented at the request of the State Governments / Union Territories. PSS is implemented for procurement of pulses, oilseeds and copra at MSP, whereas PDPS is implemented for oilseeds. However, States/UTs may choose either PSS or PDPS in a given procurement season with respect to a particular oilseed crop for the entire State. PDPS does not involve any physical procurement but envisages direct payment of the difference between the MSP and the selling / modal price to pre- registered farmers selling oilseeds of prescribed FAQ norms within the stipulated period in the notified market yard through a transparent auction process. Besides, PPSS is also implemented for oilseeds on pilot basis and States have the option for implementation of PPSS in district/selected APMC(s) of district involving the participation of private stockist. However, if farmers gets better price in comparison to MSP, they are free to sell their produce in open market (Source: https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1602376).

[2] The Bhavantar Bhugtan Yojana (BBY) — a novel scheme was launched by the Madhya Pradesh government for kharif crops in 2018 which compensates farmers registered under it if their selling price is lower than the official MSP

Table 7.24: Whether received deficiency payment under BBY or PM-AASHA

Landholding categories	Number of households receiving deficiency payment	Percent
Marginal	0	0
Small	0	0
Medium	0	0
Large	0	0
Very large	0	0
Total	0	0

Note: Farmers did not know about PM-AASHA scheme

Table 7.25: Total payment received for crops sold under PM-AASHA or BBY (in Rs)

Landholding Categories	Payment Received (Rs)	Percent of Households who get amount	Time Taken (Months)
Marginal	-	-	-
Small	-	-	-
Medium	-	-	-
Large	-	-	-
Very Large	-	-	-
Total	-	-	-

Note: Farmers did not know about PM-AASHA scheme

7.8 PM-KISAN[3]: Assistance under PM-KISAN, if any; number of households; payment received and time taken

Under the PM KISAN assistance scheme of the Government of India, around 78 per cent of selected farmers have received assistance which took almost 5-6 months to realise same in their account (Table 7.26).

Table 7.26: Total payment received under PM-KISAN and number of households (in Rs)

Landholding Categories	Payment Received (Rs)	Percent of Households who get amount	Time Taken (Months)
Marginal	1234000	82.5	7
Small	854000	79.9	6
Medium	480000	69.9	6
Large	286000	77.6	6
Very Large	34000	57.1	5
Total	2888000	78.4	6

Source: Field survey data.

[3] PM Kisan is a Central Sector scheme with 100% funding from Government of India. It has become operational from 1.12.2018. Under the scheme an income support of 6,000/- per year in three equal installments will be provided to small and marginal farmer families having combined land holding/ownership of upto 2 hectares. Definition of family for the scheme is husband, wife and minor children. State Government and UT administration identify the farmer families which are eligible for support as per scheme guidelines. The fund is directly transferred to the bank accounts of the beneficiaries.

7.9 Insurance:

The PMFBY was launched in 2016 and replaces all the prevailing yield insurance schemes in India. The scheme has been launched with an impetus on crop sector. The scheme has extended coverage under localized risks, post-harvest losses etc. and aims at adoption of technology for the purpose of yield estimation. Through increased farmer awareness and low farmer premium rates, the scheme aims at increasing the crop insurance penetration in India. PMFBY aims at supporting sustainable production in agriculture sector by way of a) Providing financial support to farmers suffering crop loss/damage arising out of unforeseen events; b) Stabilizing the income of farmers to ensure their continuance in farming; c) Encouraging farmers to adopt innovative and modern agricultural practices; d) Ensuring flow of credit to the agriculture sector; which will contribute to food security, crop diversification and enhancing growth and competitiveness of agriculture sector besides protecting farmers from production risks.

7.9.1 Crops insured and reasons if not insured

The details on crops grown insured by the selected households are presented in table 7.27a and 7.27b. Most of the sample households have reported that their crops were insured as they have taken loan from bank, while they were not aware about the fact that how much premium amount was deducted from their loan amount towards insurance of their crop. Around 36 per cent of sample households have mentioned that their crop was insured. As expected, mostly medium to very large land holder farmers are eligible for more loan as per their land availability and thus the coverage under insurance scheme was reported higher in those cases only. In fact, large land holder farmers have more risk averting capacity than marginal and small famers, while coverage of insurance was lowest for this vulnerable group of farmers. This is serious concern for doubling the farmer's income as appealed and targeted by the Government.

Table 7.27a: Whether the reported crops grown are insured

(Percentage of households)

Crop codes	Insured only when received loan					
	Marginal	Small	Medium	Large	Very large	Total
101	8.0	15.6	9.6	15.6	42.9	11.7
102	0.0	14.3	42.9	-	-	25.0
103	37.0	66.1	84.6	63.2	40.0	62.4
104	0.0	20.0	0.0	0.0	-	3.3
106	16.1	20.8	16.1	13.6	0.0	16.9
201	0.0	-	100.0	0.0	-	22.2
202	0.0	0.0	0.0	0.0	-	0.0
288	0.0	100.0	0.0	-	-	37.5
401	23.1	5.3	11.8	10.0	0.0	11.7
511	-	60.0	100.0	75.0	0.0	76.0
588	0.0	50.0	80.0	100.0	0.0	43.8
601	0.0	0.0	20.0	0.0	-	4.5
688	66.7	42.9	40.0	85.7	100.0	60.9
708	-	87.5	50.0	25.0	100.0	66.7
788	20.0	0.0	0.0	0.0	-	6.7
1001	66.7	72.4	68.8	73.9	100.0	72.0
1002	8.6	27.3	35.7	33.3	-	20.8
1003	66.7	35.7	57.1	100.0	100.0	56.8
1004	57.9	65.8	89.5	88.9	100.0	72.1
1101	46.5	59.2	59.7	70.0	66.7	58.7
1302	11.5	6.7	0.0	0.0	0.0	6.0
1401	33.3	22.2	80.0	-	-	41.2
1488	13.9	34.0	51.9	52.9	75.0	35.8
1702	-	-	-	100.0	-	100.0
1888	100.0	-	-	0.0	-	50.0
Total	18.8	39.1	46.3	46.2	54.3	35.7

Source: Field survey data.

More than two third of the selected households put together were either not aware or not interested about the crop insurance (Table 7.28a). Same reasons were reported across the crop groups for non-insuring the crops (Table 7.28b)

Table 7.27b: Reported crops grown are not insured

(Percentage of households)

Crop codes	Not insured					
	Marginal	Small	Medium	Large	Very large	Total
101	92.0	84.4	90.4	84.4	57.1	88.3
102	100.0	85.7	57.1	-	-	75.0
103	63.0	33.9	15.4	36.8	60.0	37.6
104	100.0	80.0	100.0	100.0	-	96.7
106	83.9	79.2	83.9	86.4	100.0	83.1
201	100.0	-	0.0	100.0	-	77.8
202	100.0	100.0	100.0	100.0	-	100.0
288	100.0	0.0	100.0	-	-	62.5
401	76.9	94.7	88.2	90.0	100.0	88.3
511	-	40.0	0.0	25.0	100.0	24.0
588	100.0	50.0	20.0	0.0	100.0	56.3
601	100.0	100.0	80.0	100.0	-	95.5
688	33.3	57.1	60.0	14.3	0.0	39.1
708	-	12.5	50.0	75.0	0.0	33.3
788	80.0	100.0	100.0	100.0	-	93.3
1001	33.3	27.6	31.3	26.1	0.0	28.0
1002	91.4	72.7	64.3	66.7	-	79.2
1003	33.3	64.3	42.9	0.0	0.0	43.2
1004	42.1	31.6	15.8	11.1	0.0	27.9
1101	53.5	40.8	40.3	30.0	33.3	41.3
1302	88.5	93.3	100.0	100.0	100.0	94.0
1401	66.7	77.8	20.0	-	-	58.8
1488	86.1	66.0	48.1	47.1	25.0	64.2
1702	-	-	-	0.0	-	0.0
1888	0.0	-	-	100.0	-	50.0
Grand Total	81.2	60.8	53.9	53.8	45.7	64.3

Table 7.28a: Group-wise Reasons for not insuring the reported crop

(Percentage of households)

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	Others
Marginal	44.7	26.1	13.5	2.9	3.1	0.0	0.0	0.4	0.0	2.5	6.7
Small	36.0	40.3	8.6	1.4	5.1	0.0	0.0	0.0	0.0	2.9	5.7
Medium	32.2	30.8	15.4	1.4	12.1	0.0	0.5	0.0	0.0	3.7	3.7
Large	25.4	45.6	13.2	4.4	7.0	0.0	1.8	0.0	0.0	0.9	1.8
Very Large	57.1	9.5	14.3	4.8	14.3	0.0	0.0	0.0	0.0	0.0	0.0
Total	38.0	33.0	12.3	2.4	6.0	0.0	0.3	0.2	0.0	2.6	5.2

Table 7.28b: Crop-wise Reasons for not insuring the reported crop
(Percentage of total not insured households)

crop code	Marginal farmers									Small farmers							
	not aware about the availability of facility	not interested	no need	insurance facility not available	bank at a long distance	claim payment	Others	Total	not aware about the availability of facility	not interested	no need	facility not available	delay in claim payment	Others	Total
101	41.6	17.4	16.1	2.7	6.7	0.7	5.4	9.4	100.0	40.8	31.6	15.8	5.3	0.0	2.6	3.9	100.0
102	0.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0
103	47.1	23.5	23.5	5.9	0.0	0.0	0.0	0.0	100.0	21.1	63.2	10.5	0.0	5.3	0.0	0.0	100.0
104	95.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	75.0	25.0	0.0	0.0	0.0	0.0	0.0	100.0
106	47.9	30.1	8.2	2.7	0.0	1.4	1.4	8.2	100.0	45.2	31.0	7.1	2.4	0.0	0.0	14.3	100.0
201	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	-	-	-	-	-	-	-	-
202	50.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	38.5	61.5	0.0	0.0	0.0	0.0	0.0	100.0
288	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	-	-	-	-	-	-	-	-
401	30.0	40.0	0.0	0.0	0.0	0.0	0.0	30.0	100.0	50.0	27.8	5.6	0.0	0.0	5.6	11.1	100.0
511	-	-	-	-	-	-	-	-	-	0.0	50.0	50.0	0.0	0.0	0.0	0.0	100.0
588	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
601	18.2	0.0	45.5	27.3	0.0	0.0	0.0	9.1	100.0	0.0	0.0	60.0	0.0	0.0	0.0	40.0	100.0
688	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
708	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0
788	0.0	0.0	75.0	0.0	0.0	0.0	0.0	25.0	100.0	16.7	16.7	50.0	0.0	0.0	0.0	16.7	100.0
1001	42.9	42.9	0.0	0.0	14.3	0.0	0.0	0.0	100.0	12.5	68.8	0.0	0.0	18.8	0.0	0.0	100.0
1002	71.9	21.9	6.3	0.0	0.0	0.0	0.0	0.0	100.0	56.3	37.5	6.3	0.0	0.0	0.0	0.0	100.0
1003	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	33.3	66.7	0.0	0.0	0.0	0.0	0.0	100.0
1004	25.0	25.0	50.0	0.0	0.0	0.0	0.0	0.0	100.0	25.0	58.3	0.0	0.0	16.7	0.0	0.0	100.0
1101	65.2	8.7	4.3	0.0	13.0	0.0	8.7	0.0	100.0	27.6	34.5	0.0	0.0	17.2	20.7	0.0	100.0
1302	47.8	8.7	26.1	0.0	0.0	0.0	0.0	17.4	100.0	42.9	35.7	0.0	0.0	0.0	0.0	21.4	100.0
1401	50.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	28.6	57.1	14.3	0.0	0.0	0.0	0.0	100.0
1488	16.1	71.0	3.2	9.7	0.0	0.0	0.0	0.0	100.0	31.4	45.7	2.9	0.0	17.1	2.9	0.0	100.0
1702	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1888	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	44.7	26.1	13.5	2.9	3.1	0.4	2.5	6.7	100.0	36.0	40.3	8.6	1.4	5.1	2.9	5.7	100.0

Source: Field survey data.

crop code	Medium farmers									Large farmers								
	not aware about the availability of facility	not interested	no need	insurance facility not available	not satisfied with terms & conditions	claim payment	Others	Total		not aware availability of facility	not interested	no need	facility not available	with terms & conditions	claim payment	Others	Total	
101	36.2	29.8	21.3	2.1	4.3	0.0	2.1	4.3	100.0	40.7	37.0	11.1	3.7	0.0	0.0	3.7	3.7	100.0
102	50.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	100.0	-	-	-	-	-	-	-	-	-
103	25.0	50.0	0.0	0.0	25.0	0.0	0.0	0.0	100.0	14.3	71.4	0.0	0.0	14.3	0.0	0.0	0.0	100.0
104	25.0	50.0	25.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
106	34.6	46.2	7.7	3.8	0.0	0.0	3.8	3.8	100.0	31.6	42.1	15.8	5.3	5.3	0.0	0.0	0.0	100.0
201	-	-	-	-	-	-	-	-	-	0.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0	100.0
202	57.1	14.3	28.6	0.0	0.0	0.0	0.0	0.0	100.0	25.0	75.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
288	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	-	-	-	-	-	-	-	-	-
401	20.0	26.7	33.3	0.0	0.0	0.0	20.0	0.0	100.0	22.2	44.4	22.2	0.0	11.1	0.0	0.0	0.0	100.0
511	-	-	-	-	-	-	-	-	-	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
588	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	-	-	-	-	-	-	-	-	-
601	0.0	0.0	75.0	0.0	0.0	0.0	0.0	25.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0
688	0.0	66.7	33.3	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0
708	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
788	0.0	33.3	66.7	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0
1001	6.7	40.0	6.7	0.0	26.7	0.0	13.3	6.7	100.0	0.0	83.3	0.0	0.0	16.7	0.0	0.0	0.0	100.0
1002	88.9	11.1	0.0	0.0	0.0	0.0	0.0	0.0	100.0	75.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	100.0
1003	66.7	16.7	0.0	0.0	16.7	0.0	0.0	0.0	100.0	-	-	-	-	-	-	-	-	-
1004	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
1101	45.2	12.9	0.0	3.2	29.0	0.0	3.2	6.5	100.0	22.2	22.2	0.0	11.1	44.4	0.0	0.0	0.0	100.0
1302	25.0	31.3	12.5	0.0	18.8	6.3	0.0	6.3	100.0	12.5	25.0	0.0	25.0	0.0	25.0	0.0	12.5	100.0
1401	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	-	-	-	-	-	-	-	-	-
1488	7.7	53.8	15.4	0.0	23.1	0.0	0.0	0.0	100.0	25.0	62.5	12.5	0.0	0.0	0.0	0.0	0.0	100.0
1702	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1888	-	-	-	-	-	-	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0
Total	32.2	30.8	15.4	1.4	12.1	0.5	3.7	3.7	100.0	25.4	45.6	13.2	4.4	7.0	1.8	0.9	1.8	100.0

Source: Field survey data.

crop code	Very Large Farmers					
	not aware	not aware about the availability of facility	not interested	no need	insurance facility not available	Total
101	50.0	25.0	0.0	25.0	0.0	100.0
102	-	-	-	-	-	-
103	100.0	0.0	0.0	0.0	0.0	100.0
104	-	-	-	-	-	-
106	50.0	0.0	50.0	0.0	0.0	100.0
201	-	-	-	-	-	-
202	-	-	-	-	-	-
288	-	-	-	-	-	-
401	0.0	0.0	100.0	0.0	0.0	100.0
511	100.0	0.0	0.0	0.0	0.0	100.0
588	100.0	0.0	0.0	0.0	0.0	100.0
601	-	-	-	-	-	-
688	-	-	-	-	-	-
708	-	-	-	-	-	-
788	-	-	-	-	-	-
1001	-	-	-	-	-	-
1002	-	-	-	-	-	-
1003	-	-	-	-	-	-
1004	-	-	-	-	-	-
1101	0.0	0.0	33.3	0.0	66.7	100.0
1302	66.7	0.0	0.0	0.0	33.3	100.0
1401	-	-	-	-	-	-
1488	0.0	100.0	0.0	0.0	0.0	100.0
1702	-	-	-	-	-	-
1888	-	-	-	-	-	-
Grand Total	57.1	9.5	14.3	4.8	14.3	100.0

Source: Field survey data.

7.9.2 Whether experienced crop loss and reasons for the loss

More than half of the selected households have reported crops loss that to cent percent in case of large farmer group which was very strange to note (table 7.29a). The crop loss was maximum in case of crops such as maize, groundnut, cotton, and sesamum (Table 7.29b).

Table 7.29a: Whether experienced crop loss by the landholding categories

Landholding Categories	% of hh reported cross loss (out of total sample hh)	Total amount of loss (Rs)	Average loss per household (Rs)
Marginal	28.6	3145586	34951.0
Small	51.0	7834428	64216.6
Medium	71.8	14367570	128281.9
Large	82.9	10929170	173478.9
Very Large	100.0	4894260	305891.3
Total	50.4	41171014	102161.3

Table 7.29b: Whether experienced crop loss by the landholding categories

Crop code	Marginal	Small	Medium	Large	Very large	Total
101	15.4	22.2	21.2	34.4	42.9	20.4
102	0.0	14.3	57.1	-	-	31.3
103	3.7	14.3	3.8	0.0	0.0	7.5
104	85.0	20.0	25.0	0.0	-	63.3
106	10.3	11.3	6.5	13.6	0.0	10.3
201	0.0	-	0.0	50.0	-	11.1
202	0.0	0.0	14.3	25.0	-	4.8
288	0.0	33.3	100.0	-	-	25.0
401	0.0	5.3	0.0	0.0	0.0	1.7
511	-	0.0	30.0	0.0	0.0	12.0
588	0.0	0.0	0.0	0.0	0.0	0.0
601	0.0	0.0	20.0	0.0	-	4.5
688	0.0	0.0	0.0	28.6	100.0	13.0
708	-	25.0	0.0	0.0	0.0	13.3
788	0.0	0.0	0.0	0.0	-	0.0
1001	47.6	43.1	43.8	56.5	71.4	47.1
1002	5.7	9.1	14.3	66.7	-	13.0
1003	0.0	35.7	71.4	80.0	100.0	54.1
1004	15.8	26.3	21.1	33.3	0.0	23.3
1101	48.8	50.7	55.8	60.0	55.6	53.5
1302	7.7	3.3	6.3	0.0	0.0	4.8
1401	0.0	0.0	0.0	-	-	0.0
1488	0.0	5.7	22.2	17.6	25.0	9.5
1702	-	-	-	0.0	-	0.0
1888	0.0	-	-	0.0	-	0.0
Grand Total	16.4	21.2	28.2	29.7	34.8	22.7

Source: Field survey data.

7.9.3 Estimated crop loss, total premium paid and the claim amount received; delay in receipt of

The major cause of crop loss was inadequate rainfall/drought like situation during the agriculture year under study (Table 7.30).

Table 7.30: Causes for the crop loss (Percentage of households)

Crop Code	Marginal				Small					Medium			
	inadequate rainfall/drought	disease/insect/animal	other natural causes	total	inadequate rainfall/drought	disease/insect/animal	other natural causes	Others	total	inadequate rainfall/drought	disease/insect/animal	other natural causes	total
101	6.2	6.8	3.1	16.0	12.2	4.4	5.6	1.1	23.3	9.6	3.8	11.5	25.0
102	0.0	0.0	0.0	0.0	14.3	0.0	0.0	0.0	14.3	0.0	0.0	57.1	57.1
103	3.7	0.0	0.0	3.7	10.7	3.6	3.6	0.0	17.9	3.8	0.0	0.0	3.8
104	80.0	70.0	0.0	150.0	20.0	0.0	0.0	0.0	20.0	0.0	25.0	0.0	25.0
106	9.2	8.0	0.0	17.2	11.3	11.3	0.0	0.0	22.6	6.5	3.2	0.0	9.7
201	0.0	0.0	0.0	0.0	-	-	-	-	-	0.0	0.0	0.0	0.0
202	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.3	0.0	0.0	14.3
288	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	33.3	100.0	0.0	0.0	100.0
401	0.0	0.0	0.0	0.0	5.3	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0
511	-	-	-	-	0.0	0.0	0.0	0.0	0.0	30.0	0.0	0.0	30.0
588	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
601	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	20.0
688	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
708	-	-	-	-	25.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0
788	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1001	47.6	9.5	0.0	57.1	39.7	3.4	3.4	0.0	46.6	41.7	2.1	2.1	45.8
1002	5.7	2.9	0.0	8.6	9.1	4.5	0.0	0.0	13.6	7.1	7.1	7.1	21.4
1003	0.0	0.0	0.0	0.0	35.7	14.3	0.0	0.0	50.0	57.1	0.0	14.3	71.4
1004	10.5	5.3	5.3	21.1	23.7	10.5	2.6	0.0	36.8	15.8	5.3	5.3	26.3
1101	48.8	2.3	0.0	51.2	50.7	0.0	0.0	0.0	50.7	45.5	1.3	10.4	57.1
1302	7.7	3.8	0.0	11.5	0.0	0.0	3.3	0.0	3.3	0.0	0.0	6.3	6.3
1401	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1488	0.0	0.0	0.0	0.0	5.7	0.0	0.0	0.0	5.7	22.2	0.0	0.0	22.2
1702	-	-	-	-	-	-	-	-	-	-	-	-	-
1888	0.0	0.0	0.0	0.0	-	-	-	-	-	-	-	-	-
Total	13.1	6.9	1.1	21.2	18.6	3.6	1.9	0.2	24.3	21.9	2.0	6.0	30.0

Source: Field survey data.

Crop Code	Large				Very large				Grand Total
	inadequate rainfall/drought	disease/ insect/animal	other natural causes	total	inadequate rainfall/drought	disease/ insect/animal	other natural causes	total	
101	9.4	12.5	18.8	40.6	14.3	14.3	14.3	42.9	22.2
102	-	-	-	-	-	-	-	-	31.3
103	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0
104	0.0	0.0	0.0	0.0	-	-	-	-	106.7
106	13.6	9.1	0.0	22.7	0.0	0.0	0.0	0.0	17.9
201	0.0	50.0	0.0	50.0	-	-	-	-	11.1
202	0.0	0.0	25.0	25.0	-	-	-	-	4.8
288	-	-	-	-	-	-	-	-	25.0
401	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7
511	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0
588	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
601	0.0	0.0	0.0	0.0	-	-	-	-	4.5
688	28.6	0.0	0.0	28.6	100.0	0.0	0.0	100.0	13.0
708	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.3
788	0.0	0.0	0.0	0.0	-	-	-	-	0.0
1001	56.5	0.0	0.0	56.5	71.4	0.0	0.0	71.4	50.3
1002	16.7	50.0	0.0	66.7	-	-	-	-	16.9
1003	80.0	0.0	0.0	80.0	100.0	0.0	0.0	100.0	59.5
1004	33.3	0.0	0.0	33.3	0.0	0.0	0.0	0.0	30.2
1101	56.7	0.0	3.3	60.0	55.6	11.1	0.0	66.7	54.8
1302	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0
1401	-	-	-	-	-	-	-	-	0.0
1488	17.6	0.0	0.0	17.6	25.0	0.0	0.0	25.0	9.5
1702	0.0	0.0	0.0	0.0	-	-	-	-	0.0
1888	0.0	0.0	0.0	0.0	-	-	-	-	0.0
Grand Total	23.1	4.7	3.8	31.6	30.4	4.3	2.2	37.0	25.8

Source: Field survey data.

As mentioned earlier, those who had taken loan, automatic coverage of crop insurance was given to them and premium was deducted without having information to concern loanee, thus most of the sample households could not share the exact amount of premium deducted. Those who have reported, it is estimated that on an average, Rs. 4630/- premium per households (irrespective of crop grown and covered under same) is paid.

Table 7.31: Total Premium paid (Rs)

Landholding Categories	Premium Paid (Rs)	No of Households could report who taken insurance	Average Premium Per Household
Marginal	42453	16.5	2497
Small	57553	9.3	2741
Medium	35988	6.5	2999
Large	149363	13.3	11489
Very Large	24840	16.0	6210
Total	310197	10.6	4630

Those who have reported crop loss and had taken insurance have reported that about 86 percent of households had not received the claim amount, while 9.2 per cent households received amount but not in time. Thus, hardly 14 per cent of claims were settled by the insurance company (table 7.32a, 7.32b and 7.33a).

Table 7.32a: Whether claim amount was received in time for the insured crops
(Percentage of households)

Landholding Categories	Received In Time	Received But Delayed	Not Received
Marginal	1.1	13.3	85.6
Small	5.7	8.2	86.1
Medium	5.4	5.4	89.3
Large	7.9	9.5	82.5
Very Large	6.3	18.8	75.0
Total	5.0	9.2	85.9

Table 7.32b: Crop-wise claim amount was received in time for the insured crops
(Percentage of households)

Crop code	Marginal			Small			Medium		
	received in time	received but delayed	not received	received in time	received but delayed	not received	received in time	received but delayed	not received
101	0.0	36.0	64.0	0.0	40.0	60.0	0.0	18.2	81.8
102	-	-	-	0.0	0.0	100.0	0.0	0.0	100.0
103	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0
104	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0
106	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0
201	-	-	-	-	-	-	-	-	-
202	-	-	-	-	-	-	0.0	0.0	100.0
288	-	-	-	0.0	0.0	100.0	0.0	0.0	100.0
401	-	-	-	0.0	0.0	100.0	-	-	-
511	-	-	-	-	-	-	0.0	33.3	66.7
588	-	-	-	-	-	-	-	-	-
601	-	-	-	-	-	-	0.0	0.0	100.0
688	-	-	-	-	-	-	-	-	-
708	-	-	-	0.0	0.0	100.0	-	-	-
788	-	-	-	-	-	-	-	-	-
1001	10.0	0.0	90.0	4.0	0.0	96.0	9.5	0.0	90.5
1002	0.0	50.0	50.0	0.0	0.0	100.0	0.0	0.0	100.0
1003	-	-	-	0.0	0.0	100.0	0.0	0.0	100.0
1004	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0
1101	0.0	9.5	90.5	16.7	5.6	77.8	9.3	7.0	83.7
1302	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0
1401	-	-	-	-	-	-	-	-	-
1488	-	-	-	0.0	0.0	100.0	0.0	0.0	100.0
1702	-	-	-	-	-	-	-	-	-
1888	-	-	-	-	-	-	-	-	-
Total	1.1	13.3	85.6	5.7	8.2	86.1	5.4	5.4	89.3

Source: Field survey data.

Crop code	Large			Very Large			ALL		
	received in time	received but delayed	not received	received in time	received but delayed	not received	received in time	received but delayed	not received
101	0.0	0.0	100.0	33.3	0.0	66.7	1.4	27.1	71.4
102	-	-	-	-	-	-	0.0	0.0	100.0
103	-	-	-	-	-	-	0.0	0.0	100.0
104	-	-	-	-	-	-	0.0	0.0	100.0
106	0.0	0.0	100.0	-	-	-	0.0	0.0	100.0
201	0.0	0.0	100.0	-	-	-	0.0	0.0	100.0
202	0.0	0.0	100.0	-	-	-	0.0	0.0	100.0
288	-	-	-	-	-	-	0.0	0.0	100.0
401	-	-	-	-	-	-	0.0	0.0	100.0
511	-	-	-	-	-	-	0.0	33.3	66.7
588	-	-	-	-	-	-	-	-	-
601	-	-	-	-	-	-	0.0	0.0	100.0
688	50.0	50.0	0.0	0.0	0.0	100.0	33.3	33.3	33.3
708	-	-	-	-	-	-	0.0	0.0	100.0
788	-	-	-	-	-	-	-	-	-
1001	7.7	7.7	84.6	0.0	0.0	100.0	6.8	1.4	91.9
1002	0.0	0.0	100.0	-	-	-	0.0	10.0	90.0
1003	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0
1004	0.0	0.0	100.0	-	-	-	0.0	0.0	100.0
1101	11.1	16.7	72.2	0.0	60.0	40.0	9.8	10.6	79.7
1302	-	-	-	-	-	-	0.0	0.0	100.0
1401	-	-	-	-	-	-	-	-	-
1488	33.3	33.3	33.3	0.0	0.0	100.0	7.7	7.7	84.6
1702	-	-	-	-	-	-	-	-	-
1888	-	-	-	-	-	-	-	-	-
Grand Total	7.9	9.5	82.5	6.3	18.8	75.0	5.0	9.2	85.9

Source: Field survey data.

Table 7.33a: Claim amount received for the insured crops (mean or median value) (Rs)

Landholding Categories	% Of Insured Crops reported loss Received Claim	Total Claim Amount (Rs)	Number Of Households Receiving Claim (Number)	Average Amount Received (Rs)
Marginal	14.4	159050	13	12234.6
Small	13.9	291535	17	17149.1
Medium	10.7	443596	12	36966.3
Large	17.5	594000	11	54000.0
Very Large	25.0	139000	4	34750.0
Total	14.1	1627181	57	28547.0

Source: Field survey data.

The claim amount received vary from crop to crop and groups while on an average, total claim amount received was estimated to be Rs. 28457/- per household.

Table 7.33b: Claim amount received for the insured crops (Rs)

Crop Code	Average amount received (Rs)					
	Marginal	Small	Medium	Large	Very large	Grand Total
101	7433	17500	4750	-	11000	11370
102	-	-	-	-	-	-
103	-	-	-	-	-	-
104	-	-	-	-	-	-
106	-	-	-	-	-	-
201	-	-	-	-	-	-
202	-	-	-	-	-	-
288	-	-	-	-	-	-
401	-	-	-	-	-	-
511	-	-	4000	-	-	4000
588	-	-	-	-	-	-
601	-	-	-	-	-	-
688	-	-	-	68500	-	68500
708	-	-	-	-	-	-
788	-	-	-	-	-	-
1001	7650	12000	35700	35000	-	26842
1002	3500	-	-	-	-	3500
1003	-	-	-	-	-	-
1004	-	-	-	-	-	-
1101	40500	17442	51242	58800	42667	40049
1302	-	-	-	-	-	-
1401	-	-	-	-	-	-
1488	-	-	-	46500	-	46500
1702	-	-	-	-	-	-
1888	-	-	-	-	-	-
Grand Total	12235	17149	36966	54000	34750	28547

Source: Field survey data.

7.9.4 Reasons for not receiving the claim amount

When the selected sample households those who had not received claim amount were asked about reasons for not receiving the claim amount and most of them mentioned that they were not aware about the cause (Table 7.34a and 7.34b).

Table 7.34a: Group-wise Reasons for not receiving the claim amount (Percentage of households)

Landholding Categories	cause was outside coverage	documents lost	others	total
Marginal	1.3	0.0	98.7	100.0
Small	3.8	0.0	96.2	100.0
Medium	8.0	0.0	92.0	100.0
Large	13.5	0.0	86.5	100.0
Very Large	16.7	0.0	83.3	100.0
Total	6.4	0.0	93.6	100.0

Table 7.34b: Crop-wise Reasons for not receiving the claim amount

(Percentage of households)

Crop code	Marginal			Small			Medium		
	cause was outside coverage	others	total	cause was outside coverage	others	total	cause was outside coverage	others	total
101	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0
102	-	-	-	0.0	100.0	100.0	0.0	100.0	100.0
103	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0
104	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0
106	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0
201	-	-	-	-	-	-	-	-	-
202	-	-	-	-	-	-	0.0	100.0	100.0
288	-	-	-	0.0	100.0	100.0	0.0	100.0	100.0
401	-	-	-	0.0	100.0	100.0	-	-	-
511	-	-	-	-	-	-	0.0	100.0	100.0
588	-	-	-	-	-	-	-	-	-
601	-	-	-	-	-	-	0.0	100.0	100.0
688	-	-	-	-	-	-	-	-	-
708	-	-	-	0.0	100.0	100.0	-	-	-
788	-	-	-	-	-	-	-	-	-
1001	0.0	100.0	100.0	4.2	95.8	100.0	31.6	68.4	100.0
1002	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0
1003	-	-	-	0.0	100.0	100.0	0.0	100.0	100.0
1004	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0
1101	5.3	94.7	100.0	7.1	92.9	100.0	5.6	94.4	100.0
1302	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0
1401	-	-	-	-	-	-	-	-	-
1488	-	-	-	33.3	66.7	100.0	0.0	100.0	100.0
1702	-	-	-	-	-	-	-	-	-
1888	-	-	-	-	-	-	-	-	-
Total	1.3	98.7	100.0	3.8	96.2	100.0	8.0	92.0	100.0

Source: Field survey data.

Crop code	Large			Very large		
	cause was outside coverage	others	total	cause was outside coverage	others	total
101	0.0	100.0	100.0	0.0	100.0	100.0
102	-	-	-	-	-	-
103	-	-	-	-	-	-
104	-	-	-	-	-	-
106	0.0	100.0	100.0	-	-	-
201	0.0	100.0	100.0	-	-	-
202	0.0	100.0	100.0	-	-	-
288	-	-	-	-	-	-
401	-	-	-	-	-	-
511	-	-	-	-	-	-
588	-	-	-	-	-	-
601	-	-	-	-	-	-
688	-	-	-	0.0	100.0	100.0
708	-	-	-	-	-	-
788	-	-	-	-	-	-
1001	27.3	72.7	100.0	40.0	60.0	100.0
1002	0.0	100.0	100.0	-	-	-
1003	25.0	75.0	100.0	0.0	100.0	100.0
1004	0.0	100.0	100.0	-	-	-
1101	23.1	76.9	100.0	0.0	100.0	100.0
1302	-	-	-	-	-	-
1401	-	-	-	-	-	-
1488	0.0	100.0	100.0	0.0	100.0	100.0
1702	-	-	-	-	-	-
1888	-	-	-	-	-	-
Grand Total	13.5	86.5	100.0	16.7	83.3	100.0

Source: Field survey data.

7.10 Chapter Summary:

This chapter present the details on assets possessed by the selected households as well as assess to various schemes by these households. It was observed that out of total sample households, 28.4 per cent households have reported purchase of productive assets during the year. The majority of the selected households had purchased the common productive assets such as sickle/chaff-cutter/axe/spade/plough, irrigation pump and livestock. Besides, machinery and equipment as well as land were also purchased by few selected households. Across the groups, lowest share of households who purchased productive assets were reported in case of marginal farmers and the highest in case of very large farmer group. Thus, purchase of assets has positive relationship with size of land holdings. About one fourth of total selected households have reported expenditure on repair cost mainly for the repairing of irrigation pumps,

power tiller, tractor, as well as small machinery like chaff cutter and plough. As expected, lowest number of marginal farmers had reported the lowest expenditure on repair of productive assets, may be due low possession of assets. Very few households have reported sale of the productive assets. The highest share of households (reported sale to total households) reported sale of productive assets was estimated in small and medium land holders group.

Among the various factors which are determinant for agricultural growth and income of the farmer, technical knowhow and advice on various related parameters is important one. The major source of information for selected households was newspaper/radio/TV followed by nearby progressive farmer and gram sevek as well as extension officer of the respective area. Higher the land size, more the access to sources of technical advice. Non availability of information was main reason for the households which had no access of technical advice while some of them were not aware of the same. The need based contact was major reason in most of the cases. Those households who have adopted technical advice from the reported source have adopted cent percent (as given by the Krishi Vigyan Kendra and private commercial agents), while adoption of advice given by veterinary department was found to be poor than other sources. The major reasons for non-adoption of technical advice received were mostly lack of technical advice follow up and lack of financial resources. Those households have adopted the advice from the mentioned source, majority of them have reported that advice was useful. The intensity of usefulness was the highest in case of advice received from agricultural university or college while same was the lowest in case of advice received from progressive farmers. The impact of adoption of advice from the reported sources indicate that impact was reported beneficial (put together moderately beneficial and beneficial) in all cases. None of the advice was reported to harmful.

It has been cited by many reports that awareness among farmers about the minimum support prices declared by the government of India is very poor. Hardly 38 percent of selected farmer households were aware about the MSP. Those who were aware, majority of them were not aware about the procurement agencies for the crops. Across the land groups, hardly one fourth of the marginal famers were aware about the MSP while more than one half of the large farmers were aware about the same. Thus, larger the size of land holdings higher the awareness about

the MSP. Very few households have reported the sale of produce to the agencies nominated by the Government. In fact, sale of the produce was the highest in case of the very large farmers group may be due to their approach and more marketable surplus. The crops sold at MSP to stipulated agency were groundnut, rapeseed and mustard, and cotton and the rate received by them was equal or higher than the MSP. While reasons for not sale of agriculture produce by other sample households was that procurement agency was not available. The crops for which MSP is declared by the Government and grown by the selected households were Paddy Jowar, Bajra, Maize, Wheat, Gram, Tur (Arhar), Sugarcane, Groundnut Sesamum (Til), Rapeseed & Mustard and Cotton. Though the MSP was declared, procurement was not either undertaken by the stipulated agencies or was taken at odd time that to at far off places. Due to which large number of farmers had to sold their output lower than the MSP price.

None of the farmers have reported receipt of deficiency payment under Bhavantar Bhugtan Yojana (BBY) or Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM AASHA) which indicate the poor reach and coverage under these schemes. Under the PM KISAN assistance scheme of the Government of India, around 78 per cent of selected farmers have received assistance which took almost 5-6 months to realise same in their account.

Most of the sample households have reported that their crops were insured as they have taken loan from bank, while they were not aware about the fact that how much premium amount was deducted from their loan amount towards insurance of their crop. Around 36 per cent of sample households have mentioned that their crop was insured. As expected, mostly medium to very large land holder farmers are eligible for more loan as per their land availability and thus the coverage under insurance scheme was reported higher in those cases only. In fact, large land holder farmers have more risk averting capacity than marginal and small famers, while coverage of insurance was lowest for this vulnerable group of farmers. This is serious concern for doubling the farmer's income as appealed and targeted by the Government. More than two third of the selected households put together were either not aware or not interested about the crop insurance. Same reasons were reported across the crop groups for non-insuring the crops. More than half of the selected households have reported crops loss that to cent percent in case of large farmer group which was very strange to note. The crop loss was

maximum in case of crops such as maize, groundnut, cotton, and sesamum. The major cause of crop loss was inadequate rainfall/drought like situation during the agriculture year under study. Those who had taken loan, automatic coverage of crop insurance was given to them and premium was deducted without having information to concern loanee, thus most of the sample households could not share the exact amount of premium deducted. Those who have reported crop loss and had taken insurance have reported that about 86 percent of households had not received the claim amount, while 9.2 per cent households received amount but not in time. Thus, hardly 14 per cent of claims were settled by the insurance company. The claim amount received vary from crop to crop and groups while on an average, total claim amount received was estimated to be Rs. 28457/- per household. When the selected sample households those who had not received claim amount were asked about reasons for not receiving the claim amount and most of them mentioned that they were not aware about the cause.

The next chapter presents details on problems in farming, economic risks faced, coping strategies and social networks.

Chapter VIII

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

8.1 Introduction:

The economic feasibility of farming is the most important parameter for the development of agriculture and allied sectors. Also the risk faced and strategies adopted by the farmer households are equally importance for making agriculture more remunerative. This chapter presents and discuss the same.

8.2 Problems in Farming

There are various types of problems enter-countered by the farmer households while performing the various operations on field as well as in marketing of produce. The cumulative impact of same has been seen in terms of income generated from crop cultivation keeping in view cost on crop cultivation. An attempt was made during survey to know from the sample households that whether income from farming is adequate or not. It can be seen from the Table 8.1 that 99 per cent of households have reported that income generated from farming is not adequate. All the households from marginal group reported the same. The reasons for low farm income and its severity is presented in Table 8.2. It can be seen from the table that the major five reasons for inadequate income from agriculture were problem of pest /diseases; nuisance of animals; insufficient irrigation facility; non remunerative prices for crop produce and labour shortage.

Table 8.1: Whether income from farming is adequate

(Percent of HHs)

Landholding Categories	Percentage of Households	
	Yes	No
Marginal	0.0	100.0
Small	1.3	98.7
Medium	1.3	98.7
Large	3.9	96.1
Very Large	0.0	100.0
Total	1.0	99.0

Source: Field survey data.

Table 8.2: Reasons for Inadequate income from Farming

(Percentage of HHs)

Landholding categories	Marginal	Small	Medium	Large	Very Large	Total
Yield going down	24.8	41.5	53.2	52.1	64.3	38.5
Yield fluctuating a lot	17.1	28.8	37.0	42.5	57.1	27.5
Small land size	66.3	50.0	16.9	9.6	0.0	45.5
Absence of irrigation	36.8	29.2	19.5	19.2	14.3	29.2
Insufficient irrigation	50.5	61.9	64.9	57.5	64.3	57.6
Price not remunerative	38.7	60.6	74.0	72.6	71.4	55.8
Price fluctuating a lot	44.1	44.1	55.8	61.6	50.0	48.1
Temp is too high	3.5	2.1	3.2	5.5	0.0	3.2
Temp is too low	2.9	2.1	3.9	5.5	0.0	3.0
Temp fluctuating a lot	20.0	30.1	28.6	26.0	42.9	25.6
Rainfall too high	2.2	2.5	1.9	2.7	14.3	2.5
Rainfall too low	14.0	38.1	46.1	49.3	50.0	31.3
Rainfall fluctuating a lot	37.8	44.9	45.5	50.7	35.7	42.6
Pest problem/crop diseases	61.0	64.0	64.9	72.6	57.1	63.6
Unavailability/inadequate supply of pesticides	19.0	30.9	24.0	21.9	35.7	24.1
Unavailability/inadequate supply of fertilisers	18.4	34.7	33.1	37.0	35.7	28.2
Absence of storage facility	14.9	23.7	29.2	23.3	28.6	21.3
Absence of mkt facilities	7.6	18.6	23.4	20.5	21.4	15.4
Poor market facilities	24.8	24.6	31.8	30.1	28.6	26.6
Poor road connectivity	1.6	5.5	6.5	6.8	7.1	4.3
Govt. Support not available	34.3	37.7	42.2	46.6	35.7	38.0
Uncertain Govt. support	23.5	47.0	50.0	60.3	71.4	39.9
Limited sources of credit	7.9	25.0	31.2	21.9	50.0	19.6
Bank credit not available	3.5	11.9	10.4	8.2	35.7	8.3
Inadequate bank credit	7.6	22.9	32.5	26.0	28.6	19.1
High interest rate of money lenders	11.7	19.5	20.1	20.5	14.3	16.5
Rodent problem	25.1	28.8	40.3	41.1	50.0	31.1
Other animal problem	66.0	54.7	57.8	63.0	64.3	60.7
Lab shortage	44.1	50.8	53.9	53.4	64.3	49.2
Any others (high rate of irrigation water, no irrigation facilities)	5.1	2.5	0.0	2.7	7.1	3.2

The high severity was reported in case of inadequate availability of irrigation, lower prices for produce, nuisance of animals; insect pest problems and small size of land holdings (Table 8.3). The small size of holding was one of the major problems for marginal farmers which makes farming uneconomical.

Table 8.3: Severity of the reported problem faced in farming

(Percentage of households)

Landholding categories	Marginal				Small			
	Low	Moderate	High	Total	Low	Moderate	High	Total
Yield going down	1.3	7.3	16.2	24.8	1.7	15.3	24.6	41.5
Yield fluctuating a lot	0.3	10.2	6.7	17.1	0.4	15.3	13.1	28.8
Small land size	5.7	25.1	35.6	66.3	3.8	20.3	25.8	50.0
Absence of irrigation	0.3	11.1	25.4	36.8	0.8	8.9	19.5	29.2
Insufficient irrigation	3.2	14.0	33.3	50.5	3.8	18.2	39.8	61.9
Price not remunerative	0.3	9.5	28.9	38.7	4.7	20.3	35.6	60.6
Price fluctuating a lot	1.9	17.5	24.8	44.1	1.7	17.4	25.0	44.1
Temp is too high	0.6	2.5	0.3	3.5	0.0	1.7	0.4	2.1
Temp is too low	0.0	2.5	0.3	2.9	0.4	0.8	0.8	2.1
Temp fluctuating a lot	1.0	12.4	6.7	20.0	5.1	16.1	8.9	30.1
Rainfall too high	0.0	1.6	0.6	2.2	0.0	1.3	1.3	2.5
Rainfall too low	1.9	5.4	6.7	14.0	0.8	15.7	21.6	38.1
Rainfall fluctuating a lot	1.3	14.3	22.2	37.8	1.7	19.9	23.3	44.9
Pest problem/crop dieases	1.9	30.8	28.3	61.0	8.1	28.8	27.1	64.0
Unavailability/inadequate supply of pesticides	0.6	17.5	1.0	19.0	3.4	20.3	7.2	30.9
Unavailability/inadequate supply of fertilisers	2.5	13.7	2.2	18.4	5.5	21.2	8.1	34.7
Absence of storage facility	0.3	10.5	4.1	14.9	1.7	11.0	11.0	23.7
Absence of mkt facilities	0.3	4.8	2.5	7.6	2.5	8.5	7.6	18.6
Poor mkt facilities	0.6	10.2	14.0	24.8	3.0	8.5	13.1	24.6
Poor road connectivity	0.3	1.0	0.3	1.6	0.4	3.0	2.1	5.5
Govt. Dupport not available	1.3	10.2	22.9	34.3	2.1	14.0	21.6	37.7
Uncertain Govt. support	1.6	14.9	7.0	23.5	6.4	19.9	20.8	47.0
Limited sources of credit	1.0	5.4	1.6	7.9	0.0	17.8	7.2	25.0
Bank credit not available	1.3	1.0	1.3	3.5	1.3	5.9	4.7	11.9
Inadequate bank credit	1.6	3.8	2.2	7.6	2.5	14.4	5.9	22.9
High interest rate of money lenders	0.3	7.6	3.8	11.7	1.3	11.9	6.4	19.5
Rodent problem	1.3	12.4	11.4	25.1	3.0	14.0	11.9	28.8
Other animal problem	0.6	27.6	37.8	66.0	1.7	21.6	31.4	54.7
Labour shortage	0.6	26.7	16.8	44.1	5.1	26.7	19.1	50.8
Any Others (irrigation charges rate is high, irrigation facilities are not available, etc.)	0.0	0.0	5.1	5.1	0.0	0.0	2.5	2.5

Table 8.3 continues...

Landholding categories	Medium				Large			
	Low	Moderate	High	Total	Low	Moderate	High	Total
Yield going down	2.6	14.9	35.7	53.2	2.7	11.0	38.4	52.1
Yield fluctuating a lot	0.0	21.4	15.6	37.0	1.4	24.7	16.4	42.5
Small land size	1.9	3.9	11.0	16.9	0.0	2.7	6.8	9.6
Absence of irrigation	0.0	5.8	13.6	19.5	1.4	6.8	11.0	19.2
Insufficient irrigation	1.9	14.9	48.1	64.9	1.4	19.2	37.0	57.5
Price not remunerative	2.6	28.6	42.9	74.0	1.4	26.0	45.2	72.6
Price fluctuating a lot	1.9	16.9	37.0	55.8	5.5	24.7	31.5	61.6
Temp is too high	0.0	2.6	0.6	3.2	0.0	4.1	1.4	5.5
Temp is too low	0.0	1.9	1.9	3.9	0.0	5.5	0.0	5.5
Temp fluctuating a lot	7.8	14.3	6.5	28.6	4.1	15.1	6.8	26.0
Rainfall too high	0.6	1.3	0.0	1.9	0.0	2.7	0.0	2.7
Rainfall too low	3.2	15.6	27.3	46.1	2.7	15.1	31.5	49.3
Rainfall fluctuating a lot	1.3	22.1	22.1	45.5	2.7	20.5	27.4	50.7
Pest problem/crop diseases	4.5	22.1	38.3	64.9	1.4	32.9	38.4	72.6
Unavailability/inadequate supply of pesticides	0.6	18.8	4.5	24.0	1.4	17.8	2.7	21.9
Unavailability/inadequate supply of fertilisers	9.1	13.6	10.4	33.1	5.5	21.9	9.6	37.0
Absence of storage facility	0.6	11.0	17.5	29.2	0.0	9.6	13.7	23.3
Absence of mkt facilities	3.2	12.3	7.8	23.4	2.7	6.8	11.0	20.5
Poor mkt facilities	1.3	14.9	15.6	31.8	0.0	6.8	23.3	30.1
Poor road connectivity	0.6	4.5	1.3	6.5	1.4	2.7	2.7	6.8
Govt. support not available	1.3	9.7	31.2	42.2	0.0	15.1	31.5	46.6
Uncertain govt support	3.2	18.2	28.6	50.0	1.4	26.0	32.9	60.3
Limited sources of credit	1.9	14.3	14.9	31.2	1.4	12.3	8.2	21.9
Bank credit not available	1.3	5.2	3.9	10.4	1.4	5.5	1.4	8.2
Inadequate bank credit	7.8	13.6	11.0	32.5	4.1	8.2	13.7	26.0
High interest rate of money lenders	2.6	13.0	4.5	20.1	0.0	17.8	2.7	20.5
Rodent problem	1.9	24.0	14.3	40.3	2.7	13.7	24.7	41.1
Other animal problem	2.6	15.6	39.6	57.8	0.0	24.7	38.4	63.0
Labour shortage	6.5	26.6	20.8	53.9	6.8	32.9	13.7	53.4
Any others (Irrigation charges rate is high, irrigation facilities are not available, etc.)	0.0	0.0	0.0	0.0	0.0	0.0	2.7	2.7

Table 8.3 continues…

Landholding categories	Very large				Total			
	Low	Moderate	High	Total	Low	Moderate	High	Total
Yield going down	0.0	21.4	42.9	64.3	1.8	11.6	24.8	38.1
Yield fluctuating a lot	0.0	35.7	21.4	57.1	0.4	15.5	11.4	27.3
Small land size	0.0	0.0	0.0	0.0	3.8	16.9	24.4	45.0
Absence of irrigation	0.0	7.1	7.1	14.3	0.5	8.9	19.5	28.9
Insufficient irrigation	0.0	28.6	35.7	64.3	2.9	16.0	38.1	57.0
Price not remunerative	0.0	42.9	28.6	71.4	2.1	18.4	34.8	55.3
Price fluctuating a lot	7.1	14.3	28.6	50.0	2.3	17.8	27.6	47.6
Temp is too high	0.0	0.0	0.0	0.0	0.3	2.4	0.5	3.1
Temp is too low	0.0	0.0	0.0	0.0	0.1	2.1	0.8	3.0
Temp fluctuating a lot	7.1	28.6	7.1	42.9	3.9	14.3	7.3	25.4
Rainfall too high	0.0	7.1	7.1	14.3	0.1	1.6	0.8	2.5
Rainfall too low	0.0	14.3	35.7	50.0	1.9	11.4	17.8	31.0
Rainfall fluctuating a lot	7.1	14.3	14.3	35.7	1.6	17.9	22.6	42.1
Pest problem/crop diseases	7.1	21.4	28.6	57.1	4.3	28.3	30.5	63.0
Unavailability/inadequate supply of pesticides	0.0	28.6	7.1	35.7	1.5	18.6	3.8	23.9
Unavailability/inadequate supply of fertilisers	0.0	14.3	21.4	35.7	4.9	16.5	6.5	27.9
Absence of storage facility	0.0	21.4	7.1	28.6	0.8	10.8	9.6	21.1
Absence of mkt facilities	0.0	7.1	14.3	21.4	1.8	7.5	6.0	15.3
Poor mkt facilities	0.0	14.3	14.3	28.6	1.4	10.3	14.8	26.4
Poor road connectivity	0.0	0.0	7.1	7.1	0.5	2.4	1.4	4.3
Govt.support not available	0.0	21.4	14.3	35.7	1.4	11.8	24.5	37.6
Uncertain govt support	0.0	35.7	35.7	71.4	3.3	18.3	18.0	39.5
Limited sources of credit	0.0	35.7	14.3	50.0	0.9	11.9	6.6	19.4
Bank credit not available	14.3	7.1	14.3	35.7	1.5	3.8	3.0	8.3
Inadequate bank credit	0.0	21.4	7.1	28.6	3.3	9.5	6.1	18.9
High interest rate of money lenders	0.0	14.3	0.0	14.3	1.0	10.9	4.5	16.4
Rodent problem	7.1	35.7	7.1	50.0	2.1	15.5	13.1	30.8
Other animal problem	0.0	28.6	35.7	64.3	1.3	23.0	35.9	60.1
Labour shortage	14.3	42.9	7.1	64.3	3.9	27.3	17.6	48.8
Any others (irrigation charges rate is high, irrigation facilities are not available, etc.)	0.0	0.0	7.1	7.1	0.0	0.0	3.1	3.1

8.3 Economic risks faced:

Table 8.4 presents the different types of economic risks faced by the households during the last two years period. It can be seen from the table that economic risks faced by the sample households were lack of finance/capital, lack of access to inputs, sharp fluctuations in input prices, sharp fluctuations in output prices, lack of demand/inability to sell agricultural products, lack of demand /inability to sell non-agri products and seasonal unemployment.

Table 8.4: Economic risks faced by the households in the last 2 years

(Percentage of households)

Land-holding categories	Lack of finance/capital	Lack of access to inputs	Sharp fluctuations in input prices	Sharp fluctuations in output prices	Lack of demand/inability to sell agri. Products	Lack of demand /inability to sell non-agri products	Seasonal unemployment
Marginal	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Small	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Medium	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Large	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Very large	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

In order to tackle the above mentioned economic risks, sample households had adopted the coping strategies such as borrowed money from friends/relatives, worked as wage labour in the village, borrowed money from bank/ moneylenders, reduced household consumption expenditure, deferred social & family functions and started petty business/shops (Table 8.5). Specifically, majority of marginal and small farmer households had to work as wage labour in the village as well as borrowed loan from friend/relatives to cope up with economic risk faced.

Table 8.5: Coping Strategies undertaken with respect to the Economic Risks faced

(Percentage of HHs)

Landholding categories	Marginal	Small	Medium	Large	Very large	Total
Stored crops for better price	15.2	16.7	21.8	32.9	35.7	19.0
Carried out primary processing	1.0	2.9	2.6	1.3	7.1	2.0
Reduced household consumption exp	29.2	25.9	21.2	18.4	0.0	25.1
Reduced health exp	1.6	6.7	3.2	0.0	7.1	3.4
Took children out of school	8.6	8.4	9.0	9.2	0.0	8.5
Deferred social & family functions	22.9	23.8	26.9	13.2	7.1	22.8
Sold land	8.9	12.1	12.2	14.5	28.6	11.4
Sold livestock	10.8	13.0	14.7	9.2	7.1	12.0
Mortgaged/leased out land	20.0	19.7	12.2	14.5	14.3	17.8
Borrowed money from bank	61.6	56.5	64.7	68.4	64.3	61.4
Borrowed money from moneylenders	55.9	55.2	53.2	50.0	42.9	54.4
Borrowed from friends/relatives	87.3	81.2	78.8	86.8	64.3	83.4
Worked as wage labour in the village	70.2	72.0	58.3	56.6	35.7	66.5
Started petty business/shops	21.9	20.1	19.9	31.6	57.1	22.5
Others	1.3	2.5	0.6	0.0	0.0	1.4

8.4 Social networks

While performing a day to day agricultural activities, involvement of the head or member of the households in various social activities through adopting its membership or by undertaking its activities bound to have some impact on the decision making and on actions of the selected households. It also gives exposure to the member of households which can help in reaching to benefits of various government schemes.

Table 8.6: Membership of organisations

(Percentage of households)

Particulars	Marginal	Small	Medium	Large	Very large	Total
Gram Panchayat						
Number of households	16	16	13	17	3	65
Percent	5.08	6.69	8.33	22.37	21.43	8.13
Agricultural Cooperative Societies						
Number of households	57	68	59	33	10	227
Percent	18.10	28.45	37.82	43.42	71.43	28.38
Dairy/milk Cooperative Societies						
Number of households	138	119	93	47	7	404
Percent	43.81	49.79	59.62	61.84	50.00	50.50
Employee union/business or professional group						
Number of households	0	0	0	0	0	0
Percent	0.00	0.00	0.00	0.00	0.00	0.00
Mahila mandal						
Number of households	33	16	7	4	0	60
Percent	10.48	6.69	4.49	5.26	0.00	7.50
Self-help group						
Number of households	33	17	7	4	0	61
Percent	10.48	7.11	4.49	5.26	0.00	7.63
Farmers association/farmer producer organisation						
Number of households	1	0	1	3	2	7
Percent	0.32	0.00	0.64	3.95	14.29	0.88
Farmers activists group						
Number of households	13	13	10	5	3	44
Percent	4.13	5.44	6.41	6.58	21.43	5.50
Political party						
Number of households	0	0	1	0	0	1
Percent	0.00	0.00	0.64	0.00	0.00	0.13
Caste association						
Number of households	1	1	0	0	0	2
Percent	0.32	0.42	0.00	0.00	0.00	0.25
Development group or NGO						
Number of households	0	0	0	0	0	0
Percent	0.00	0.00	0.00	0.00	0.00	0.00
Credit Cooperative Society						
Number of households	11	8	2	3	0	24
Percent	3.49	3.35	1.28	3.95	0.00	3.00

It can be seen from Table 8.6 that half of the selected households were the member of dairy cooperative societies while more than one fourth of total households were member of agricultural cooperative societies. Few of the members of the households were also the member of Gram Panchayat, Self-Help Groups and Mahila Mandal. The reason for not being a member of the any organisation was mostly due to not availability of same or if available, not got opportunity (Table 8.7).

Table 8.7: Reasons for not being Members

(Percentage of households)

Particulars	Marginal	Small	Medium	Large	Very large	Total
Gram Panchayat	100.0	100.0	100.0	100.0	100.0	100.0
Not available	53.2	43.9	49.0	42.4	54.5	48.7
Available but no opportunity	12.0	32.7	29.4	28.8	36.4	23.4
No benefit	34.1	22.9	21.0	28.8	9.1	27.3
Time consuming	0.7	0.4	0.7	0.0	0.0	0.5
Agricultural Cooperative Societies	100.0	100.0	100.0	100.0	100.0	100.0
Not available	6.6	13.5	12.4	9.3	0.0	9.8
Available but no opportunity	58.9	53.8	50.5	53.5	75.0	55.7
No benefit	34.1	32.7	37.1	37.2	25.0	34.4
Time consuming	0.4	0.0	0.0	0.0	0.0	0.2
Dairy/milk Cooperative Societies	100.0	100.0	100.0	100.0	100.0	100.0
Not available	64.4	58.3	54.0	58.6	85.7	60.9
Available but no opportunity	7.3	18.3	12.7	24.1	14.3	12.9
No benefit	27.7	22.5	30.2	13.8	0.0	25.0
Time consuming	0.6	0.8	3.2	3.4	0.0	1.3
Employee union/business or professional group	100.0	100.0	100.0	100.0	100.0	100.0
Not available	90.2	73.2	69.2	71.1	42.9	78.4
Available but no opportunity	7.6	17.6	24.4	19.7	50.0	15.8
No benefit	1.6	8.4	5.1	5.3	7.1	4.8
Time consuming	0.6	0.8	1.3	3.9	0.0	1.1
Mahila mandal	100.0	100.0	100.0	100.0	100.0	100.0
Not available	63.5	46.6	41.6	45.8	42.9	51.9
Available but no opportunity	6.4	17.9	28.2	18.1	28.6	15.8
No benefit	29.4	31.8	28.2	34.7	28.6	30.4
Time consuming	0.7	3.6	2.0	1.4	0.0	1.9
Self-help group	100.0	100.0	100.0	100.0	100.0	100.0
Not available	62.8	48.2	33.6	38.9	42.9	49.8
Available but no opportunity	7.4	18.9	18.1	26.4	42.9	15.6
No benefit	28.0	27.9	43.0	31.9	14.3	31.1
Time consuming	1.8	5.0	5.4	2.8	0.0	3.5

Farmers association/farmer producer organisation	100.0	100.0	100.0	100.0	100.0	100.0
Not available	88.5	68.2	63.9	68.5	50.0	75.2
Available but no opportunity	5.7	19.7	12.9	16.4	25.0	12.6
No benefit	4.8	9.2	19.4	15.1	16.7	10.1
Time consuming	1.0	2.9	3.9	0.0	8.3	2.1
Farmers activists group	100.0	100.0	100.0	100.0	100.0	100.0
Not available	89.7	66.8	61.6	66.2	36.4	74.5
Available but no opportunity	5.6	13.7	20.5	9.9	9.1	11.4
No benefit	3.6	14.2	11.6	12.7	36.4	9.7
Time consuming	1.0	5.3	6.2	11.3	18.2	4.5
Political party	100.0	100.0	100.0	100.0	100.0	100.0
Not available	40.3	35.1	34.8	31.6	21.4	36.5
Available but no opportunity	56.2	51.9	51.0	51.3	64.3	53.6
No benefit	1.9	8.4	7.7	7.9	7.1	5.6
Time consuming	1.6	4.6	6.5	9.2	7.1	4.3
Caste association	100.0	100.0	100.0	100.0	100.0	100.0
Not available	90.4	66.0	63.5	65.8	42.9	74.7
Available but no opportunity	3.8	17.6	25.0	13.2	14.3	13.2
No benefit	4.8	11.3	9.0	11.8	28.6	8.6
Time consuming	1.0	5.0	2.6	9.2	14.3	3.5
Development group or NGO	100.0	100.0	100.0	100.0	100.0	100.0
Not available	87.9	66.1	66.7	61.8	42.9	74.0
Available but no opportunity	5.4	15.1	18.6	23.7	42.9	13.3
No benefit	4.1	10.9	11.5	5.3	14.3	7.9
Time consuming	2.5	7.9	3.2	9.2	0.0	4.9
Credit Cooperative Society	100.0	100.0	100.0	100.0	100.0	100.0
Not available	75.0	58.0	59.1	60.3	50.0	64.9
Available but no opportunity	8.2	20.8	16.9	26.0	50.0	16.1
No benefit	14.8	15.6	17.5	9.6	0.0	14.8
Time consuming	2.0	5.6	6.5	4.1	0.0	4.1

While in most of the cases, member of household was both active and ordinary member and very meagre portion of selected households were office bearers of any organisation (Table 8.8). The benefits of being a member of dairy cooperative society and agricultural credit society were visible by having information about agricultural practices and livestock management, input and credit market information as well as information about government schemes (Table 8.9)

Table 8.8: Post held as a Member

(Percentage of households)

Particulars	Marginal	Small	Medium	Large	Very large	Total
Gram panchayat	100	100	100	100	100	100
Ordinary member	0.6	0.6	2.3	0.6	3.3	1.1
Active member	93.8	93.8	53.8	88.2	66.7	83.1
Office bearer	0.0	0.0	23.1	5.9	0.0	6.2
Agricultural Cooperative Societies	100	100	100	100	100	100
Ordinary member	3.3	6.5	4.6	3.3	4.0	4.6
Active member	66.7	35.3	54.2	66.7	60.0	53.7
Office bearer	0.0	0.0	0.0	0.0	0.0	0.0
Dairy/milk Cooperative Societies	100	100	100	100	100	100
Ordinary member	1.4	3.8	1.8	1.5	4.3	2.3
Active member	86.2	62.2	81.7	85.1	57.1	77.5
Office bearer	0.0	0.0	0.0	0.0	0.0	0.0
Employee union/business or professional group	-	-	-	-	-	-
Ordinary member	-	-	-	-	-	-
Active member	-	-	-	-	-	-
Office bearer	-	-	-	-	-	-
Mahila mandal	100	100	100	100	-	100
Ordinary member	0.0	0.0	0.0	0.0	-	0.0
Active member	100.0	100.0	100.0	100.0	-	100.0
Office bearer	0.0	0.0	0.0	0.0	-	0.0
Self-help group	100	100	100	100	-	100
Ordinary member	0.0	0.0	0.0	0.0	-	0.0
Active member	100.0	100.0	100.0	100.0	-	100.0
Office bearer	0.0	0.0	0.0	0.0	-	0.0
Farmers association/FPOs	100	-	100	100	100	100
Ordinary member	0.0	-	10.0	3.3	0.0	2.9
Active member	100.0	-	0.0	66.7	100.0	71.4
Office bearer	0.0	-	0.0	0.0	0.0	0.0
Farmers activists group	100	100	100	100	100	100
Ordinary member	0.0	0.0	1.0	0.0	3.3	0.5
Active member	100.0	100.0	90.0	100.0	66.7	95.5
Office bearer	0.0	0.0	0.0	0.0	0.0	0.0
Political party	-	-	100	-	-	100
Ordinary member	-	-	10.0	-	-	10.0
Active member	-	-	0.0	-	-	0.0
Office bearer	-	-	0.0	-	-	0.0
Caste association	100	100	-	-	-	100
Ordinary member	0.0	10.0	-	-	-	5.0
Active member	0.0	0.0	-	-	-	0.0
Office bearer	100.0	0.0	-	-	-	50.0
Development group or NGO	-	-	-	-	-	-
Ordinary member	-	-	-	-	-	-
Active member	-	-	-	-	-	-
Office bearer	-	-	-	-	-	-
Credit Cooperative Society	100	100	100	100	-	100
Ordinary member	0.0	1.3	0.0	0.0	-	0.4
Active member	100.0	87.5	100.0	100.0	-	95.8
Office bearer	0.0	0.0	0.0	0.0	-	0.0

Table 8.9: Benefits of being a member

	Marginal	Small	Medium	Large	Very large	Total
Gram panchayat	100.0	100.0	100.0	100.0	100.0	100.0
Agricultural practices & livestock management	31.3	25.0	69.2	47.1	100.0	44.6
Input usage	87.5	93.8	61.5	70.6	66.7	78.5
Credit sources	12.5	18.8	53.8	35.3	66.7	30.8
Price & markets	6.3	18.8	23.1	17.6	66.7	18.5
Govt. Schemes	50.0	50.0	23.1	52.9	0.0	43.1
Agricultural Cooperative Societies	100.0	100.0	100.0	100.0	100.0	100.0
Agricultural practices & livestock management	73.7	89.7	91.5	78.8	80.0	84.1
Input usage	56.1	83.8	91.5	72.7	90.0	77.5
Credit sources	59.6	88.2	86.4	75.8	80.0	78.4
Price & markets	42.1	80.9	84.7	72.7	90.0	71.4
Govt. Schemes	24.6	47.1	28.8	30.3	20.0	33.0
Dairy/milk Cooperative Societies	100.0	100.0	100.0	100.0	100.0	100.0
Agricultural practices & livestock management	68.8	83.2	87.1	83.0	85.7	79.2
Input usuage	23.2	57.1	59.1	42.6	71.4	44.6
Credit sources	58.7	77.3	73.1	63.8	85.7	68.6
Price & markets	2.2	0.0	0.0	0.0	0.0	0.7
Govt. Schemes	0.7	0.0	1.1	0.0	0.0	0.5
Employee union/business or professional group	0.0	0.0	0.0	0.0	0.0	0.0
Agricultural practices & livestock management	0.0	0.0	0.0	0.0	0.0	0.0
Input usage	0.0	0.0	0.0	0.0	0.0	0.0
Credit sources	0.0	0.0	0.0	0.0	0.0	0.0
Price & markets	0.0	0.0	0.0	0.0	0.0	0.0
Govt. Schemes	0.0	0.0	0.0	0.0	0.0	0.0
Mahila Mandal	100.0	100.0	100.0	100.0	-	100.0
Agricultural practices & livestock management	100.0	100.0	100.0	100.0	-	100.0
Input usage	0.0	0.0	0.0	0.0	-	0.0
Credit sources	0.0	0.0	0.0	0.0	-	0.0
Price & markets	0.0	0.0	0.0	0.0	-	0.0
Govt. Schemes	0.0	0.0	0.0	0.0	-	0.0
Self-help group	100.0	100.0	100.0	100.0	-	100.0
Agricultural practices & livestock management	97.0	100.0	100.0	100.0	-	98.4
Input usage	0.0	0.0	0.0	0.0	-	0.0
Credit sources	3.0	0.0	0.0	0.0	-	1.6
Price & markets	0.0	0.0	0.0	0.0	-	0.0
Govt. Schemes	0.0	0.0	0.0	0.0	-	0.0
Farmers association/FPOs	100.0	-	100.0	100.0	100.0	100.0
Agricultural practices & livestock management	100.0	-	100.0	66.7	100.0	85.7
Input usage	0.0	-	100.0	33.3	100.0	57.1
Credit sources	0.0	-	100.0	33.3	100.0	57.1

Price & markets	0.0	-	0.0	0.0	100.0	28.6
Govt. Schemes	0.0	-	0.0	33.3	0.0	14.3
Farmers activists group	100.0	100.0	100.0	100.0	100.0	100.0
Agricultural practices & livestock management	100.0	100.0	100.0	100.0	100.0	100.0
Input usage	23.1	0.0	40.0	20.0	33.3	20.5
Credit sources	53.8	53.8	60.0	80.0	33.3	56.8
Price & markets	0.0	0.0	0.0	0.0	33.3	2.3
Govt. Schemes	100.0	100.0	90.0	100.0	33.3	93.2
Political party	-	-	100.0	-	-	100.0
Agricultural practices & livestock management	-	-	100.0	-	-	100.0
Input usuage	-	-	100.0	-	-	100.0
Credit sources	-	-	100.0	-	-	100.0
Price & markets	-	-	0.0	-	-	0.0
Govt. Schemes	-	-	0.0	-	-	0.0
Caste association	**100.0**	**100.0**	**-**	**-**	**-**	**100.0**
Agricultural practices & livestock management	0.0	0.0	-	-	-	0.0
Input usuage	0.0	0.0	-	-	-	0.0
Credit sources	0.0	0.0	-	-	-	0.0
Price & markets	0.0	0.0	-	-	-	0.0
Govt. Schemes	100.0	100.0	-	-	-	100.0
Development group or NGO	-	-	-	-	-	-
Agricultural practices & livestock management	-	-	-	-	-	-
Input usage	-	-	-	-	-	-
Credit sources	-	-	-	-	-	-
Price & markets	-	-	-	-	-	-
Govt. Schemes	-	-	-	-	-	-
Credit Cooperative Society	100.0	-	-	-	-	-
Agricultural practices & livestock management	45.5	-	-	-	-	-
Input usage	0.0	-	-	-	-	-
Credit sources	54.5	-	-	-	-	-
Price & markets	0.0	-	-	-	-	-
Govt. Schemes	0.0	-	-	-	-	-

8.4 Chapter Summary:

This chapter discusses the problems in farming and economic risks faced as well as coping strategies adopted by selected households. The social networks of members of selected households was also discussed. It was observed that 99 per cent of households have reported that income generated from farming is not adequate. The major five reasons for inadequate income from agriculture were problem of pest /diseases; nuisance of animals; insufficient irrigation facility; non

remunerative prices for crop produce and labour shortage. The small size of holding was one of the major problems for marginal farmers which makes farming uneconomical. The high severity was reported in case of inadequate availability of irrigation, lower prices for produce, nuisance of animals; insect pest problems and small size of land holdings. The economic risks faced by the sample households were lack of finance/capital, lack of access to inputs, sharp fluctuations in input prices, sharp fluctuations in output prices, lack of demand/inability to sell agricultural products, lack of demand /inability to sell non-agri products and seasonal unemployment. In order to tackle these economic risks, sample households had adopted the coping strategies such as borrowed money from friends/relatives, worked as wage labour in the village, borrowed money from bank/ moneylenders, reduced household consumption expenditure, deferred social & family functions and started petty business/shops. Specifically, majority of marginal and small farmer households had to work as wage labour in the village as well as borrowed loan from friend/relatives to cope up with economic risk faced.

While performing a day to day agricultural activities, involvement of the head or member of the households in various social activities through adopting its membership or by undertaking its activities bound to have some impact on the decision making and on actions of the selected households. It also gives exposure to the member of households which can help in reaching to benefits of various government schemes. About half of the selected households were the member of dairy cooperative societies while more than one fourth of total households were member of agricultural cooperative societies. Few of the members of the households were also the member of Gram Panchayat, Self-Help Groups and Mahila Mandal. The reason for not being a member of the any organisation was mostly due to not availability of same or if available, not got opportunity. While in most of the cases, member of household was both active and ordinary member and very meagre portion of selected households were office bearers of any organisation (Table 8.8). The benefits of being a member of dairy cooperative society and agricultural credit society were visible by having information about agricultural practices and livestock management, input and credit market information as well as information about government schemes.

The next chapter presents the summary and policy implications.

Chapter IX
Summary and Conclusions

9.1 Introduction:

As farming in India is characterized by small and fragmented holdings and high dependence on monsoon rains, operating small holdings is often unviable and farming is not a profitable business or enterprise. The economic viability of the small and marginal farm depends on input costs, institutional framework and different government policies (like price policy, minimum support prices, etc.). Therefore, agriculture needs to be made more profitable, attractive and enterprising so that the rural to urban migration is reduced and farmers take pride in their profession, which can only happen if bottlenecks are removed. Therefore, understanding of agricultural input and output markets is essential for improving agricultural productivity and growth. Development of input and output markets is important because farmers are not motivated to increase yields if they are unable to sell their produce. If this occurs, it defeats the objective of intensifying agricultural production as the majority of the population derives its livelihood from the agriculture. Many studies have highlighted the grim situation of income from agriculture and that to unstable due to various reasons, while no study is found focusing on the market imperfection and farm profitability in India. In view of same, the Ministry of Agriculture and Farmers Welfare, Government of India entrusted study for Gujarat to our Centre. Therefore, present study was undertaken to fill up this gap in literature and also to use in proper policy formulation towards doubling of farmers' income. The study was undertaken in the state of Gujarat. The study is based on both secondary and primary level statistics. The primary data were collected from 800 sample households from total sixteen villages selected by using stratified random sampling with PPS method (probability proportional to size) from eight agro-climatic zones of Gujarat.

The village survey data indicate that villages in North and Saurashtra regions are scattered and thus those selected villages are little bit far from the town as well as from the nearest APMC market than the villages in South and the Central Gujarat region. On an average, around 41 per cent of households in selected villages possess some piece of land, which ranges from as high as 74.4 per

cent in Haripur of Jamnagar district and as low as 23.1 per cent in Vad village of Navsari district. Out of total agricultural households, almost 72 per cent of total households were from the group of marginal and small landholders. In case of more than 96 per cent of agriculture land holdings was on the name of male family members indicating huge inequality between male and female and thus dominance of male member in the society.

9.2 Findings from Field Survey data

9.2.1 Socio-Economic Characteristics of Selected Households

- The average age of the farmers was estimated to be 48.6 years. The social distribution of households in selected village indicate that on an average, 44.6 per cent households belongs to general category group, followed by 34.7 per cent households from Other Backward Classes group while remaining households belongs to Schedules Caste and Scheduled Tribe category. The dominance of Schedules Caste category households was observed in two villages, viz. Savli village of Kheda district, and Moti Pavad village of Banaskantha district.
- The main occupation of households in selected villages was obvious agriculture includes crop cultivation and agriculture labour. Dairy activity was an important subsidiary activity reported in these villages.
- The average land holding size was estimated to be 1.90 ha which ranges from as high as 3.54 ha in Haripur village of Jamnagar and as low as 0.99 ha in Vad village of Navsari district.
- The buffaloes and cattle dominated the livestock holdings while small ruminant like sheep and goat were also reported in few villages. Tractor was only the common machinery found in all villages while few villagers possess threshers and one village reported to have harvester.
- Almost 70 per cent of selected households were from marginal and small landholding size group (possessing land less than 2 ha) followed by almost two fifth of total households were from medium size land holder category (having land between 2-4 ha). Households from large size holders accounts for about 10 per cent of total households of sample. Thus, as like at state

and national level, dominance of marginal and small holder group was prevalent in sample households also. The average size of landholdings of selected households was estimated to be 2.10 ha.

- Most of the landholding was having irrigation coverage facility except few parcels of large land holders group. Due to high coverage of land area under irrigation, leased-out tendency was found very rare while leased-in activity was profound among very large land holder group which may be due to availability of resources with this group as well as their high risk bearing capacity.
- At overall level, around 37 per cent each of total sample households belongs to general and other backward class group which together accounts for almost two third of total selected households. While remaining households were belonging to scheduled caste and scheduled tribe population. Across the land holder groups, other backward class group dominate the small and marginal land holder group, while the majority of households were from general category in case of very large land holder group and non-of the household was from weaker section.
- More than 94 per cent of households had the agriculture as a principal occupation. Few of the households from the marginal and small land holders group were self-employed while few had salaried employment as principle occupation.
- The annual household income from various sources across the land holdings category showed that majority of the income was from the crop cultivation followed by the income from the wage labour.
- More than two fifth of total households had milch buffaloes, around three fifth of the household possessed milch cows, about 15 per cent households had bullock. Except few marginal households, none of the households had small ruminants like goats and sheep as well as commercial poultry farm.
- Around 59 per cent of total households had borewell followed by about 25 per cent households had tube-wells as source of irrigation with about 55 per cent has electric pumps and 12 per cent has diesel pumps. One fourth of total households owned tractor while very few households had thresher. Except few large households, none of other households had combine harvester.

9.2.2 Crop and Input Markets

- The selected households had grown variety of crops during three seasons (kharif, rabi & summer) in the year under study of which major crops grown were paddy, cotton, wheat, groundnut and fodder crops.
- The crop-wise average area under different crops across the landholdings categories showed that average land holdings was relatively higher in case of tobacco growing farmers followed by sugarcane, groundnut and cotton growers. Across groups, marginal farmers covered maximum area under groundnut crop followed by tobacco, while all other preferred to cover maximum area under tobacco crop.
- Though the productivity is relative factor which depends on the area under crop and related parameters, comparison of same across landholding category indicate the mixed trend of productivity across land holder groups. It was expected as the crops are specific to particular regions and while average at state level, it has high deviation among the yield level across landholding groups.
- While comparing the productivity across the land holder groups, one of the reasons for high deviation among these groups was some of the farmers had reported the failure of crops during the agriculture years under study. In total, loss was mostly experienced by the marginal and small group of farmers. It was reported that on first stage of cultivation, total 20 farmers had reported failure, while due to excess of rain or flood like situation has ravaged the crop of 18 farmers. Due to heavy attack of pest and diseases, crop of 8 farmers was destroyed.
- Out of the total quantity produced, around 15 per cent was reported unsold or kept at home and 85 per cent produced was sold. Across land holding groups, it was observed that lower the land holding size more the share of total produce retained at home, may be due to less marketable surplus with marginal and small land holders.
- The majority of the portion of the quantity produced was sold during the first attempt (96.5 per cent) only that to majority of sale was made to local private trader followed by sale in the nearby mandi. The other agencies which had very low share were input dealers, cooperative government

agency and processors. At overall level, out of the total attempts made by the selected households to sale all commodities produced, almost three fifth of total produce was sold to local private trader/place, followed by the one fourth of total sale to nearby mandi, 8.5 per cent to processor, 4.6 per cent to cooperative and government agency and remaining 2.6 per cent was soldto input dealers. While across groups, highest share of farmers from marginal and small group sold their produce to local private traders and the lowest in local mandi, indicate distress sale of produce by this vulnerable section of farming community.

- While in case of oilseed crops, produce was sold to processor. The sugarcane harvest by small farmers was sold to large farmer in same village while some farmers had sold to some private jiggery preparation units in village and remaining sugarcane produce was sold in nearby mandi for retail sale or sugarcane juice units.
- At overall level, more than 98 per cent of the selected households have reported unsatisfied with sale of crops due to receipt of lower rate than market, followed by delayed payments, deductions for loans borrowed and faulty weighing and grading system.
- Out of the total four major reasons cited for dissatisfactions, one among them was low price received for the produce sold. Out of total crop growers, around 17.4 percent had opined that price was reasonable though it was lower than market price.
- While the major reasons for unreasonable prices received for the reported crops were no minimum prices are fixed for that crop, followed by very few buyers, no government purchase and collude among private buyers.
- As crop cultivation is transferring from subsistence to commercialised farming, use of off-farm inputs have been increased to a large extent. In most of the cases, off farm inputs were used on large scale which were purchased from the market or in few cases were borrowed from others. While less than 10 percent of households have used farm saved seed.
- Same the case of use of the fertilisers, plant protections chemicals, diesel, petrol, and electricity which were purchased from markets. While in case of human and animal labour as well as irrigation, family labours and own farm irrigation was used.

- The input dealer and the local private trader were two important sources for purchase of seed for the selected households. In case of other inputs such as fertilisers, insecticides and diesel, same pattern was observed. The labours were mostly family labours supported with animal labour available with farm or with neighbouring farm.
- The majority of the selected households had opined that the quality of seed used by them was of satisfactory level and very few households had reported poor quality of seed. Same the case of other inputs used by the selected households.
- The total expenditure incurred on the purchase of inputs reported by the selected households was estimated to be higher in case of marginal farmer group and the lowest was in case of very large farm holdings group, which indicate that higher the land size lower the expenses on inputs.
- More than 85 percent of the selected households reported that price paid for the seed input was high and thus was not reasonable.
- The prices paid for off-farm inputs such as fertilisers, plant protection, diesel were reported to be high and very high while in case of manure, it was reasonable. The labour rate reported was very high. Thus, at overall level, all the inputs were categorised under high to very high category and thus were not reasonable.
- The reasons cited for unreasonable prices paid for inputs showed that in case of seed, all reasons such as seed was not subsidised, very few sellers of seed, no govt. sellers for seed, private sellers collude and no price control are reported. Same trend was observed in case of other inputs as well.

9.5.3 Animal Products and Input Markets

- More than 86 per cent of total milk produced was sold in village, of which more than half of total produce was sold to local traders followed by more than one third of total produce was directly sold to households in village in the first disposal itself. The remaining produce was sold during second disposal to the same agencies. The highest share of households reported sale of milk in cooperative and government agency during first disposal was in case of marginal group. Major reasons for the dissatisfactions were lower

price than market price and deductions for loan borrowed. The disposal was mainly during first attempt only as mentioned earlier.

- The major reasons for the unreasonable prices received from the buyers for sold produced were very few buyers and collude of private buyers. Besides, some other reasons for same were no minimum price and no purchase by any government agency in selected area.
- Almost all inputs for cattle and buffalo rearing was purchased from the market while farm saved inputs were used in case of sheet/goat/piggery. In case of green and dry fodder for animals, home grown fodder was the major source followed by the purchased fodder from the nearby farmers or market. The concentrates were heavily purchased from the markets.
- The private input dealer followed by cooperative and government agency were major input procurement stations for cattle and buffalo farmers while for small ruminants, inputs were taken form own farm. While in case of animal feed procurement for cattle and buffalo, same was mainly taken from own farm followed by purchase from local traders.
- The expenses incurred for the purchase of inputs related to animal husbandry showed that expenditure per households for rearing the livestock was reported the lowest by the medium land holders followed by small and large landholding groups. As such one cannot compare it as per landholding group as possession of livestock is different across the groups.
- The selected households were asked to give their opinion about the amount paid by them for purchase of inputs. The responses indicated that the majority of selected households were opined that rate for inputs were reasonable while some had felt it was high to very high range. It was very strange to note that as the land size increases, the uncomfortableness about prices paid was higher. It means that higher the land size, opinion for input rate was of high and very high prices, rather it should have been opposite trend.
- Those who were unsatisfied with the prices paid for input were asked to cite reasons for same. The major reasons cited for un-satisfaction were inputs were that inputs were not subsidized, there were no government sales and no control over the price charged by the input seller.

9.5.4 Labour Market

- On an average, five family labours along with two farms servants were employed for farming and livestock operations along with as and when required support of 13 casual labours for said work. The average number of hours worked by each of the workers either from any category was around 6-7 hours per day.
- While average number days employed for farming and livestock operations were out to be around 100 days for family and farm servants while same was around 20 days in case of casual labours.
- The average wage rate paid to labour engaged in farming and livestock operation prevailing in selected study were worked out to be Rs 220/- per day for male and Rs. 180 per day for females in case of farm servants, while in case of casual labour, rate was almost same (Rs. 196 per day). While almost two third of selected households opined that rate paid was high and one third households reported same a very high. Thus, altogether more than 88 per cent of households reported high wages rates for labour.
- While reasons for wage rate paid to labour for farming and livestock operations not being reasonable cited by the selected households was limited labour supply in study area. The availability of work under MGNREGA as well as control of labour contractor on labour supply also created wage rate hike in the study area.
- Most of the engagement of wage labour was up to nine months and the wage rate prevailing for farm and MGNREGA work was reported to be Rs. 266 per day and Rs. 185 per day respectively.
- The major constrains for worker were that wage rate was low and work available for a very limited period of time. The other constraints were poor health and only few able bodied members in the family as well as work available were of hard in nature.

9.5.5 Credit Market

- Out of the total selected households, at overall level, more than half of the total households had taken some kind of loan. It was very surprising to note that all the farmers from very large farm holdings group have borrowed

money and the lowest ratio was reported in case of marginal landholder. Thus, it is clear that incidence of loan increases with the land holding size.

- The major sources of the money borrowing by the land holders were formal agencies such as government bank and cooperative society. On an average, amount borrowed was Rs. 191885. The major two reasons mentioned to borrow loan were to meet capital expenditure in farm business and to meet day to day working expenditure in farm business.
- The average rate of interest charged by the formal lending agencies such as banks, cooperative society and SHGs was between 6.2 to 7.1 per cent per year. It was strange to note that input dealers and commission agents were also lending loan at lower rate of interest of 7.1 per cent as compared to very high rate of 24 percent charged by the private money lenders.
- The details on total amount repaid to each source and number of households repaying loan showed that two third of total households had repaid the loans.
- The reasons for non-repayments were payment to be made after harvesting, due to medical expenses, income is less than the expectation and expecting the loan waiver. During the last year under report, average numbers of loans taken were mostly from formal sector.

9.5.6 Asset Endowments, Government Support Programs & Insurance

- Out of total sample households, 28.4 per cent households have reported purchase of productive assets during the year. The majority of the selected households had purchased the common productive assets such as sickle/chaff-cutter/axe/spade/plough, irrigation pump and livestock. Besides, machinery and equipment as well as land were purchased by the few selected households. On an average, selected household had spent Rs. 166519/- towards procurement of these assets.
- Across the groups, lowest share of households who purchased productive assets were reported in case of marginal farmers and the highest in case of very large farmer group. Thus, purchase of assets has positive relationship with size of land holdings.
- Some of the households have reported the expenditure on repair and maintenance of the assets which they had. One fourth of total selected

households have reported expenditure on repair cost and on an average, Rs. 11128/- were spent towards same. Out of the total reported households (repair), majority of the households had to repair irrigation pumps may be due to power fluctuation or low quality water for which about Rs. 10542/- cost was incurred. Besides, repaid of power tiller, tractor, as well as small machinery like chaff cutter and plough were reported. As expected, lowest number of marginal farmers had reported the lowest expenditure on repair of productive assets, may be due low possession of assets.

- Very few households have reported sale of the productive assets (5.1 per cent of total households) towards which average receipt was reported of Rs. 15042/- per household. The highest share of households (reported sale to total households) reported sale of productive assets was estimated in small and medium as well as very large landholders group. Almost 83 per cent of households (out of reported sale hh) had sold livestock followed by 7.3 percent of total households sold their land. Sale of small machinery/equipment, poultry birds as well as small power tillers are also reported. Overall, through receipt of sale of assets estimated to be Rs. 86933 and net expenditure on productive assets was estimated to be Rs. 89147/-.
- The major source of information for selected households was newspaper/radio/tv followed by nearby progressive farmer and gram sevek as well as extension officer of the respective area. Higher the land size, more the access to sources of technical advice.
- Major reason for the households which had no access of technical advice was that same was not available followed by not aware about the same. The need based contact was major reason in most of the cases.
- Those households who have adopted technical advice from the reported source had adopted the advice cent percent as given by the Krishi Vigyan Kendra and private commercial agents, while adoption of advice given by veterinary department was at lower side than other sources.
- The major reasons for non-adoption of technical advice received were mostly lack of technical advice follow up and lack of financial resources.

- Those households have adopted the advice from the mentioned source, majority of them have reported that advice was useful. The intensity of usefulness was the highest in case of advice received from agricultural university or college while same was the lowest in case of progressive farmers. The impact of adoption of advice from the reported sources was reported beneficial (put together moderately beneficial and beneficial) in all cases. None of the advice was reported to be harmful.
- It has been cited by many reports that awareness among farmers about the minimum support prices declared by the government of India is very poor. Hardly 38 percent of selected farmer households were aware about the MSP. Those who were aware, majority of them were not aware about the procurement agencies for the crops.
- Across the land groups, hardly one fourth of the marginal famers were aware about the MSP while more than one half of the large farmers were aware about the same. Thus, larger the size of land holdings higher the awareness about the MSP. Recent efforts to improve farmers' income have been focused on raising Minimum Support Prices (MSPs). Historical evidence shows that MSP does not directly translate into higher income for farmers due to a deficient and ineffective implementation framework.
- Very few households have reported the sale of produce to the agencies nominated by the Government. In fact, sale of the produce was the highest in case of the very large farmers group may be due to their approach and more marketable surplus.
- The crops sold at MSP to stipulated agency were groundnut, rapeseed and mustard, and cotton and the rate received by them was equal or higher than the MSP. While reasons for not sale of agriculture produce by other sample households was that procurement agency was not available.
- The crops for which MSP is being declared by the Government and grown by the selected households were Paddy Jowar, Bajra, Maize, Wheat, Gram, Tur (Arhar), Sugarcane, Groundnut Sesamum (Til), Rapeseed & Mustard and Cotton. Though the MSP was declared, procurement was not either undertaken by the stipulated agencies or was taken at odd time that to at far off places. Due to which large number of farmers had to sold their output lower than the MSP price.

- None of the farmers have reported receipt of deficiency payment under BBY or PM AASHA which indicate the poor reaches and coverage under these schemes.
- Under the PM KISAN assistance scheme of the Government of India, around 78 per cent of selected farmers have received assistance which took almost 5-6 months to realise same in their account.
- Most of the sample households have reported that their crop is insured as they had taken loan from bank, while they were not aware about the fact that how much premium amount is deducted from their loan amount towards insurance of their crop. Around 36 per cent of sample households have mentioned that their crop was insured. As expected, mostly medium to very large land holders are eligible for more loan as per their land availability and thus the coverage under insurance scheme was reported higher in their cases only. In fact, large farmers have more risk averting capacity than marginal and small, while coverage of insurance was lowest for this vulnerable group of farmers. This is serious concern for doubling the farmer's income.
- More than two third of the selected households put together were either not aware or not interested about the crop insurance. Same reasons were reported across the crop groups for non-insuring the crops
- More than half of the selected households have reported crops loss that to cent percent in case of large farmer group which was very strange. The crop loss was maximum in maize, groundnut, cotton, and sesamum crop.
- The major cause of crop loss was inadequate rainfall/drought like situation during the agriculture year under study.
- As mentioned earlier, those who had taken loan, automatic crop insurance was given to them and premium is deducted without having information to concern loanee, thus most of the sample households could not share the exact amount of premium deducted. Those who have reported, it is estimated that on an average, Rs. 4630/- premium per households (irrespective of crop grown and covered under same) is paid.
- Those who have reported crop loss and had taken insurance have reported that about 86 percent of households have not received the claim amount,

while 9.2 per cent received after some time (delayed) and remaining received amount in time. Thus, hardly 14 per cent of claims were settled by the insurance company.

- The claim amount received vary from crop to crop and groups while on an average, total claim amount received was estimated to be Rs. 28457/- per household.
- When the selected sample households those who have not received claim amount were asked about reasons for not receiving the claim amount, most of them mentioned that they were not aware about the cause.

9.5.7 Problems in Farming, Risks faced, Coping Strategies & Social Networks

- There are various types of problems enter-countered by the farmer households while performing the various operations on field as well as in marketing of produce. The cumulative impact of same has been seen in terms of income generated from crop cultivation keeping in view cost on crop cultivation. An attempt was made during survey to know from the sample households that whether income from farming is adequate or not. About 99 per cent of households have reported that income generated from farming is not adequate. All the households from marginal group have reported the same.
- The major five reasons for inadequate income from agriculture were problem of pest /diseases; nuisance of animals; insufficient irrigation; non remunerative prices and labour shortage. The small size of holding was one of the major problems for marginal farmers which makes farming uneconomical.
- The high severity is reported in case of inadequate availability of irrigation, lower prices for produce, nuisance of animals; insect pest problems and small size of land holdings were major ones.
- The economic risks faced reported by the sample households were lack of finance/capital, lack of access to inputs, sharp fluctuations in input prices, sharp fluctuations in output prices, lack of demand/inability to sell

agricultural products, lack of demand /inability to sell non-agri products and seasonal unemployment.

- In order to tackle the above mentioned economic risks, sample households had adopted the coping strategies such as borrowed money from friends/relatives, worked as wage labour in the village, borrowed money from bank, borrowed money from moneylenders, reduced household consumption expenditure, deferred social & family functions and started petty business/shops.
- Specifically, majority of marginal and small farmer households had to work as wage labour in the village as well as they had borrowed loan from friend/relatives to cope up with economic risk faced.
- While performing a day to day agricultural activities, involvement of the head or member of the households in various social activities through adopting its membership or by undertaking its activities bound to have some impact on the decision making and action of the selected households. It also gives exposure to the member of households which can help in reaching to benefits of various government schemes.
- Half of the selected households were the member of dairy milk cooperative societies while more than one fourth of total households were member of agricultural cooperative societies. Few of the members of the households were also the member of Gram Panchayat, self-help groups and Mahila Mandal. The reasons for not being a member of the any organisation were mostly due to not available or if available, not got opportunity.
- While in most of the cases, member of household was both active and ordinary member and very meagre portion of selected households were office bearers of any organisation. The benefits of being a member of dairy cooperative society and agricultural credit society were visible by having information about agricultural practices and livestock management, input and credit market information as well as information about government schemes.

9.3 Conclusions and Policy Implications:

- The villages in North and Saurashtra regions are scattered and thus those selected villages are little bit far from the town as well as from the nearest APMC market than the villages in South and the Central Gujarat region. Physical market infrastructure is critical in enhancing production and marketed surplus and ensuring higher returns to farmers. Due to the reliance of output market development on physical infrastructure such as markets/yards, collection centres, grading and packaging, rural roads, etc., it should be the top-most priority for investment and development. The development of quality physical infrastructure will reduce transactional costs and improve market efficiency. Improved roads and creation of market hubs that are closer to producers can reduce transportation costs and post-harvest losses, which in turn can lead to higher prices received for outputs, resulting in farmers receiving higher returns from agricultural production.
- It was estimated that on an average marketed surplus was 85 per cent of crop produced. The majority of the portion of the quantity produced was sold during the first attempt (96.5 per cent) only that to majority of sale was made to local private trader mostly at lower rate than market price. It indicates that farmers prefer to sale the produce to local trader to meet the need of requirement of cultivation and home requirement. Among different farm size groups, the marketed surplus ratios were lower for small and marginal farmers compared with large farms. It was also found that marketed surplus increased with an increase in farm size and output. Further, marketed surplus was higher than marketable surplus for small and marginal farmers, indicating distress sale. Farmers sold almost entire marketed surplus immediately after the harvest as they need credit for the next crop and that leads to serious constraints in handling and storage of produce for procurement agencies, particularly in rice and wheat. Therefore, access to institutional credit and proper storage at farm household level will play an important role in increasing marketed surplus and reduce distress sale.
- In most of the cases, off farm inputs were used on large scale which were purchased from the market or in few cases are borrowed from others. Input

dealer and the local private trader were two important sources for purchase of seed and other inputs for the selected households and prices paid for these inputs were reported to be high and very high. Therefore, there is a need to ensure timely availability of adequate quantity of quality seed and fertiliser and other inputs at reasonable price, particularly by State Seed Certification Agency and State Department of Agriculture.

- Out of the total selected households, at overall level, more than half of the total households had taken some kind of loan. It was very surprising to note that all the farmers from very large farm holdings group have borrowed money and the lowest ratio was reported in case of marginal landholder. Thus, it is clear that incidence of loan increases with the land holding size. The major sources of the money borrowing by the land holders were formal agencies such as government bank and cooperative society. The major two reasons mentioned to borrow loan were to meet capital expenditure in farm business and to meet day to day working expenditure in farm business. It is therefore need to narrow the gap in financial inclusion for farmers.
- Market information and extension services play a significant role in increasing productivity and market participation of small farmers. The major source of information for selected households was newspaper/radio/tv followed by nearby progressive farmer and gram sevek as well as extension officer of the respective area. Availability of timely and reliable market information has been seen as a major constraint by farmers in marketing of their produce, leading to low price realization. A significant proportion of farmers especially the marginal are dependent on the traders/commission agents for price and market information, hence, there is a need to strengthen dissemination of market intelligence/information so that farmers can make appropriate marketing decision.
- Hardly 38 percent of selected farmer households were aware about the MSP. Those who were aware, majority of them were not aware about the procurement agencies for the crops. Thus, there is a need to create awareness about the same.
- None of the farmers have reported receipt of deficiency payment under BBY or PM AASHA which indicate the poor reaches and coverage under these schemes.

- More than two third of the selected households put together were either not aware or not interested about the crop insurance which once again highlighted the poor reach of crop insurance scheme.
- About 99 per cent of households have reported that income generated from farming is not adequate which is in tune with other research findings. The major five reasons for inadequate income from agriculture were problem of pest /diseases; nuisance of animals; insufficient irrigation; non remunerative prices and labour shortage. The high severity is reported in case of inadequate availability of irrigation, lower prices for produce, nuisance of animals; insect pest problems and small size of land holdings were major ones. Since farmers can receive higher prices under competitive markets, there is a need to create more competitive market structure by liberalizing agricultural markets so that farmers could choose the agency to whom they wished to sell their produce. Small and marginal farmers are forced to sell their produce just after harvest at lower prices. Sometimes farmers may want to sell it later when prices are higher but feel constrained by, among other things, lack of storage facilities and access to credit. Therefore, a competitive market combined with storage facilities can ensure better prices to small farmers by allowing them to have greater flexibility in the timing and location of their sales.
- At overall level, more than 98 per cent of the selected households have reported unsatisfied with sale of crops due to lower rate than market, followed by delayed payments, deductions for loans borrowed and faulty weighing and grading. Thus, there is a need for improvement of the working of markets and diffusing information on production technologies. Agricultural market integration has potentially important implications for economic wellbeing across different regions, and also economic efficiency given the large share of food in the Indian consumption basket. The policies seeking to enhance integration should focus on facilitating cross-market trade, through infrastructure and also other means such as reducing restrictions on the movement of goods, and information sharing.
- The adoption and application of a systematic farm budgeting template and proper recording helps the grower not only to reduce cost of production in

real terms but also helped in increasing revenue through an increase in output and per unit price received by farmer.

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https://farmer.gov.in/livestockcensus.aspx

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Appendix I

Comments on the Draft Report received from
Agro-Economic Research Unit, Institute of Economic Growth, Delhi

Comments on draft report

1.	Title of report	Market Imperfections and Farm Profitability in Gujarat
2.	Date of receipt of the Draft report	October 29, 2020
3.	Date of dispatch of the comments	November21, 2020

General comments

1) Interpretation in the text should try to bring out the variations in the patterns with respect to the landholding categories. In most cases, from chapters 3 to 8, only the overall interpretation is provided. This leads to important patterns being missed out across land categories. Patterns across landholding categories should be discussed in each chapter while interpreting the tables, and subsequently highlighted in the conclusion chapter as well.
2) A brief section summarizing the main findings at the end of each chapter would be really useful.
3) Inclusion of some insights obtained from the field in explaining the observed trends in the given tables would be interesting and would make the analysis richer.
4) The findings given in the conclusion chapter needs to be linked to the findings of the existing literature- whether it is in tune with the extant literature or not. If it is not, then the plausible reasons for the same may be given. This would help in placing the findings of the study in the existing literature.

Minor observations

1) What is the data source of tables presented in the section on "overview of sample villages" in chapter 2? (pp 25 to pp 28) (from table 2.3 to table 2.6). Kindly mention it below each of the tables.
2) Tables 3.14 related to details on use of fertilisers, manure, plant protection, labour and other inputs, there is a column on 'no use'. Such an option was not present with respect to the question on how the inputs were procured. What does 'no use' refer to?
3) In chapter 4, table 4.3 on the produce-wise total sale value is given but interpretation is missing. Just require a minor clarification: What does the 'Rs per household' column in table 4.3 refer to and how was it calculated?
4) In table 7.1 on 'Total expenditure incurred on the purchase of productive assets, there are two columns – one on 'expenditure per reporting households' and 'expenditure per households (total sample). What is the difference between the two and how is it calculated?
5) In the conclusion chapter, till page 4 (pp-139 to 143), there is mere repetition of chapter one on 'introduction' and chapter 2 on 'overview of the study region'. This portion could be made concise rather than merely repeating what was already discussed in detail in chapter one and chapter two.
6) There were several grammatical and spelling mistakes in the text. So a thorough editing is required.

Appendix II

Action taken by the authors based on the comments received

- All the suggestions and corrections are adopted at appropriate places in the report.

Project Team