AGRICULTURAL SURVEY OF SUKKUR DISTRICT

Exploring the District's Rural Economy

Prepared for:

State Bank of Pakistan
Banking Services Corporation (Bank)
Development Finance Support Department
Head Office Karachi.

Prepared by:

SUKKUR INSTITUTE OF BUSINESS ADMINISTRATION

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EXECUTIVE SUMMARY

The Purpose of this agri survey was to explore the dynamics of rural economy and facilitate and enhance the stakeholders' understanding of the rural economy of Sukkur district. The main purpose behind this survey was also to enhance the understanding behind low credit absorption ratio in rural area and facilitate banks to provide access to credit to the people of this area by enhancing the outreach. The survey has provided deeper and better insight of the characteristics of the district's rural economy. The total sample size was 300 respondents, 5 farmers were selected randomly from each village to collect their responses on the survey questions; at some villages 4 or 6 farmers were selected randomly.

In district Sukkur, majority of the farmers comprise subsistence farmers as 31% farmers of district are those who own less than 5 acres of land, while about 34% farmers holding up to 12.5 acres of land. Farmers, studied during survey, spend around Rs.1,611 monthly on their children education, with the maximum amount of Rs. 12,000/-. Farming is a major component of the district's rural economy as almost all the respondents were engaged in farming. Wheat, rice, cotton and sugarcane are the major crops being cultivated by 93%, 58%, 37% and 12% of the respondent farmers. 24% of the respondent farmers are also cultivating fruits including Dates, Mangoes and Bananas. Only 22% of the respondent farmers are rearing animal (livestock).

The survey results showed that almost half (49%) of the farmers used privately purchased seeds for wheat cultivation, 33% of the farmers used their own retained seed and 18% of the farmers used the seed purchased from Public Sector Seed Corporations. On the average, a farmer used 96.73 Kg chemical fertilizer per acre with the maximum and minimum of 350 Kg and 40 Kg respectively. The average per acre cost of wheat production was Rs. 10,670/-, based upon the average figures of cost given by respondents of the survey. The survey showed that about 89% of the farmers engaged in wheat cultivation sold their wheat during the year whereas the remaining 11% retained all the produce for domestic consumption.

All the respondent farmers are using tractor for cultivation and preparing land for crops and few are using tractor for fetching their crop produce to market. Majority of the 77% farmers who do not own tractors and use the rented tractors could be the potential candidates for tractor financing from banks.

Further, 52% of the farmers covered in the survey had no bank account. Only 5% of the farmers in the survey had obtained loans from banks, whereas 54% had taken loans from informal sources including Friends and Family, Input Suppliers and Arties. About 89.6% of the respondent farmers said that they had no information about the different products being offered by banks for the farming community. About 71.5% of the farmer respondents expressed interest based financial product as key hurdle for not using loaning facility and said that they don't want to take the interest bearing bank loans because Riba (interest) is prohibited in Islam.

About 85% of the farmers who had taken loans/credit from Input Suppliers (IS) were obligated to sell the produce to the suppliers. The farmers with better repayment behavior get a better price than the farmers with problematic repayment behavior. All the respondents considered the high energy cost coupled with frequent power outages as one of the key problems**;** 99.3% farmers in the sample considered water shortages due to unavailability of water in the canal system**.**

The issues discussed above related to problem of farming community shows that the farmers of the Sukkur region like other areas of Pakistan considered water shortage, access to credit, increasing energy cost as the major problems which can be resolved by improving the system while through education and training we can help them in using modern tools and dissemination of latest research in farming which may result in improving productivity.

1. INTRODUCTION

Agriculture is the mainstay of Pakistan's economy. More than 20% of the country's GDP comes from agriculture sector which also employs about 41% of the labor force, sustains almost 67% of the population. This simple fact suggests that agriculture contributes less to the national GDP relative to its size of population and labor force compared to other sectors of the economy; limited information and understanding of the rural markets and economy has been one of the key impediments in penetration of banking/finance in agricultural/rural sector of our economy. The sector was never considered as a mainstream and viable business activity by banks and thus could fetch no or limited attention of banks' senior management to build their capacities for serving the sector. State Bank of Pakistan and SBP-BSC have been taking different initiatives to enhance banks' agri finance capacity and conducting research studies and surveys to broaden and deepen the banks understanding of the rural economy. The Agricultural Surveys of Sukkur District in Sindh along with Gujranwala were initiated as pilot projects to explore the districts' rural economies and thus enable SBP and banks to devise market responsive initiatives and products for increasing flow of financial services in the rural areas. The survey of Sukkur district was conducted through IBA Sukkur.

The survey questionnaire was developed by State Bank of Pakistan, Banking Services Corporation (Bank), Development Finance Support Department's team. The questionnaire was little bit modified after pilot testing. The final questionnaire comprised 235 questions grouped in 6 parts viz. i) general information about the farmer and his/her village, ii) farming activities, iii) farm mechanization, iv) livestock, v) access to finance and sources thereof and vi) key issues/challenges faced. Responses of 300 farmers, selected randomly from 60 villages based on stratified sampling, were collected and compiled. The survey provides a better understanding of the rural economy in Sukkur and offers some useful insights about the farm and non-farm activities in the rural areas of the district as well as socio economic conditions of the villages.

2. SURVEY METHODOLOGY

The survey was conducted in 4 out of five Tehsils of district Sukkur, viz. i) Sukkur ii) Rohri, iii) Pano Aqil iv) Saleh Pat. The fifth Tehsil comprising Sukkur city where no farms and farmers fields exist was excluded from the survey.

S. No.	Tehsil	Union Councils	Total No. of villages in Tehsil	No. of Villages selected for survey from each tehsil	Percentage w.r.t tehsil wise villages	Percentage w.r.t sampled villages
1	Sukkur	9	162	5	3.09%	8.62%
2	Rohri	10	175	18	10.29%	31.03%
3	Pano Aqil	11	217	22	10.14%	37.93%
4	Salehpat	3	87	13	14.94%	22.41%
	Total	**33**	**641**	**58**		**100%**

There are 641 villages in Sukkur District out of which 58 villages (9% of the total villages) were selected randomly for the survey. The distribution/break-up of villages selected from each Tehsil is given in the table above. Twenty two villages were selected randomly from Tehsil Pano Aqil, which is the largest Tehsil of the district with 217 villages. Whereas 13 villages were selected from Tehsil Salehpat, which is largest Tehsil in terms of percentage of villages selected, 18 villages were selected from Rohri and 05 villages from Sukkur Tehsils. Every 5^{th} village was selected from the village lists provided by the District Coordination office and Agriculture Department, Govt. of Sindh; where the 5^{th} village was not easily accessible, 6^{th} village was selected and if the 6^{th} village was of the same category 7^{th} village was selected. As the total sample size was 300 respondents, every 5^{th} house was selected from each village for survey.

Survey Teams, Data Collection, and Analysis

The field interviews were conducted by four MBA students, divided into two teams, two in each. The teams were provided comprehensive training for about 3 days on the study objectives, survey methodology, and interviewing techniques by principal researcher and a team from SBP-BSC headed by Mr. Amjad Maqsood. Mock interviews were also part of the training sessions for estimating the average time required to fill up the questionnaires and also to identify the confusing and irritating questions. The questionnaire designed by sponsoring agency i.e the SBP-BSC was pre-tested. The principles researcher supervised the whole project, questionnaire design, sampling criteria and sample selection process and provided

guidance in all phases of the project. The SBP-BSC Sukkur provided support from time to time in data collection. Principal researcher worked full time with the survey teams, motivated them, guided them and resolved their problems, particularly in field survey and data entry phases. The SPSS software was used for data entry and analysis. SPSS provided flexibility in managing the data by ensuring accuracy and quality of data collected/entered. In analysis phase where necessary, outliers were excluded from the total number of observations to arrive at conclusive percentages and averages of the variables. The results of survey and data collected could be utilized for many research dimensions. The main objective of this research project is to highlight basic dynamics of the agriculture sector in Sukkur district. The data and results will be shared with other concerns for the sake of knowledge sharing, without revealing the identity of respondents.

3. SOCIO-ECONOMIC CONDITIONS

In Sukkur district, majority of the farmers comprise subsistence farmers as 65% of the farmers interviewed during the survey have land holdings of up to 12.5 acres; out of which 48% (31% of the total farmers) have land holdings of up to 5 acres. About 15% and 11% of the respondents were holding land 12.6-25 acres and 25.1-50 acres respectively; whereas 10% of the respondents have land holding of more than 50 acres and 1% had no land at all.

Land Ownership	Frequency	Percent	Cum. %
Nil	3	1%	1%
Up to 5 acres	93	31%	32%
5-12.5 acres	98	33%	65%
12.5-25acres	44	15%	79%
25-50 acres	33	11%	90%
above 50 acres	29	10%	100%
Total	300	100%	

Contrary to general perception the farmers with larger land holdings had higher tendency to utilize the land for cultivation than the farmers with smaller land holdings. For instance 27% farmers having upto 5 acres of land were not fully utilizing their land compared to 19% of farmers having land holdings of 5-25 acres, 9% for 25-50 acres and only 7% for farmer having more than 50 acres. This suggests that land utilization levels of farmers with smaller land holdings are worse than the farmers with larger land holdings.

Sr. No.	**Land Holdings**	**% of farmers not fully utilization**
1.	Upto 5 acres	27%
2.	5-25 acres	19%
3.	25-50 acres	9%
4.	More than 50 acres	7%

Drought was reported, (9 out of ten times), as the major reason of leaving the land uncultivated. Further, more than 84% of the farmers cultivate their own land. Only 15% cultivate their own as well as rented land and just 1% farmers who were interviewed cultivated the rented land only.

On income side, majority 97% of farmers are solely dependent on farming for their livelihood and only 3% also work in non-farming sector, i.e. dairy and poultry, along with farming. This heavy reliance on farming is highly risky and makes them vulnerable not only to potential crop failures due to adverse weather conditions and/or pest attacks but also to volatile prices of farm produce. The risk is however, somewhat diversified due to variety of crops being cultivated by the farmers. For instance 93% of the respondent farmers were cultivating wheat, 58% rice, 37% cotton, 16% fruits, 18% vegetables and 12% sugarcane.

Source of Income	Numbers of farmers	Percentage
(a)Wheat	278	93%
(b) Rice	175	58%
(c) Cotton	111	37%
(d) Sugar cane	36	12%
(E) Vegetables	54	18%
(F) Fruits	73	24%
Non Farming		
Dairy	3	1%
Poultry	1	0%
Lease /Rental	7	2%

As expected, the survey results show that majority of farmers, around 77%, live in joint families, whereas 22% in separate families; the average family size of respondent farmers is 13, with joint family on average having 15 members and separate family 9 members. Males constitute 47.3% of total population of the farmers interviewed during survey.

Average Family Size :Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Family Size (No):	300	2	60	13.55	8.1974

		Frequency	Percent	Valid %	Cumulative %
Family Type	**Joint**	231	76.7	77.5	77.5
	Separate	67	22.3	22.5	100
Total		301	100		

The survey shows that the educational qualifications of around 45 percent of the farmers were just primary level. Whereas 17 percent were uneducated and 17 percent were qualified up to matric, and the rest 21 percent of the farmers were educated up to intermediate and above. Although around 83 percent of farmers under survey are literate as they are educated up to primary or above, yet these statistics cannot be generalized, as sample is subject to selection bias and inadequate for this type of generalization. As far as educational facilities, 75% of the respondents have primary/middle schools in their own villages, whereas remaining 25% have primary/middle schools within the average distance of 6.2

km from their homes. Farmers, covered during survey spend in the range of Rs.1,611 to 12,000 on their children's education each month.

The survey shows that more than half of farmers were deprived of accessibility to basic health facilities in their villages, since 46.3% of the respondents did not have access to any medical facility (excluding Hakeem) in or around their villages. Sixty four percent of the respondents had to travel from 2-5 km to reach Basic Health Units (BHUs). Conversely, 74% and 41.7% of respondents had access to Hakeems and dispensers respectively and 43.6% of the respondents had to travel from 3-7 km to reach nearest hospital.

4. FARM SECTOR

Rural economy of Sukkur region predominately consists of farming, which is also a major input for trading and manufacturing activities in the region. Thus farming is an essential and integral part of economy of the Sukkur district. As per survey results, almost all the farmers covered in the survey are engaged in farming which constitutes a major chunk of their income and wealth. Wheat and rice are two major crops of the area being cultivated by 93% and 58% of the respondent farmers respectively.

4.1-WHEAT

Production/acre

Sukkur is the major wheat producing district, with 1.5 million tons wheat production in the year 2007. As discussed above, most (93%) of the farmers covered in the survey were cultivating wheat with average productivity of 26.3 maunds per acre with maximum and minimum productivity of 60 and 8 maunds per acre respectively. This is slightly lower than the national average of 28 maunds per acre (approx).

Although there was very weak correlation between the area under cultivation and production yields, the respondent farmers having land holdings of 12.5-25 acres obtained relatively better production yields of 34.48 maunds per acre. Interestingly, the farmers with land holdings of up to five acres have the lowest production yield of 25 maunds per acre.

Wheat yield vs. Land Holding

	N	Mean	Min	Max
Nil	3	30.67	22	40
Up to 5 acres	71	24.83	8	40
5-12.5 acres	94	25.76	14	40
12.5-25acres	44	34.48	10	40
25-50 acres	33	26.82	20	35
above 50 acres	29	28.71	15	60
Total/Overall	274	27.41	8	60

Use of Seed

The survey results show that almost 49% of wheat cultivators used privately purchased seed for wheat cultivation, 33% used their own retained seed and 18% used the seed purchased from Public Sector Seed Corporations.

Usage of fertilizer

As per survey results, majority, 93%, of the cultivators used fertilizer; the rest 7% however did not use any fertilizer for the wheat cultivation. A large majority, 84% used only chemical fertilizer and 9% used only organic fertilizer. On average, the respondent farmers used 96.73 Kg of chemical fertilizer per acre with the maximum and minimum of 350 Kg and 40 Kg respectively. However, two third of the wheat cultivators used around 100 kg per acre. Whereas, per acre usage of organic fertilizer was one trolley with maximum and minimum of 2 trolleys and 0.5 trolley respectively.

Both Fertilizer Usage

	N	Min	Max	Mean
Organic (Trolley)	45	0.5	2	1.05
Chemical (Kg)	280	40	350	93.5

Table-4.1.2

Chemical Fertilizer used/acre: Chemical (Qty)

	Frequency	Percent
50	59	21%
75	15	5%
100	185	66%
150	12	4%
200 and over	9	3%
Total	280	100%

Use of Pesticides

As per the survey, around 96 percent of wheat growers used pesticides to protect their wheat crop from diseases and pest attacks. Per acre pesticide usage was on average 2 liters with maximum and minimum of 8 liters and o liter respectively.

Pesticides Used in Wheat (Lit./acre)

Avg	2.04
Min	1
Max	8
Count	265
SD	0.89

Cost of Production

The average per acre cost of wheat was Rs. 10,700/-, based upon the average figures of cost given by respondents of the survey. The break-up of this cost was fertilizer Rs. 3,378/- (31.7%), Pesticides Rs 1,837/- (17%), threshing Rs. 1,693/- (15.8%), labor Rs. 1,182/- (11%), seed Rs. 1,080/- (10%), administration Rs. 1,065/- (10%) and water Rs. 462/- (4%).

Cost of Production of Wheat per acre

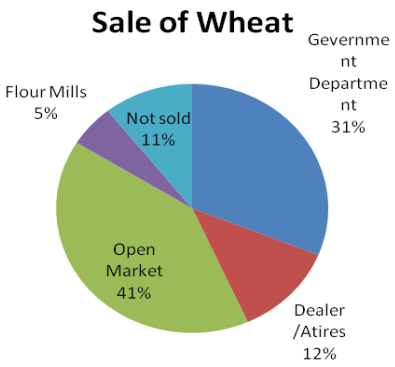
	N	Mean (Rs.)
Seed	239	1080.54
Fertilizer	280	3378.3
Pesticide	272	1836.76
Labor	226	1182.3
Water	215	461.87
Threshing	147	1693.64
Administrative	186	1065.46
Total		**10698.884**

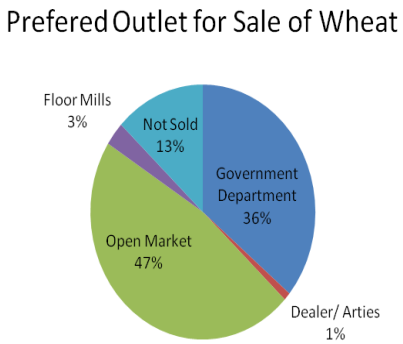
Sale of Wheat

The survey showed that about 89% of the farmers engaged in wheat cultivation sold their wheat during the year whereas the remaining 11% retained all the produce for domestic consumption.

Wheat sold to:

	No. of Farmers	Percentage
Government	93	31
Dealers	36	12
Open market	123	41
Flour Mills	15	5
Not Sold	33	11
Total	300	100%





The majority of respondent farmers 41% sell their produce in the open market, 31% to government departments, 12% to artries and 5% sell their wheat produce to flour mills.

When asked about the preferred outlet for sale/disposal of wheat, 47% favoured open market and 36% preferred the Government Departments. The preference for Government Department in Sukkur was much higher than Gujranwala, which suggests relatively better trust of the farmers in the District on Government procurement system and price.

Interestingly only 1% of the respondent farmers considered arties as the preferred outlet for sale of wheat, whereas 12% respondents actually sold the produce to the artries. The difference is attributable to obligation to sell to dealers and artries against loan taken.

Wheat Retained

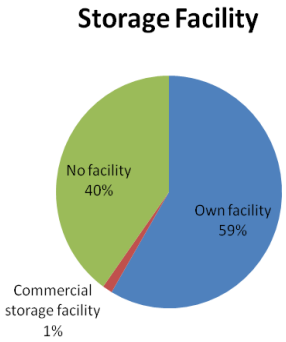
Wheat Retained

Retained for	No of farmers	Percentage
Own consumption	224	75%
Not Grow	52	17%
Not Retain	24	8%
	300	100%

92% farmers who cultivated wheat retained the wheat for personal consumption and using the same as seed. Each farmer on average retained 50 maunds of wheat for personal consumption and for use as seed. Some farmers also retained a part of produce for gifts, charity, in kind consideration, labor and Ushr purposes. The minimum & maximum quantity of wheat retained for Ushr & for Gifts are 2 & 20 maunds respectively.

Storage Facility

The commercial storage facility is available in only 3 villages surveyed. 59% farmers had their own storage facility; while 40% of the farmers had no storage facility at all in the village, which force them to sell the produce soon after harvesting.



Storage Facility

	No of farmers	%	
Own Facility	177	59	
No Facility	120	40	
Commercial storage facility	3	1	
Total	300	100%	
Desire of Storage Facility	**Frequency**	**%**	**Adj. %**
Yes	211	70%	85%
No	37	12%	15%
Not Growing	52	17%	-
Total	300	100%	

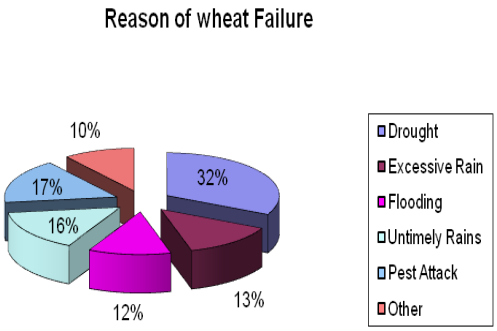
The position could be attributed among others to i) majority of the respondents were small farmers who cannot afford to build their own storage facility ii) farmers were obligated to sell the production to dealers/arties due to credit purchase of inputs or loans taken from the dealers/arties, and iii) no government support for establishing such facilities on commercial basis.

In few villages of tehsil SalehPat, however, majority of farmers have their own storage facilities and three of them use it on commercial basis as well. When asked about the need for any storage facility, about 85% of wheat growers responded positively that they would like to have a commercial storage facility for retaining their crop for better price, and use as a seed for next crop; this will also help them to keep the quality of their produce especially in bad weather. 17%, however responded negatively and said that it would increase the overall cost of their produce whereas 1% already have such facility.

Crop Failures and its Reasons

About 92% of the respondent farmers engaged in wheat cultivation had faced crop failures; complete, major or minor, during last 5 years. 121 (40%) of the respondents suffered complete loss; 67% faced major loss and 60% faced minor losses once in last 5 years. The drought, pest attacks, rainstorms, untimely rains and flooding were responsible for most of the wheat crop failures during last 5 years.

	Number	Percentage
Farmers experienced crop failure in last five years	276	92%
i) minor loss in any year	180	60%
ii) major loss in any the last five year	202	67%
iii) complete loss in any of the last five years	121	40%
Reasons of failure		
Drought	221	74%
excessive rain & storm	91	30%
Flooding	81	27%
untimely rains	106	35%
pest attack	115	38%
Other	70	23%



4.2. RICE

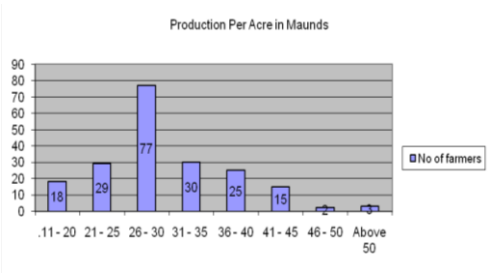
Production/acre

About 58% of the respondent farmers of the district Sukkur were engaged in rice cultivation, the average per acre production of rice was 31 maunds with maximum and minimum yields of 60 maunds/acre and 11 maunds/acre respectively. 92% of rice cultivators had production yield of 30 maunds/acre or more.

Rice: Production vs. Land holding					
	N	Mean	S. E	Min	Max
Up to to 5 acres	57	31	0.98	20	60
5-12.5 acres	62	30.52	0.69	15	40
12.5-25 acres	24	31.54	1.58	15	55
25-50 acres	18	30.5	1.15	20	40
Above 50 acres	19	29.74	2.13	11	50

Rice: Production/acre	
Mean	30.7
Standard deviation	6.9
Maximum	60
Minimum	11

As the relationship between the production yield and land holding is concerned, the farmers holding medium size land 12.5-25 acres had the highest rice production per acre of 31.5 maunds and the farmers holding above 50 acres land had the lowest rice production per acre of 29.7 maunds.



Seed/sapling used

Majority (77%) of the rice cultivators interviewed during the survey purchased seed/sapling from the private markets rather than using their own seeds retained during earlier harvest of the rice; so most of the cultivators need a chunk of money to purchase seeds at the time of sowing rice. Only 22% of them used their own retained seed. Ironically, none of the cultivators purchased it from Public Sector Corporation.

	Frequency	%	Valid %
Own seeds/saplings	41	13.62	22.4
Purchased from pvt Market/Nursery	141	46.84	77.05
Purchased from Public sector	1	0.33	0.55
Total	183	60.8	100
Not growing		39.20 %	

Fertilizer used

Almost all the rice cultivators interviewed during the survey used the chemical fertilizer with the average of 134 kg per acre while maximum and minimum usage was 200 kg/acre and 50 kg/acre respectively.

Fertilizer used/acre: chemical (Qty)			
KG	Freq.	Total	Adj.Freq %age
50	16	800	8.7%
75	1	75	0.5%
100	53	5300	29.0%
150	85	12750	46.4%
200	28	5600	15.3%
Total	183	24525	100.0%
Average Per Acre	134.0 1639		

While organic fertilizer usage was on average about one trolley but it was along with chemical fertilizer. The table below sheds some light on the association/relationship between the fertilizer usage and the rice yields. The farmers using 100-150 Kg of fertilizer tend to have relatively better yields.

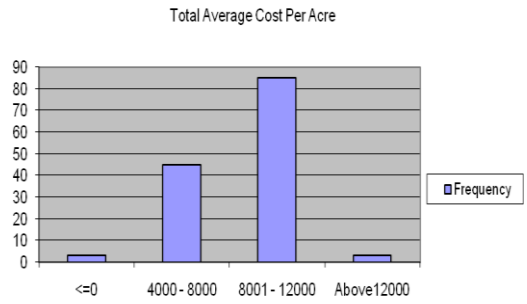
Relationship between Chemical Fertilizer used and Rice productivity															
		production/acre (in Maunds)													Total
		11	15	20	22	24	25	30	35	37	40	50	60	95	
Fertilizer used/acre: chemical (Qty)	50 Kg	2	3	6	1	1	1	0	1	0	1	0	0	0	16
	75kg	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	100 kg	1	2	8	1	0	8	23	6	0	2	1	1	0	53
	150 kg	0	0	4	1	2	10	38	17	1	11	0	0	1	85
	200 kg	0	0	1	0	0	6	11	6	0	4	0	0	0	28
Total		3	5	19	3	3	25	73	30	1	18	1	1	1	183

Rice: Production Cost

The average per acre cost of Rice was Rs.7,302/- with minimum and maximum of Rs.600/- and Rs.12,700/- respectively. The difference in the cost of production is due to farmers' usage of different types of fertilizers, pesticides, irrigation methods and other input.

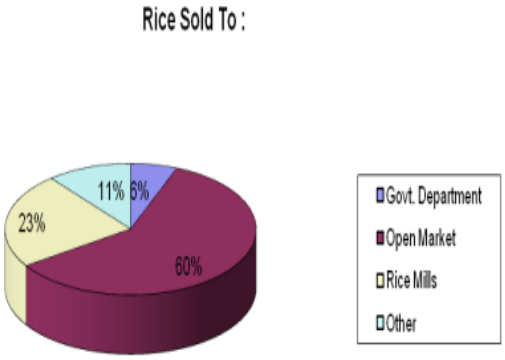
Rice: Cost of Production /Acre (Rs.)	
Average	7301.75
Max.	12700
Min	600
SD	2659
Valid Observations	183

The prices and utilization levels of each of previously mentioned component vary from farmer to farmer, depending upon per acre use and purchase on credit or cash payment.



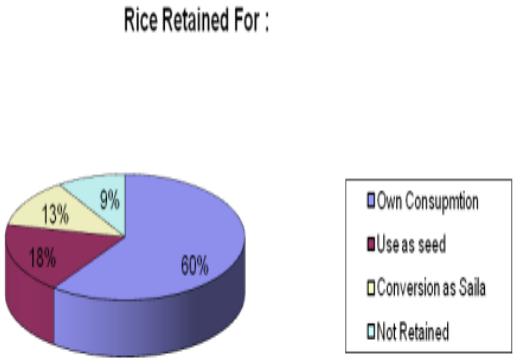
Sale of Rice

Majority of farmers, about 60%, sold their product in open market for timely disposal of the produce and avoiding the storage cost. Most of those who did not sold their produce in open market were under compulsion to sell the produce to arties or did not have access to open market.



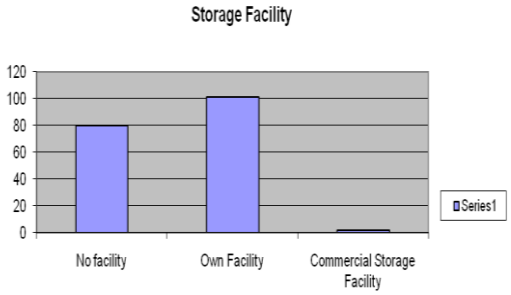
23% of farmers were approached by rice mills for sale of their produce. Rice mills in the district and especially in Bagarji town, which is famous for rice mills, approach the fields and take the produce against settlement of loans/advance payments made to the farmers.

Rice Retention



About 56% of the respondent farmers engaged in rice cultivation retained rice for own consumption. The expectations for further hike in price levels was one of the reasons for the retentions of rice for own consumption. 18% farmers retained certain portion of rice for use as seed in next crop. Another 13% process their produced rice into Saila rice and another13% retained rice for multiple reasons like in kind compensation to labor, gifts for family and friends etc.

Storage Facility for Rice



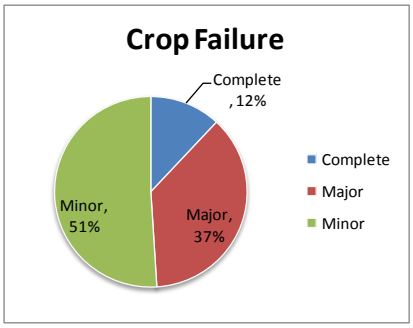
The data obtained from the survey shows that 61% farmers don't have any type of storage facilities in the villages. 25% have commercial storage facility in village or/and have access to storage facility established by others. About 58% of farmers in the survey would like to have storage facility in or around their villages.

Need For Storage Facility			
	No of farmers	**Percent**	**Valid Percent**
Yes	121	40%	66%
No	62	21%	34%
Not Growing	117	39%	
Total	300	100%	100%

The limited financial capacity, heavy dependence on dealers and arties for crop inputs as well as sale of the crop and no sufficient support from government to build the storage facilities are the main reasons for the absence of storage facilities in the district.

Crop Failures and Reasons

All the rice farmers covered in survey had experienced crop failure major, minor, and/or complete during last five years. 12% suffered complete loss in 5 years, 37% suffered major loss in last 5 years. 51% suffered minor losses in last 5 years and 13% suffered more than one type of loss.



Out of those having complete loss in last five years, 25% faced it once. For major loss category 36% faced it twice and only one farmer faced it three times during last five years. For minor loss category, 30% faced crop failure only once, 47% faced twice and 23% faced thrice or more. Moreover, 13% of rice growers experienced combination of minor, major, and complete crop failure during the last five years.

Reasons of Rice Crop Failure:		
Reason	**No of Farmers**	**Percent**
Drought	150	50%
Storm & Rain	29	10%
Flood	2	1%
Pest	116	39%
Other	3	1%
Total	300	100%

Interested For Insurance		
Liked Insurance	**No of farmers**	**Percent**
Yes	138	46.0%
No	168	56.0%
Total	300	100.0%

The drought and pest attack were the two major reasons for the crop failures experienced by the rice farmers during last 5 years. Through awareness campaign in the farmers community of this region about the effective utilization of irrigation water and pest management technique, such losses can be avoided.

4.3. Cotton Crop

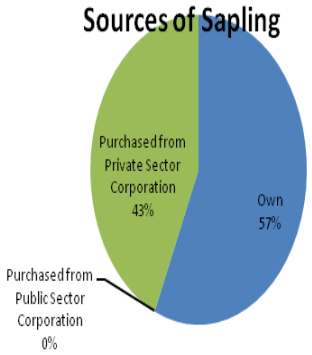
Productivity

30% of the respondent farmers were engaged in cotton cultivation and having an average yield of 27.5 maunds per acre with maximum and minimum of 40 and 10 maunds per acre respectively. The table gives average per acre yield of cotton by farmers with different land holdings. The farmers with larger land holdings appeared to perform better than the farmers with smaller land holdings; the farmers having 50 acres or more land holding obtained the highest yield of 29 maunds per acre followed by 28.5 maund per acre of farmers with land holdings of 5-12.5 acres.

Cotton: Production/acre (in Maunds) vs Land Holding				
	N	Mean	Min	Max
Up to 5 acres	9	25.44	15	35
5-12.5 acres	36	26.69	10	40
12.5-25acres	12	28.50	20	35
25-50 acres	18	26.78	10	35
Above 50 acres	15	29.00	20	40
Total/Overall	90	27.50	10	40

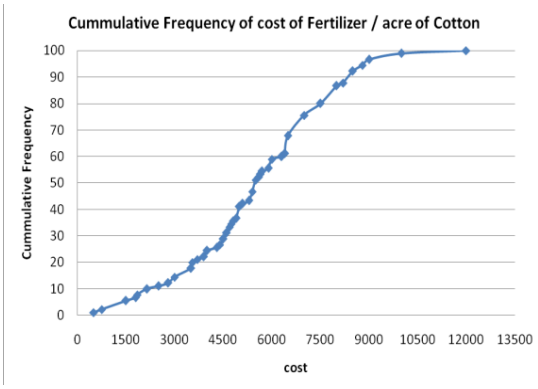
Seed/Sapling: Use & Cost

None of the cotton cultivators covered in the survey purchased seeds from Government firms; more than half (57%) used their own sapling and the rest (43%) purchased the seed from Private Sector Corporations. The cultivators incurred, on average, Rs. 1,500/- per acre cost for purchasing seed/sapling with maximum and minimum of Rs. 4,500/- and Rs. 200/- respectively.



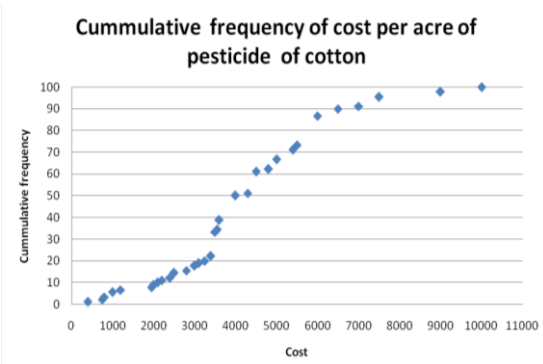
Fertilizer: Usage & Cost

All the cultivators, who mentioned fertilizer use, used chemical fertilizer. The averagely cost of fertilize was Rs. 5,632/- per acre with maximum and minimum of Rs. 12,000/- and Rs. 500/- respectively. However 90% of cultivators incurred the cost in between Rs. 1,500/- and Rs. 9,000/-.



Pesticide: Use and other Cost

On average, a cotton cultivator incurred Rs. 4,493/- per acre cost on pesticide with maximum and minimum of Rs. 10,000/- and Rs. 400/- respectively. The other administrative costs was on average Rs.1,500/- per acre. Majority, 42% of the cotton growers incurred Rs.500 to 1,000, 34% Rs.1001-2000, 18% growers incurred Rs. 2,000 to 5,000 as administrative cost.



Other Administrative Cost /Acre

Cost	Frequency	Percent	Valid Percent
0	1	0%	1%
200-500	4	1%	5%
501-1000	32	11%	42%
1001-2000	26	9%	34%
2001-3000	7	2%	9%
3001-4000	4	1%	5%
4001-5000	3	1%	4%
Not grown	223	74%	
	300	100%	100%

Production Cost:

The average per acre cost on production of cotton was Rs. 11,020/- with minimum and maximum of Rs. 4,800/- and Rs. 20,000/-. 38% farmers incurred Rs. 4,000/- to Rs. 8,000/-, and 25% incurred Rs.12,000/- to Rs.16,000/- as total cost of producing cotton per acre.

Average cost of Cotton Production /Acres

Average Cost/Acre	No of Farmers	Percent	Valid Percent
<=0	3	1%	4%
1.-4000	6	2%	8%
4001-8000	29	10%	38%
8001-12000	12	4%	16%
12001-16000	19	6%	25%
16001-20000	5	2%	6%
Above 20000	3	1%	4%
Not Grown	223	74%	
Total	300	100%	100%

The variation in per acre production cost is mainly due to use of own labor and different methods of cultivation. Variations in cost of seed and fertilizer (i.e. cash and credit) were also found as a factor for variation in total production cost.

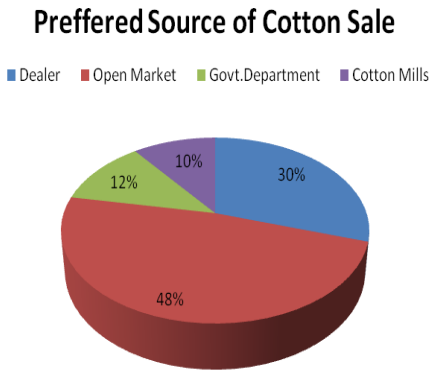
Sale of Cotton:

The data obtained from the survey shows that about 48% farmers sold their cotton crop in open market mainly to fetch better price and have timely payments, about 34% sold cotton crop to dealers due to obligation to sell to them for retiring the

Sale of Cotton

Sold to	No of farmers	Percent	Valid Percent
Dealer	26	9%	34%
Open market	37	12%	48%
Govt.	2	1%	3%
Cotton mills	9	3%	12%
Govt. and Open market	2	1%	3%
Not sold	1	0%	1%
Not grown	223	74%	
Total	300	100%	100%

debts taken during the season and input bought on credit. About 12% sold their cotton crop to cotton mills due to easy access (mainly found in Rohri and Saleh patt Talukas). When asked about the preferred outlet for sale of their crop majority that is 48% favored open market and about 30% responded in favor of dealers.



Storage Facility

About 36% farmers had their own storage facility for storage of cotton crop. 3 farmers responded that they use rented cotton storage facility provided by influential persons. Majority, 60%, farmers do not have storage facility at all and they sell their produce immediately after the harvest at available outlet.

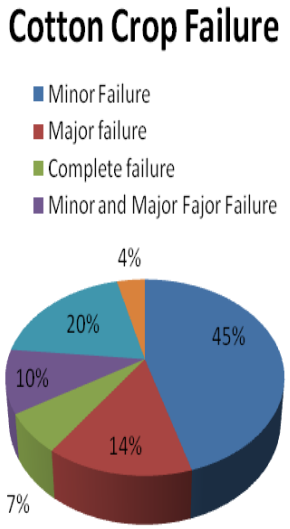
Cotton Storage Facility

Facility	No of farmers	Percent	Valid Percent
No facility	46	15%	60%
Own Facility	28	9%	36%
Commercial facility	3	1%	4%
Not grown	223	74%	-
Total	300	100%	100%

When asked about the need for the commercial storage facilities, about 60% of farmers responded positively and said they agreed to pay for such facility in village or nearby.

Crop Failure and Reasons:

Data obtained from the survey show that most of the cotton growers in the district experienced crop failure during last five years. About 45% of the respondent farmers say they faced minor crop failure; while 14% faced major crop failure and about 7% faced complete crop failure during last five years. About



34% farmers faced multiple kind of crop failures during last five years i-e; minor and major, major and complete loss.

When asked about the reasons of such failures, the drought remains the main reason experienced by about 45% farmers. About 18% farmers got their crop failed due to pest attack and about 8% due to rain and storms.

Reasons for Cotton Failure			
Reasons	No of Farmer	Percent	Valid Percent
Rain and storm	6	2%	8%
Pest Attack	14	5%	18%
Drought	35	12%	45%
Other	10	3%	13%
More than One cause	12	4%	16%
Not grown	223	74%	
Total	300	100%	100%

Through measures for improvement in water supply and effective pest control program, the probability of cotton crop failures in the district can be minimized.

4.4. Sugarcane Crop

Production

About 15% of the respondent farmers in the district were growing sugarcane. Average per acre production of sugarcane of the respondent farmers was 730 maunds with minimum and maximum of 10 and 1,100 maunds. On average it costs Rs.14,019/- per acre to produce sugarcane.

Cost of Production /Acre in Rs.

Avg.	14019
Min.	5300
Max.	29000
SD	4822

Production/acre	
Mean	730
Min.	10
Max.	1100

About 8% of the respondent farmers who grow sugarcane got upto 500 maunds yield per acre, 41% obtained 501-800 maunds per acre and 51% had a yield of 800 maunds per acre.

Production/acre (in Maunds)

Production	No. of farmers	Valid Percent
Upto 500	3	8%
501-800	15	41%
801 & above	19	51%
Total	**37**	**100%**

Seeds, Saplings Used for Sugarcane

Majority 49% of the sugarcane growers in Sukkur district used seeds/saplings purchased from private market/nurseries which are mostly provided from sapling farms. About 33% used their own seeds retained from the previous crops. About 18% purchased seeds/samplings from Public Sector Seed Corporation.

Seeds Saplings Used

Seed/Sapling	Freq.	Percent	Valid Percent
Own Seed	15	5%	33%
Purchased from Public Sector	8	3%	18%
Purchased from private Nursery	22	7%	49%
Not growing	255	85%	
Total	300	100%	100%

Fertilizer & Pesticides Used:

Most of the sugarcane growers in the district use inorganic fertilizer while only 2% farmers used 3-4 trolleys of organic fertilizer for their sugarcane crop. About 44% of the farmers used 100 Kg of chemical (inorganic) fertilizer which mostly comprises one bag of DAP and one bag of Urea per acre.

About 27% used 150 kg of inorganic fertilizer while about 18% used 200 kg and some 4 farmers even used up to 250 kg of chemical fertilizers in each acre for their sugarcane crop.

Pesticides Used in Sugar Cane

Cost in Rs./acre	
Avg	2543
Min	0
Max	6000
SD	1149

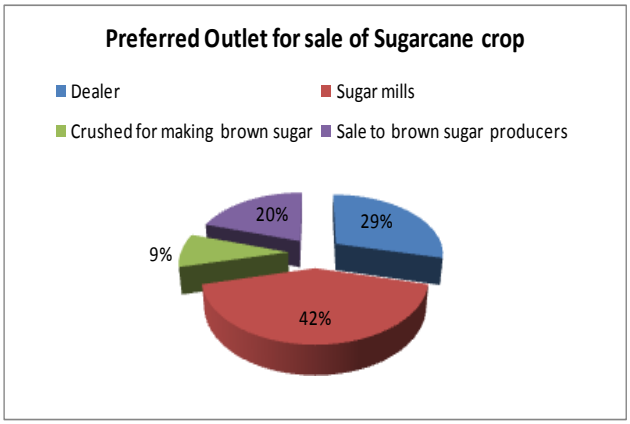
About 76% of farmers covered in the survey used pesticides and on average incurred Rs.2543/- per acre for the purpose. Few farmers even spent up to Rs.6,000/- on pesticides for each acre of sugarcane crop.

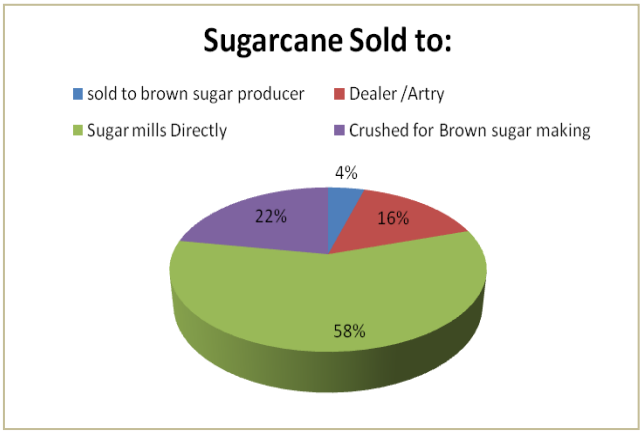
Sugarcane Fertilizer Used/Acre

In KGs	Freqeuency	Total	Adj. Frq. %
50	1	50	2%
100	20	2000	44%
150	12	1800	27%
200	8	1600	18%
250	4	1000	9%
Not growing	255	-	-
Total	300	6450	100%
Average Use Per Acre		143.3333	

Sale of Sugarcane

About 58% of the sugarcane growers sold their produce to sugar mills directly due to i) timely disposal of their produce and ii) contracts and agreement with sugar mills. About 22% farmers crushed the sugarcane for making brown sugar and (gur) due to i) demand in market and ii) better price. About 16% sold to dealers / artries due to i) compulsion to sell the produce under the loans/inputs taken from dealer/artry, ii) timely disposal of produce, iii) convenience in settling dues/loans.





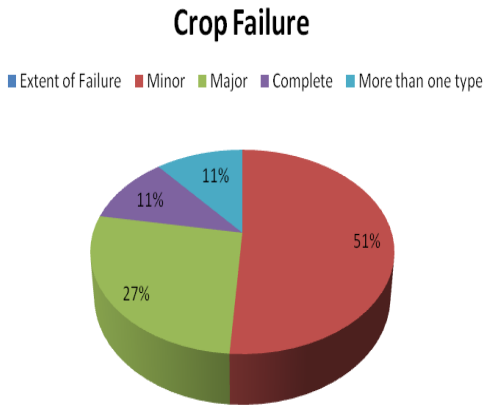
When asked about the most preferred outlet for selling their sugarcane crop most of the farmers, 42% preferred to sell directly to sugar mills, 29% responded in favor of selling to dealers and artries to maintain better relation with them for procurement of input, about 20% preferred to sell to brown sugar producer.

Crop Failure and Reasons

About 51% of the sugarcane farmers covered in the survey faced minor losses;

27% suffered major loss and about 11% faced complete loss of their sugarcane crop during last five years. About 11% farmers faced multiple types of losses during last five years.

The drought, pest attack and rain storm remain the main reasons for such crop failures and losses. About 56% farmers considered drought as the reason for the crop failure, 27% blamed pest attack and about 9% responded that it was due to untimely rains and storms.



Reason for Sugarcane Crop failure

Reason	No of farmers	Percent	Valid Percent
Drought	25	8%	56%
Storm	1	0%	2%
Flood	1	0%	2%
Rain	4	1%	9%
Pest	12	4%	27%
Others	2	1%	4%
Not Growing	255	85%	
Total	300	100%	100%

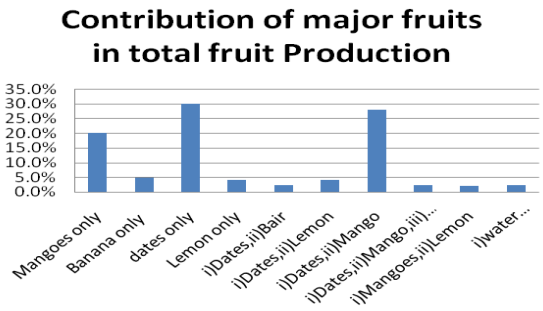
4.5. FRUIT CROP

Major Fruits:

Major Fruit Produced	Percent
Not Produced	83.3%
Mangoes only	3.4%
Banana only	0.8%
dates only	5.0%
Lemon only	0.7%
i)Dates,ii)Bair	0.4%
i)Dates,ii)Lemon	0.7%
i)Dates,ii)Mango	4.7%
i)Dates,ii)Mango,iii) Falsa,iv)Lemon	0.4%
i)Mangoes,ii)Lemon	0.3%
i)water melon,ii)honeydew,iii)Mango	0.4%
Total	100%

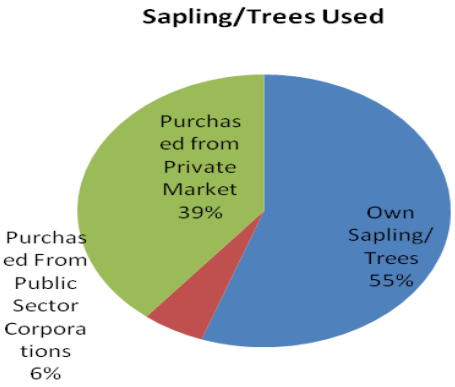
The survey results show that 16.7% of the farmers covered in the survey grew fruits in a total area of 902 acres. Dates, Mangoes, and Bananas were the major fruits produced.

Date is the mostly grown fruit as about 30% of fruit growers grew it and obtained on average 1.5 maunds of Dates per tree; with about 70 trees per acres the yield was 105 maunds per acre (70x1.5=105 maunds). 28% of the farmers who grew dates also grew mangoes while 20% grow mangoes only whereas only 5% of the fruit growers grow banana, 2.3% grow Dates, mangoes, Falsa , and Lemon and 2.4% grow Watermelon, Honey dew and Mangoes jointly and only 4% produce Lemon only.



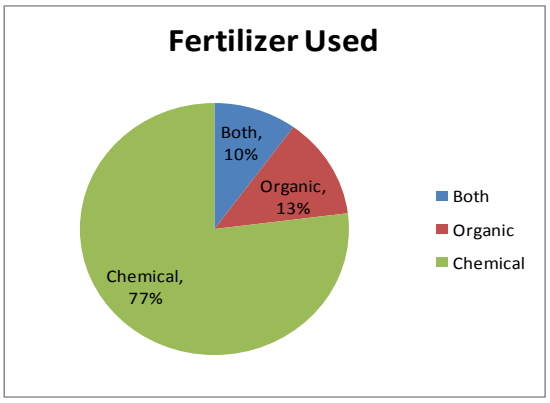
Cost of Establishment & Sapling

Average cost of establishing the orchard/acre is Rs. 20,000/-. The major source of sapling was farmers' own grown stock. 55% of fruit cultivators acquired sapling / trees from their own grown saplings and trees, 39% from private markets and nurseries and 6% from public sector corporations. The average gestation period required to establish the orchard was different for different fruits i.e 2.5 years for Dates, 2 years for lemon and lime, 3 years for mangoes and 2 years for banana.



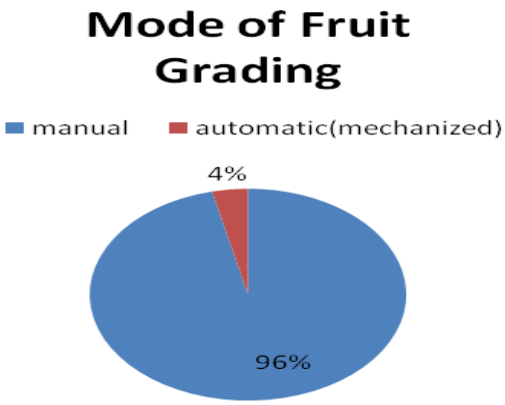
Fertilizer & Pesticide

Majority (77%) of the farmers used only Chemical / inorganic fertilizer, while 13% and 10% of the farmers used only organic fertilizer and both organic and inorganic fertilizers respectively. The average cost of fertilizer used was Rs.3,658/- per acre. Many of them used the combination of different brands of fertilizer e.g. urea & DAP. Further majority of the farmers used 2 liters /bottles of pesticides of different brands with an average cost of Rs.2,800/-. The average labor cost incurred was Rs.2,681 per acre.



Grading of fruits

Majority (96%) of the fruit cultivators were using traditional hand sorting and manual system for grading their fruit produces; whereas the rest 4% had automatic grading facility. This suggests extremely limited use of modern technology for grading the fruits.



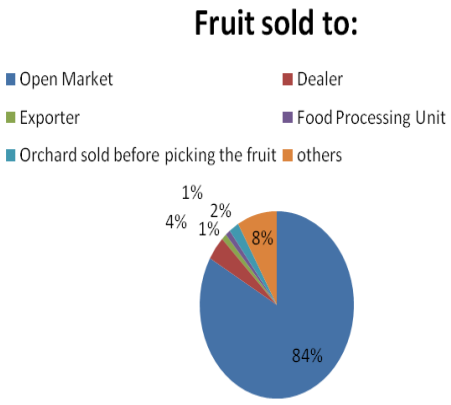
Cost

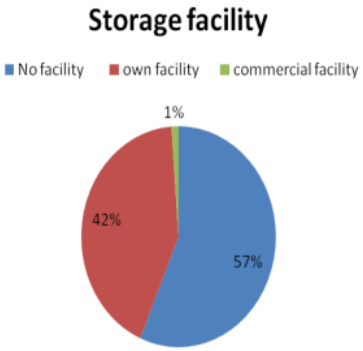
Although the average operational cost per acre was Rs.13,734/- however 17% incurred about Rs. 40,000/- per acre due to severe problems of water shortage, mostly caused by load shedding of electricity, and increasing cost of labor and transport.

Cost Structure of Fruits	
Labour cost	2681
Fertilizer	3658
Pesticides	2800
Water	1500
Other/Administrative cost	3095
Total Average Cost Per Acre	**13734**

Sale of fruits and Storage Facility

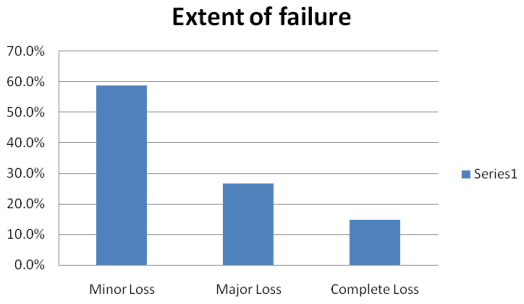
About 84% of fruit cultivators sold their fruits in open markets. The cultivators preferred to sale in open markets because of better price and timely disposal of fruits. 57% of the fruit cultivators covered in the survey had no storage facility for their produce; whereas 42% have their own storage facility and only 1% had access to commercial storage facility. 82% of the cultivators desired to have such kind of commercial storage facilities in their village like cold storage. There is good opportunity for banks to provide capital for establishing these commercial storage facilities.

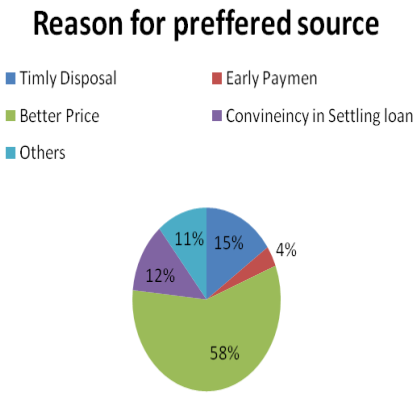




Crop Failure

Majority (85%) of the cultivators experienced crop failure during last five years; of those, 59% had incurred minor loss with 52% experiencing the minor losses twice during last five years, 27% faced major losses and 15% experienced complete loss during last five years. The Pest attack, drought, dusty storm & untimely rains were reported as the major reasons for the crop failures experienced by fruit growers in the district.



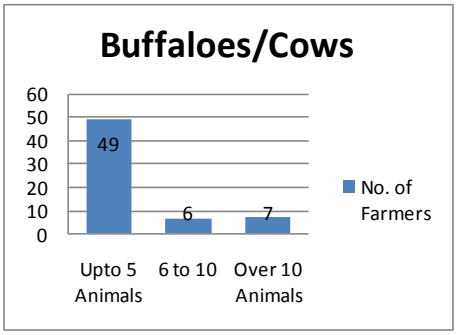


5. Non-Farm Sector: Livestock

Buffaloes / cows

Purpose	No of farmers	Percent
family milk needs	33	11%
saving in kind	1	0%
for selling the animal in market	2	1%
for both family milk need & sale of milk on commercial basis	18	6%
For Family Milk need ,saving in kind and selling purpose	10	3%
All Reasons	2	1%
Not Rearing	234	78%
Total	300	100%

Livestock plays important role in maintaining the livelihoods of the farmers by providing food & milk, traction power, manure, raw material, cash security, social and cultural identity, medium of exchange and means of savings and investments. In Sukkur district Livestock rearing activity was carried out by only 22% of the farmers surveyed. The purpose of rearing activity was to get food, work power and other agricultural uses. Livestock rearing is primarily a subsistence activity to meet household food needs and supplement farm income.



79% of the respondent farmers who are rearing livestock have up to 5 buffaloes/cows and only 9.7% had up to 10 animals while only 11.3% farmers had more than 10 buffaloes/cows. This trend of keeping animals suggests that most of the farmers found it expensive and risky activity to rear animals and they don't like to have livestock activities for commercial purpose and hence commercial dairy farms are almost non-existent in the district.

About 6% kept animals to sell the animals in the market, 11% farmers were rearing buffaloes/cows for milk, 5% for agricultural uses, whereas 78% of the respondent farmers do not rear animals at all due to availability of other sources for family food and income like having grocery stores and employment at somewhere else.

Land Holdings, Education Levels and Animal Rearing Activity

Most of the livestock rearing activity in the district was with small farmers as 44 out of 62 farmers rearing livestock had upto 5 acres of land.

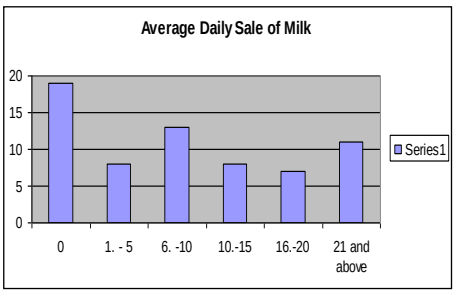
Land owned vs. Livestock Rearing															
Land Holding	**No. of buffaloes/cows/camels, the farmer owns**														**Total**
	1	2	3	4	5	6	7	8	10	15	20	21	35	50	0
<=0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
up to 5 acres	14	11	7	4	4	1	1	0	0	0	0	1	0	1	44
between 5-12.5 acres	1	2	0	1	0	1	0	1	0	0	2	0	0	0	8
between 12.5-25acres	1	0	1	0	1	0	0	0	0	1	0	0	0	0	4
between 25-50 acres	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
above 50 acres	0	0	0	1	0	0	1	0	0	0	0	0	1	1	4
	16	13	8	7	5	2	2	1	1	1	2	1	1	2	62

Similarly most of the farmers rearing livestock had upto primary level education; only 29% of the farmers rearing livestock in the district had matric or above qualification. This suggests that livestock rearing activity is predominantly concentrated in low income and relatively less educated farmers.

Education vs. Livestock Rearing

No. of buffaloes/cows/camels owned by the farmer															**Total**
Education/ No.	1	2	3	4	5	6	7	8	10	15	20	21	35	50	0
No Education	3	1	1	0	0	0	0	0	0	0	0	0	0	1	6
Primary	9	7	5	5	5	1	1	1	0	1	2	1	0	0	38
Matric	1	0	1	1	0	0	0	0	0	0	0	0	0	0	3
intermediate	1	4	1	1	0	1	1	0	0	0	0	0	1	0	10
Graduate	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Masters	1	1	0	0	0	0	0	0	1	0	0	0	0	0	3
	16	13	8	7	5	2	2	1	1	1	2	1	1	2	62

Milk Production, Retention and Sales



29% farmers rearing livestock do not sell milk at all and retain all the produce of milk for their family consumption while 12% of the farmers engaged in livestock rearing sell up to 5 liters milk per day, about 20% sell up to 10 liters, about 12% sell up to 15 liters, and about 28% sell more than 15 liters milk per day.

The survey findings suggest almost total absence of commercial dairy farming in the district. Only 22% of the farmers covered in the survey were rearing the livestock and that too was largely meant for meeting the family milk and fats needs. The level of awareness amongst the farming community about the commercial dairy farming and use of technology and latest techniques in animal rearing was also very limited. The situation could be improved by creating

awareness among farmers about the best methods and practices available for animal feed and care.

Milk Chillers and Milk Collection Centers:

92% of the 66 farmers engaged in livestock rearing neither had milk chillers nor did they use milk chillers. Only 2% had their own chillers purchased through personal savings or loans from friends and family. Further only 5% farmers engaged in livestock activity had access to central milk collection centers established by Engro Foods nearer to one of the villages.

Availability of Milk Chillers			
Farmers having milk chiller	No of Farmers	Percent	Valid %
Yes	5	2%	8%
No	61	20%	92%
Not Rearing	234	78%	-
	300	100%	

Access to Milk Collection Centers			
Farmers having milk collection centre	No of farmers	Percent	Valid %
Yes	3	1%	5%
No	63	21%	95%
Not Rearing	234	78%	-
Total	300	100%	

The increase in the number of chillers and the central milk collection centers may encourage farmers to rear more milk yielding animals.

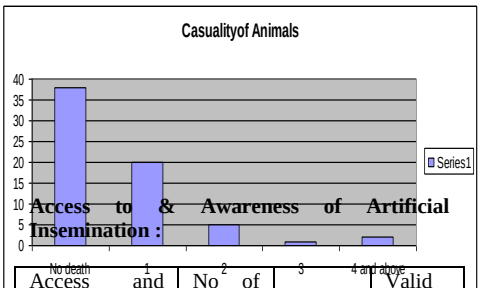
Veterinary Hospital Facility:

About 27% of the respondent farmers rearing livestock had access to veterinary clinics/ hospitals within 3 Km from their villages, 62% between 4-5 Km and 11% have this access at the distance of more than 5 Km from their villages.

Access to Veterinary Clinic/Hospital		
Access to Clinic Hospital	**No of farmers**	**Percent**
Upto 3 Km	17	27.0%
4-5 Km	39	61.9%
Over 5 Km	7	11.1%
Total:	63	100.0%

Casualty of Animals & Artificial Insemination:

About 58% of farmers rearing buffaloes/cows did not experience any casualty of the animals during last one year. 30% reported casualty of one animal, 8% lost 2 animals, 2% lost 3 and about 2% lost 4 or more animals during last one year. Stomach problem, complications during delivery/pregnancy, fever and gulgoto were the major causes of deaths/casualties of animals during the year.



Access to & Awareness of Artificial Insemination :

Access and aware about AI	No of farmers	Percent	Valid Percent
No	7	2%	11%
Yes	59	20%	89%
Not Rearing	234	78%	
Total	300	100%	

Satisfaction about Animal Rearing Activity & Insurance Facility

When asked about satisfaction level with animals rearing activity only 16% respondents responded positively and expressed their satisfaction with the activity. The remaining 84% were however dissatisfied and said their experience of rearing animals had not been successful and that they had suffered losses.

Farmers' Satisfaction about Animal Rearing Activity

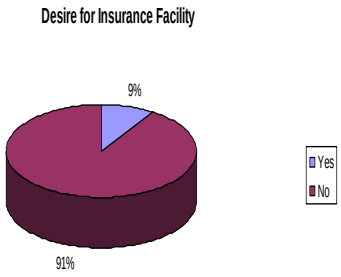
Level of Satisfaction	No of farmers	Percentage	Valid Percent
Good	5	2%	8%
Bad	56	19%	85%
Economic & Safe	5	2%	8%
Not rearing	234	78%	
Total	300	100%	100%

Contribution of Live Stock in Family Income

Contribution	No of Farmers	Percent	Valid Percent
<=0%	19	6%	29%
1.-10%	27	9%	41%
11.-20%	5	2%	8%
21.-30%	2	1%	3%
More than 30%	13	4%	20%
Not rearing	234	78%	
Total	300	100%	100%

29% farmers responded that animal rearing activity did not contribute towards their family income. 41% farmers opined that up to 10% of their family income came from rearing animals and 20% obtained more than 30% of their family income through livestock rearing.

Majority, 91% of the farmers rearing animals were not interested in having insurance facility for the animals probably due to limited awareness about the facility, its benefits, costs and operational mechanism. Only 9% showed interest in insurance facility.



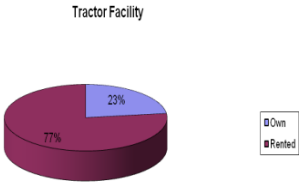
6. FARM MECHANIZATION

Tractor

All the respondent farmers have been using tractors for cultivation and preparing land for crops and a few are using tractors for transporting their crop products to market. Manual methods of harvesting were almost non-existent in all villages covered in this survey. 23% of the farmers had their own tractors whereas about 77% did not own tractors and thus used the rented tractors for cultivation. 85% of those who owned the tractor purchased tractors using their personal savings, 11% through bank financing and about 4% through loans from friends and family. The banks with only 11% share in tractor financing seem to have low penetration in the rural areas of the district. Majority (77%) of the farmers who do not own tractors and use the rented tractors could be the potential candidates for tractor financing from banks.

Tractor Ownership	Frequency	Percentages
Own	69	23%
Rented	228	77%
Total	297	100%
Missing	3	-
Total	300	

Tractor Purchased by	Frequency	Percentages
Personal savings	56	85%
Loans from friends or family	3	4%
Bank loans	7	11%
Total	66	100%
Missing	3	



Other Agri-Implements

The use of other agricultural implements like harvesters, threshers is also quite common while few farmers have rooters and trawlers etc as well, although 81% of the farmers did not own these agricultural implements. About 90% of the farmers including 8% of those who own some of the implements use the rented implements, while 11% use their own implements. The widespread use of rented tractors and other agri-implements can be attributed to availability of Agricultural Extension Shops in most of the villages.

Other Agri Implements		
Implements	No of farmers	Percent
Harvester	51	17%
Thresher	65	22%
Rooter	79	26%
Trawler	73	24%
Others	32	11%
Total	300	100%

Other Agri Implements Used		
Other Implements Used	No of Farmers	Percent
Own	25	8%
Rented	243	81%
Not Responded	32	11%
Total	300	100%

Land Holding, Education and Farm Mechanization

An inquiry into the above question may help in understanding the extent to which these two factors influence or determine the farm mechanization process.

About 76% of the farmers with landholding of 51 acres or more and 73% of the farmers having land holding between 25-50 acres owned tractors whereas none of farmers having up to 5 acre of land owned tractors. Similarly, only 7% of the farmers holding up to 5 acres of land owned other agri-implements, compared to almost 33% of those holding 25 acres and more land. The farmers with larger land holdings have better purchasing power, awareness and scales to own and effectively use tractors and other agri-implements.

Land Owned vs. Ownership of Tractors						
Land Holding	Tractor Owned		Tractor Rented		Total	
	Resp. #	% of Category	Resp. #	% of Category	Resp. #	% of Total
Nil	0	0.0%	3	100.0%	3	1%
Upto 5 Acres	0	0.0%	92	98.9%	93	31%
5-12.5 Acres	12	12.2%	83	84.7%	98	33%
12.5-25 Acres	10	22.7%	34	77.3%	44	15%
25-50 Acres	24	72.7%	9	27.3%	33	11%
=or> 51 Acres	22	75.9%	7	24.1%	29	10%
Total/Overall	68	22.7%	228	76.0%	300	100%

Land Owned vs. Ownership of Agri-Implements		
Land Holding	Agri-Implements Owned	
	Resp. #	%
Nil	0	0.0%
Upto 5 Acres	11	6.96%
5-12.5 Acres	54	34.18%
12.5-25 Acres	41	25.95%
25-50 Acres	30	19.0%
=or> 51 Acres	22	13.92%
Total/Overall	158	52.7%

Agri Extension Shop

The Agricultural Extension Shops have been established by Sindh Agricultural Department to facilitate the farming community and to promote farm mechanization.

The majority (61%) of the respondents had access to Agri Extension. The survey results indicate that Agri extension shops of Sindh agriculture department are very useful for the small farmers who couldn't afford to buy the tractor and other agri-implements. There is however a need for increasing the network of Agri-extension shops to cover the remaining about 39% of the farmers, who are presently not accessing the shops.

Ext Shops in Tehsil / Town	No of Farmers	Valid Percent
No	112	39
yes	175	61
Total	287	100

7. ACCESS TO FINANCE

Bank Accounts

Bank account	No. of Farmers	Percent
NO	156	52%
YES	144	48%
Total	300	100%

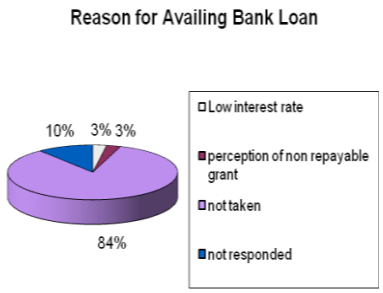
Almost half (48%) of the surveyed farmers had bank accounts; 20% were operating the account for 1-5 years, 13.6% for 6-10 years and the rest about 14.4% were maintaining the bank accounts for over 10 years. 52% of the farmers covered in the survey had no bank account. Further the family members of only 14.3% farmer were having bank accounts. The wide scale exclusion of the farmers from the net of banking services could be attributed to among others less number of banks in the near vicinity of the villages.

Other family members' a/c	Frequency	Valid Percent
No	246	85.7
1	10	3.5
2	3	1
>2	28	9.8
Total	287	100
System Missing	13	
Total	300	

Access to Bank Loans

About 5% of the farmers covered in the survey (only 15 out of 300) had obtained loan from banks, whereas 54% had taken loans from informal sources including friends and families, Input Suppliers and Arties; about 40.3% of the respondents had not taken loans from any source, formal or informal. This suggests that about 60% of the respondent farmers availed the credit facilities of which just about 8.4% had taken loans from banks and formal source and the rest about 91.6% of the farmers who had taken loan had to rely on informal sources to meet their funding needs.

Sources of Loan Taken and Outstanding		
Sources	Frequency	Percentages
Friend and Family	72	24.0%
Supplies of Input	27	9.0%
Artery	13	4.3%
Money lender	51	17.0%
MFB	1	0.3%
NGO	1	0.3%
Banks	14	4.7%
Not Taken	121	40.3%
Total	300	100



The proportion of farmers serviced by banks in the area is much lower than the national average of about 25%; and thus majority of the farmers willing to access the credit facilities are excluded from the banking services and have to rely on informal sources to meet their credit needs.

A further analysis of access to bank loans suggests that there is no correlation between size of land holdings and bank loans. There is however positive correlation of 0.238 between land holding and bank accounts. There is also positive correlation of 0.197 between education levels and probability of accessing bank loans. Although correlation is positive between educational level and bank loans availed yet co-efficient of correlation is quite low.

Land Holding	Frequency		Bank A/C Maintained		Bank Loan Availed	
	Resp. #	% of Total	Resp. #	% of Category	Resp. #	% of Category
Nil	3	1%	1	1%	0	0%
Up to 5 Acres	93	31%	28	20%	4	29%
5-12.5 Acres	98	33%	48	34%	4	29%
12.5-25 Acres	44	15%	22	15%	0	0%
25-50 Acres	33	11%	23	16%	3	21%
=or> 51 Acres	29	10%	21	15%	3	21%
Total	300	100%	143	100%	14	100%

Education and Maintenance of Bank Accounts						
Education Level	**Frequency**		**Bank A/C**		**Bank Loan**	
	Resp. #	**% of Total**	**Resp. #**	**% of Category**	**Resp. #**	**% of Category**
No. Education	51	17%	19	13%	2	14%
Primary	134	45%	52	36%	2	14%
Matriculation	52	17%	25	17%	4	29%
Intermediate	29	10%	21	15%	1	7%
Graduate	23	8%	18	13%	5	36%
Master	8	3%	6	4%	0	0%
Other Technical	2	1%	2	1%	0	0%
Total	300	100%	143	100%	14	100%
Correlation Coefficient:			0.28		0.197	

Time Consumed in Obtaining Bank Loans

We can see from results of survey that 76% of the farmers who took loans from banks consumed up to 15 days in obtaining the loan, 10% consumed 16-30 days, 6.5% 2 months and another 7.5% consumed 3 months or more in obtaining the bank loans. Although a good number of farmers, 76% obtained bank loans within 15 days, the sample size of the farmers who obtained bank loans (just 15) is too low to be representative of the actual time consumed by majority of the farmers in obtaining the bank loans.

Reasons for Not availing the Loan from Banks

i- Lack of Awareness

About 90% of the respondent farmers said that they had no information about the financial services/ products being offered by banks for the farming community. This suggests that large portion of farmers is un-aware of financial products and services being offered by banks and other financial institutions in area. This finding may be caused by poor marketing tools used by banks or un-availability of banks in rural areas for agricultural finance.

Reasons Not Taking Loan	Yes		No	
	Freq.	%	Freq.	%
Lack of awareness	258	89.60%	30	10.40%
Lack of Collaterals/ land Ownership	146	50.70%	142	49.30%
Difficulties/Delay in obtaining Passbooks	122	42.40%	166	57.60%
Religious Grounds-	206	71.50%	82	28.50%
Low Productivity	188	65.30%	100	34.70%
Cumbersome Procedures	252	87.50%	36	12.50%
No Branch in Village or in 5 Km Radius	153	53.10%	135	46.90%
Limited Agri based financing	169	45.90%	199	54.10%
Lack of Insurance against Production loss	222	77.10%	66	22.90%
High Interest Rate	235	81.60%	53	18.40%

ii- Lack of Collaterals/land ownership

More than 51% of the farmers from sample did not have adequate collaterals acceptable to banks for grant of loans; most of these farmers lacked satisfactory title to property/piece of land.

iii- Difficulties/Delay in obtaining Passbooks

About 42.4%, of the respondents attributed non-cooperation and non-issuance of passbooks by revenue department as a hurdle in obtaining the bank loans. Most of them complained against the inordinate delays in issuance of passbooks.

iv- Religious Grounds-Interest Based Loan Products

About 72% of the respondent farmer considered interest based financial product as a reason for not obtaining bank loans and said that they didn't want to take the interest (Riba) bearing bank loans. Although this finding signifies the potential demand for Islamic Agri-finance Products, however this cannot be considered as a conclusive evidence for the actual demand for the Islamic Agri finance in the District. The response of the farmers to the reasons for not availing the loans is seemingly biased and probably given without adequately understanding the

question. For instance 72% considered interest (Riba) based product as a reason for not availing the loan whereas 82% considered high interest rates as the reason for not accessing the bank loans.

v- Low Productivity

About 65% the respondent farmers considered low productivity of their farms as a hurdle in obtaining the loan. This observa3tion is also somewhat biased as most of the farmers had obtained loans from arties/input suppliers.

vi- Cumbersome Procedures/Extensive Documentation

88% of the respondent farmers had the perception that the banks procedures for granting the loans were lengthy and tedious that discouraged them to obtain the bank loans.

vii- High Interest Rate

About 82% of the respondents attributed high interest rates as a hurdle in obtaining the bank loans.

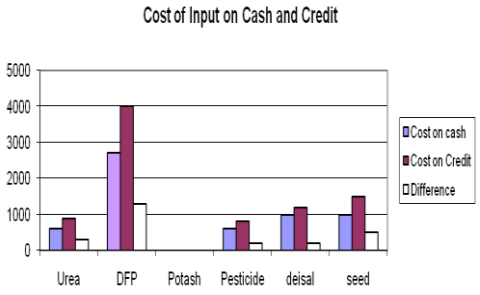
Informal Sources of Finance

As only 5% of the respondent farmers have access to bank loans in the area, most of the farmers are relying heavily on informal sources to meet their funding requirements. This is indicative of almost total reliance of the farming community with or without access to bank loans, on informal sources, particularly the artry and input suppliers. A large majority of respondent farmers, 40%, have not taken loans from any source, 24% have taken loan from friends, 17% from money lenders and only 13.3% have taken loans from arties and inputs suppliers.

Loans Taken & Outstanding from Any source:		
	Frequency	Percentages
Friends	72	24%
Suppliers	27	9%
Arties	13	4.30%
Money Lenders	51	17%
Banks	14	4.70%
Not Taken	121	40.30%
Others	2	0.70%
Total	300	100

Cost of Input on Cash and Credit

A further analysis of loans from arties/IS shows that the majority of farmers (34%) on average pay Rs.500/- more on each purchase of Rs.1,000/- or 50% on credit



from the suppliers. As the credit is for 6 months or for one season as the farmers normally pay back their loans/dues on sale of the crop, the average rate being charged by the suppliers is 60-100% per annum. These rates are much higher than the bank interest rates of about 18% p.a. Interestingly, the arty/IS also rate the farmers based on their life style, length of their relation, extent of their business relations, past repayment trend etc. The farmers with better repayment behavior get a better price than the farmers with problematic repayment behavior.

8. KEY ISSUES

The final part of questionnaire was designed considering the key issues related to farm production in Pakistan. By conducting the survey of 300 farmers of Sukkur district an effort was made to collect the opinion of farmers' community regarding these key issues.

Key Issues:

Sr. No.	Key Issues	Yes	Count	%
1	High Energy Cost	Yes	300	100
2	Water Shortage	Yes	299	99.30
3	Inferior quality of inputs/ Pesticides/seeds etc.	Yes	138	45.80
4	Non dissemination of latest Research	Yes	294	97.70
5	Lack of Mechanization	Yes	238	79.10
6	Difficulties in marketing & selling the products	Yes	192	63.80
7	Lack of capital and financial resources	Yes	266	88.40
8	Time lost in the processing/ sanctioning of credit	Yes	281	93.40
9	Lack of farm to market roads	Yes	143	47.30

High Energy Cost

100% respondents considered that the high energy cost coupled with frequent power outages was one of the key problems. The power outages particularly in crops which continuously need water substantially increase the production cost as the farmer has to use diesel engines for meeting their water requirements. The energy crisis reduced the per acre yield of the farmers which effect the earnings of farmers.

Water Shortage

About 99.3% farmers in the sample considered water shortages due to unavailability of water in the canal system as one of the key hurdles/issues faced by farmers. The existing tube wells are also not meeting the requirements of the farmers due to lowering of water level. The increasing frequency and duration of load shedding, high energy costs also deter the farmers' ability to adequately and cost effectively water the fields.

Inferior Quality of Inputs

Around 45.8% farmers consider that the seed available in the market is of inferior quality and thus affects the farm productivity.

Non-dissemination of Latest Research

97.7% respondents were of the opinion that limited or no access to latest research and farming techniques is an issue, which, if resolved, substantial improvement in farm productivity could be achieved.

Difficulties in Marketing & Selling the products

64% farmers were facing difficulties in marketing & selling the produce due to poor network of farm to market roads, lack of awareness and information about the market trends, lack of adequate storage capacity etc; the arty system also bounds them to sell their produce to arties. The support price system of government has also been unattractive to the farmers as it does not reflect the true return of their investment and efforts. This encourages the middle man who hoards the produce and gets maximum benefit by exploiting the weak and vulnerable farming community.

Lack of Capital & Financial Resources

About 88% farmers considered that lack of capital and financial resources as one of the key issues faced by them. This limits their ability to purchase necessary inputs like urea, pesticide on time which affected the productivity.

Time lost in Processing & Sanctioning of Credit

93% respondents were of the opinion that lengthy and complex loan sanctioning procedure discouraged the farmers to apply for credit.

Lack of Farm to Market Roads

47% respondents pointed that lack of farm to market roads was also one of the key issues faced by them that limit their ability to fetch better prices of their produce and also cause substantial post - harvest losses. Due to this reason they sell their produce to middle man who later on sells in the market at higher prices.

The issues discussed above related to problem of farming community show that the farmers of the Sukkur region, like other areas of Pakistan, considered water shortage, access to credit, increasing energy cost as the major problems which can be resolved by improving the system. The education, training and awareness programs for dissemination of latest research in farming may also help the farming community in improving their productivity.

9. CONCLUSION

The Purpose of this agri survey at Sukkur district was to explore the dynamics of rural economy and facilitate and enhance the stakeholders understanding of the rural economy of Sukkur district. It was also aimed at highlighting the factors responsible for behind low credit absorption ratio in rural areas of the district and facilitating banks in provision of credit and other financial service to the rural communities of this area.

The following points summarize the key findings of the survey:

- Majority of the farmers comprise subsistence farmers as 65% of the farmers interviewed during the survey have land holdings of up to 12.5 acres;
- Majority (97%) of farmers' livelihood solely depends upon farming and merely 3% of them also work in non-farming sector along with farming;
- Around 77% of farmers live in joint families;
- 17% are uneducated and 45% of the farmers are having just primary education;
- Farmers, studied during survey, spend monthly around Rs. 1,611/- on their children's education, with the maximum amount of Rs. 12,000/-;
- Average wheat productivity is 27.41 maunds per acre which is a little below than average wheat production per acre in Pakistan;
- 93% of the wheat cultivators used fertilizer;
- 23% of the farmers had their own tractors whereas about 77% did not own tractors and thus used the rented tractors for cultivation;
- About 48% of the respondent farmers had bank accounts;
- About 85% of the farmers who had taken loans/credit from Input Suppliers (IS) were obligated to sell the produce to the suppliers;
- Only 5% of the farmers had obtained loans from banks, whereas 54% had taken loans from informal sources;
- About 72% of the respondents farmer considered interest - based financial product as a reason for not obtaining bank loans.

LIST OF SURVEYEDVILLAGES

TEHSIL ROHRI

S.No.	Village	UC	Tehsil	Persons Surveyed
1	Shah Khair Mohammad	Long Bhatti	Rohri	7
2	Aanbeh	Patni	Rohri	6
4	Abi Jaro	Patni	Rohri	4
5	Ali Sheer Janwari	Patni	Rohri	4
6	Acchiyo Kubyo	Long Bhatti	Rohri	5
7	Arore	Aror	Rohri	5
8	Baban Burro	29	Rohri	5
9	Budho Jo Khuo	29-Arror	Rohri	5
10	Miani Bagat	Long Bhatti	Rohri	5
12	Gai Khan	29	Rohri	5
13	Gulan Burioro	Aror	Rohri	5
14	Mando Dero	Aliwahn-25	Rohri	5
15	Patini	Patni	Rohri	5
16	Riyarh Khan	Patni	Rohri	5
17	Roshan Abad	Patni	Rohri	5
18	Tando	Patni	Rohri	5

TEHSIL PANO AQIL

S.No	Village	UC	Tehsil	Person Surveyed
1	Allah Dino	Junna Das	Pano	3
2	Bag Pai	Hingorja	Pano	5
3	Baiji	Baiji	Pano	5
4	Bag Bullo	Aagro	Pano	5
5	Bhellar	42-Ninda Pur	Pano	4
6	Bulla	Ninda Pur	Pano	3
7	Dubar	Dubar	Pano	4
8	Haji Moulodi	Daoudlo	Pano	4
9	Kamal Khan	Dadlo	Pano	4
10	Khairo Bullo	Nindapur	Pano	3
11	Kot Bullah	Nindapur	Pano	5
12	Lal Kalwar	Sadojha	Pano	3
13	Lal Pir	Shaban	Pano	3
14	Makooro Khan	Jalal goth	Pano	5
15	Mobin	Nerch	Pano	5
16	Mullah Ans	Juna Das	Pano	3
17	Mullah Ali	Dadlo	Pano	3
18	Qabool	Juna Das	Pano	3
19	Pano	Pano	Pano	4
20	Shar	Juna Das	Pano	5
21	Sobo	Nerch	Pano	5
22	Sultan pur	Sultan Pur	Pano	4

TEHSIL SALEHPAT

S.No	Village	UC	Tehsil	Person Surveyed
1	186	34	SalehPat	5
2	Bargah	32	SalehPat	10
3	Choijyo Mahar	Mitho Mehar	SalehPat	8
4	Ghagro	34	SalehPat	5
5	Imam Bux Mehar	Mitho Mehar	SalehPat	5
6	Khabhri Bhit	34	SalehPat	7
7	Khai	32	SalehPat	5
8	Long go Goth	Tarai	SalehPat	5
9	Panjal Khan	33	SalehPat	5
10	Ratoo Bhambro	33	SalehPat	5
11	Saleh Pat	32	SalehPat	5
12	Sheroja	32	SalehPat	5
13	Wenjhko	33	SalehPat	5

TEHSIL SUKKUR S.No	Village	UC	Tehsil	Person Surveyed
1	Abad Lakho	Arain-17	Sukkur	10
2	Ali Wahn	Arain -18	Sukkur	10
3	Khando Wahan	Tamachani-19	Sukkur	10
4	Soomar Goth	Tamachani-20	Sukkur	10
5	Warayo Goth	Tamachani-21	Sukkur	10