



**IMPACT ASSESSMENT OF RAISING PRICES OF AGRICULTURAL  
COMMODITIES/INPUTS, ON SOCIO ECONOMIC STATUS OF  
FARMING COMMUNITY**

Research and Publication Unit, Planning and Research Department

**Zarai Taraqati Bank Limited**



**ZTBL**

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**Muhammad Fakhar Imam**  
Unit Head, R&PU  
Planning & Research Department  
ZTBL, Head Office, Islamabad

## 1. INTRODUCTION:

The world's economy has been subjected to high inflation since February, 2022 because of Ukraine-Russia war and during recent years because of pandemic Covid-19: December 2019, 2020 and 2021 respectively. According to farmers, many farm interest groups, agricultural ministries, agricultural departments, Agri businesses, agro service providers and all other relevant stake holders inflation has been particularly harsh on the farm sector across the globe. The prices of the farm inputs has been raising more rapidly than the prices farmers receive for agricultural inputs like Seeds, Fertilizers, Petrol, Diesel, Irrigation, Weedicides, Pesticides, insecticides, and Farm Machinery etc. A continuation of this trend would have an important implication for the supply of farm products and ultimately consumer food prices.

Farmers who suffered the most are among developing countries across the globe. Review of literature shows that an over whelming majority of farmer's are not practicing recommended practices for their crops and orchards there is a gap between farmers practices and recommendation practices different aspects were studied and researched but up till now very limited research has been conducted to analyze the hike in the prices of Agricultural Inputs and its impacts on farmers buying capacity of farm inputs. Therefore this research study was conducted by Research Team, Planning & Research Department, Zarai Taraqati Bank Limited (ZTBL) on "raising prices of agricultural commodities on socio economic status of farming community".

The main objectives of this research study are:

- To collect relevant data on the socioeconomic status of the farming community, including the level and trends in the key economic drivers, and livelihood characteristics.
- To evaluate the direction and magnitude of the potential impacts of raising prices of agricultural commodities on the aggregate agricultural output and other key agricultural indicators.
- To check the relation of raising prices of agricultural commodities and farmers practices.

Agricultural sector is the backbone of Pakistan's economy. Agriculture sector having a lion share in country's GDP and contributes about 19.2 percent. This sector provides employment to around 38.5 percent of the labor force. More than 70 percent of the Pakistani population directly or indirectly depends upon agriculture for subsistence/livelihood. (Economic Survey of Pakistan, 2021-22).

In Pakistan nearly 67.7% of the population lives in rural areas. Nearly 62 percent of the country's population is directly or indirectly linked with agriculture for their livelihood/subsistence. The Agriculture sector's strong linkages with the rest of the economy are not fully captured in the statistics. While on the one hand, the sector is a primary supplier of raw materials to downstream industry, contributing substantially to Pakistan's exports, on the other, it is a large market for industrial products such as fertilizer, pesticides, tractors and agricultural implements.

It is recognized that development in agricultural sector has brought significant changes in the pattern of agricultural production in the country. The nature of inputs, the intensity of their use pattern of disposal of output have undergone change, with the result that production has become more market oriented today than in the past.

The silent features of the agricultural technology in recent years have been (1) An enormous increase in the use of fertilizers and other purchase input, (2) a rise in the share of marketed surplus to total production and (3) an increase in risk arising from technical & market forces but unfortunately during the past decade things has been changed enormously the market prices of the agricultural/ farm inputs has gone very high because of the multiple factors and now was beyond the reach of the poor farmers in Pakistan.

Main Factors that Impact Farm Input Costs are:

- 1) Russia-Ukraine War
- 2) Pandemic (Covid-19)
- 3) Climate Change
- 4) Electricity, Natural Gas and Petrol Prices
- 5) Fertilizer Mafia/cabal

### **1.1 Russia-Ukraine War impacts on Agricultural Economy:**

Wars always have a very bad impact on agricultural sector. But the war between Russia and Ukraine is completely of different nature. Both Russia and Ukraine are known as agricultural production houses, in this context of globalized agricultural markets have never seen such consequences before and it's a very serious threat to the world's food security. Nearly 3 and a half months into the war, the contours of these consequences are clear: Agricultural exports from Ukraine have slowed down, future harvests are in question, global prices of agriculture commodities have spiked, and most exposed are the countries that rely on agricultural exports from Ukraine and Russia to feed their citizens or fertilizer from Russia.

Two aspects involved in global agriculture: First, the war is disrupting markets for final agricultural products and agricultural inputs at the same time. Agricultural products like wheat and oilseeds are ingredients for staple foods like bread and cooking oil, which are primary sources of calories for millions of people around the world. The implication of fertilizer in today's market disruptions limits options for responses by wealthy countries as well as low- and middle-income countries. As sanctions limit fertilizer exports from Russia and Belarus and fertilizer prices rise, wealthy countries that might have, for example, increased wheat production to fill projected shortfalls on the global market and capitalize on high global prices, are instead investing in less fertilizer-intensive crops.

The U.S. Department of Agriculture's (USDA) National Agriculture Statistics Service reports that High prices of fertilizer have also limited options for low- and middle-income countries that otherwise would have opted to buffer global price shocks by boosting their own agricultural

productivity. Exposed to high prices, some farmers might move forward with planting plans, passing high production costs to consumers; others might reduce their use of fertilizers, reducing output. High prices of energy push food prices even higher, as natural gas is needed to produce nitrogenous fertilizers and fuel is needed for on-farm productivity and food transportation.

Second, these agriculture-market disruptions are wholly avoidable, due to a war of aggression and intentional attacks on agriculture infrastructure. By targeting all aspects of Ukraine's agriculture—fields, farm equipment, warehouses, markets, roads, bridges, and ports—Russia intends to cripple Ukraine's agricultural economy, thereby cutting off a major source of Ukraine's income. In 2020, agriculture contributed over 9 percent of Ukraine's GDP, according to the International Trade Administration. The high prices of fertilizer and fuel further limit farmers' productivity and precocity of labor in wartime could further limit output.

Food price increases due to the Russia-Ukraine war are jeopardizing food security around the world. According to the FAO, 26 countries rely on Ukraine and Russia for at least 50 percent of their wheat imports. These include countries in Africa's Sahel region, where 6 million children are malnourished and 16 million people in urban areas are at risk of food insecurity, according to the UN World Food Program (WFP). The WFP also recently noted the vulnerability of countries in East Africa, which also rely on imports from Ukraine and Russia, and are experiencing the effects of conflict and severe drought. UNICEF emphasizes the vulnerability of children in the Middle East and North Africa, where countries import more than 90 percent of food they consume, and the majority of children do not have access to adequate nutrition.

Today's food price increases are also affecting politics around the world. In Pakistan, food prices had been rising for months prior to Russia's invasion of Ukraine, and even higher food prices. Peru, is struggling to quell unrest in response to record-high food and fuel prices; several died in protests last week. Egypt, the world's largest importer of wheat, procures over 80 percent of its wheat from Ukraine and Russia, and as its own supplies dwindle, its government is seeking other sources for its supplies. The price of unsubsidized bread jumped 25 percent in some bakeries just weeks into the Russia-Ukraine war. High food and fuel prices are a flashpoint in the presidential election in France; Germany, Italy, and Spain have offered energy allowances, price cuts, and tax cuts to quell the impact of high energy prices.

The Ukraine-Russia conflict will intensify nitrogen fertilizer price and supply concerns. North American fertilizer companies have faced scrutiny as a culprit in rising nitrogen fertilizer prices. While it is true that North American fertilizer companies likely will have a good income year in 2022, a range of global market factors are contributing to higher fertilizer prices.

**Figure 1. Anhydrous Ammonia Prices per Ton in Illinois From 2008 to 2021**



## **1.2. Pandemic (Covid-19) impacts on Agricultural Economy:**

As a preventive measure of Covid 19 pandemic across the globe lockdowns of varying degrees were enforced globally to curtail its spread. Such restrictions and fear of the virus precipitated into economic spheres, manifesting in a global economic slowdown, compared by some to the magnitude of the ‘Great Depression’ (Elleby *et al*, 2020). As a result, the contraction of global GDP in 2020 was in the range of 3% to 7.5% (IMF. World Economic Outlook, 2020, Ramakumar, 2020). Like other sectors of the global economy, agriculture experienced both demand- and supply side shocks (Anthem, 2022). The pandemic had serious implications for food security in developing economies, where agriculture is the major source of livelihood for the rural poor (Nicola, 2020). The disruptions in the food supply chains have threatened food security in the short-run, and smallholder farmers and other vulnerable sections are likely to suffer more. Although the situation may improve for those countries that are self-sufficient in food production and show less dependence on international food trade, the other countries depending on food imports may suffer (FAO, 2021) The disruptions in supply chains caused farm-level crop losses and distressed sales with considerable income losses to farmers (Mitaritonna, 2020). The restriction in movement forced by the lockdowns impacted the movement of seasonal migrant labour, causing severe labour shortages, a rise in wages and increase in the cost of food production. The loss of remittances during the COVID-19 pandemic also caused a decline in farm investments and led to the fall of farm incomes (Boughton *et al.*, 2020). Rising costs of production and supply chain disruptions caused an increase in input cost of almost all agricultural inputs seeds, fertilizers, and agro chemicals.

Before the coronavirus disease (COVID-19) outbreak, Pakistan’s gross domestic product (GDP) growth for 2019–2020 was projected at 3.2%, with agriculture contributing 2.9% (EAW 2020). However, the COVID-19 outbreak affected various channels of Pakistan’s economy, slowing it down; consequently, the provisional growth of GDP for 2019–2020 has been estimated at –0.4%, with agriculture as the only sector showing positive growth at 2.7% (Pakistan Bureau of Statistics 2020). Herein, we trace the evolution of fertilizer prices increases, making the case that

increases up until recent months resulted from responses to the Covid pandemic, general price inflation, and policies in Europe to move away from fossil fuels.

### **1.3 Climate Change impacts on Agricultural Economy:**

Climate change is a global problem. Before the end of the 20th century climate change had become a serious threat to worldwide human and animal life. In response to emerging concerns regarding climate change, the Intergovernmental Panel for Climate Change (IPCC) was inaugurated in 1988 to distinguish the factors that cause long term or short-term changes in the climate system and aimed to make possible the provision of most up-to-date, scientific, technical, socio-economic, comprehensive information about climate change (Parry et al., 2001).

The impacts of climate change on agriculture and human well-being include: 1) the biological effects on crop yields; 2) the resulting impacts on outcomes including prices, production, and consumption; and 3) the impacts on per capita calorie consumption and child malnutrition. The biophysical effects of climate change on agriculture induce changes in production and prices, which play out through the economic system as farmers and other market participants adjust autonomously, altering crop mix, input use, production, food demand, food consumption, and trade.

Pakistan is the 5<sup>th</sup> most vulnerable country to climate change as reported by Inter Governmental Panel on Climate Change (IPCC) and German Watch. Agricultural sector in Pakistan is the most effected sector by climate change. Because of different aspects of climate change like heat waves, precipitation, humidity resulting accelerated weeds, pests and diseases. Farmer's input costs rose to protect his crop. More irrigation required to prevent the crops from heat stress ultimately effects farms input costs. Climate Smart Agricultural seeds are more expensive and now beyond the reach of the poor farmer.

### **1.4 Electricity, Natural Gas and Diesel/Petrol Prices impacts on Agricultural Economy**

Agricultural production is sensitive to changes in energy prices, either through energy consumed directly or through energy-related inputs such as fertilizer. Higher energy-related production costs would generally lower agricultural output, raise prices of agricultural products, and reduce farm income, regardless of the reason for the energy price increase. Energy-related expenses also affect livestock producers. Although their direct energy costs are lower than for crop production, livestock producers would face higher feed costs under both the lower (0.2 to 0.6 percent higher annually, 2012-18 average) and higher (0.6-1.3 percent higher) energy price change scenarios. Poultry production would be less affected than beef and pork, since poultry is the most efficient feed-to-meat converter of the animal types.

In Pakistan the rise in the prices of electricity, Natural Gas and Petrol has direct affected the cost of crops production. The rise in the prices of natural gas has increased the fertilizer prices up to 25% in a single calendar year. "Farmers have slammed the increase in sales tax on fertilizer from 2% to 10% in the Finance Bill 2022," "Fertilizer manufacturers will pass on the high cost to the



farming community and from July 1 fertilizer may become more expensive, as it is already beyond the purchasing power of small and medium-sized farmers.”

### **1.5 Fertilizer Mafia/cabal**

In Pakistan fertilizer mafia over the past two years has earned billions of rupees by selling urea and DAP fertilizers at escalated rates. During 2021 majority of districts in Punjab and Sindh province farmers purchased DAP fertilizer as high as Rs10, 873 per bag and urea at Rs4,000 per bag, adding direct impacts on agricultural input costs. Fertilizer mafia in Pakistan creates shortage of urea fertilizer at the time of sowing and critical stages of crops are major economic threat for the farmers across Pakistan. While farmers face extreme difficulties in buying the fertilizers at official rates. While the price fixed by the government is Rs. 1,870, a sack of urea fertilizer is reportedly being sold in the black market for Rs. 3,000.

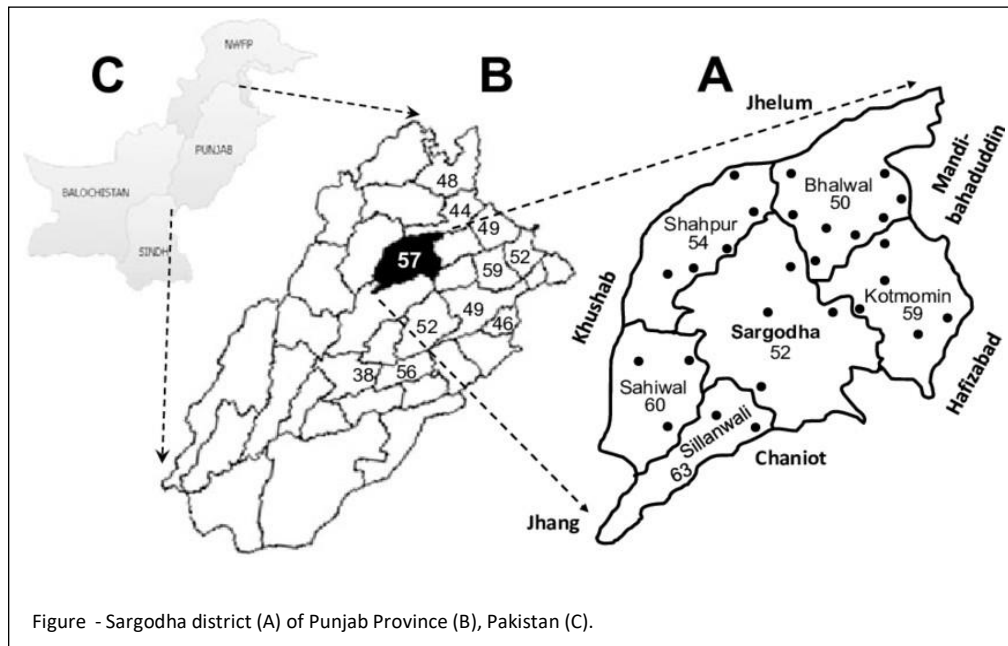
#### **Need for the Study:**

Review of literature shows that an over whelming majority of farmer’s are not practicing recommended practices for their crops and orchards there is a gap between farmers practices and recommendation practices different aspects were studied and researched but up till now limited research has been conducted to analyze the hike in the prices of Agricultural Inputs and its impacts on farmers buying capacity of farm inputs. Therefore the research was conducted to raising prices of agricultural commodities on socio economic status of farming community.

## 2. RESEARCH METHODOLOGY:

### 2.1. Area of the Study:

The research was conducted in Sargodha District. One of the main reason to select the district is Sargodha is the extensive agriculture Zone of Pakistan. The crops Grown in Sargodha are Wheat, Rice, Sugarcane, Maize, Fodders, and Sesame. Sargodha is also known as the fruit basket of Pakistan including Citrus, Guava, and Grapes orchards are widely spreaded in the district. A variety of agricultural growers will add more value to the research study.



### 2.2 Research Instrument:

Research instrument in the form of structured interview schedule was prepared for the purpose of data. The questionnaire was designed in the English language, but interviews were conducted in local languages (Urdu, Punjabi), given the farmers' low literacy rate. Questions were asked directly from the respondents to ensure the collection of accurate and relevant data. Focus Group Discussions were also made with the respondents on different aspects of this research study/topic.

### 2.3. Data Collection:

A sample of about 50 farmers will be selected for data collection via using **simple random sampling technique**, in coordination with ZTBL branches/Zone. Along with **structural interview schedule Focus Group Discussions (FGD's)** on the topic will also be made and individual case studies regarding the topic were also being incorporated in this study that strengthens the research work. Rate list of various fertilizers and pesticides will also be considered. **Data were also collected from fruit nurseries, seed, pesticides and fertilizer shops regarding changes in rates of the commodities.** This Research study was based on the changes based on the data from Jan-2020 till mid July 2022

## 2.4. Data Analysis:

The data were analyzed using the MS Excel/ Statistical Package for Social Sciences (SPSS) software in which frequency distribution and graphs were made. On the basis of analyzed data conclusions will be drawn and recommendations will be made.

## 2.5. Expected outcomes of the Study:

It was hoped that the study will help the bank in achieving the desired objectives in a better way. Credit Division will be taken on loop to evaluate the results of the study with the credit limits/ cash values and including the research results in credit policy. Agriculture Technology Department will also be benefited with the research and will conduct cost effective agricultural technology dissemination to the farming community in order to overcome hike in the prices of agricultural commodities. Planning and research Department will also share the research study with policy makers and all other stake holders to revise the policy matters in this regard and to take necessary measures to insure the food security situation in the country.



### 3. RESULTS & DISCUSSIONS

#### Demographic & Socio-Economic data:

**Table1: Distribution of respondents regarding their Gender:**

Gender	Frequency	Percentage
Male	50	100
Female	0	0
<b>Total</b>	<b>50</b>	<b>100</b>

The **Table 1** shows that the data is collected from both male and female respondents. All of the respondents (100 %) were male farmers.

**Table 2: Distribution of Respondents regarding their age:**

Age (Years)	Frequency	Percentage
Young (up to 35)	14	28
Medium (>35-50)	19	38
Old (>50)	17	34
<b>Total</b>	<b>50</b>	<b>100</b>

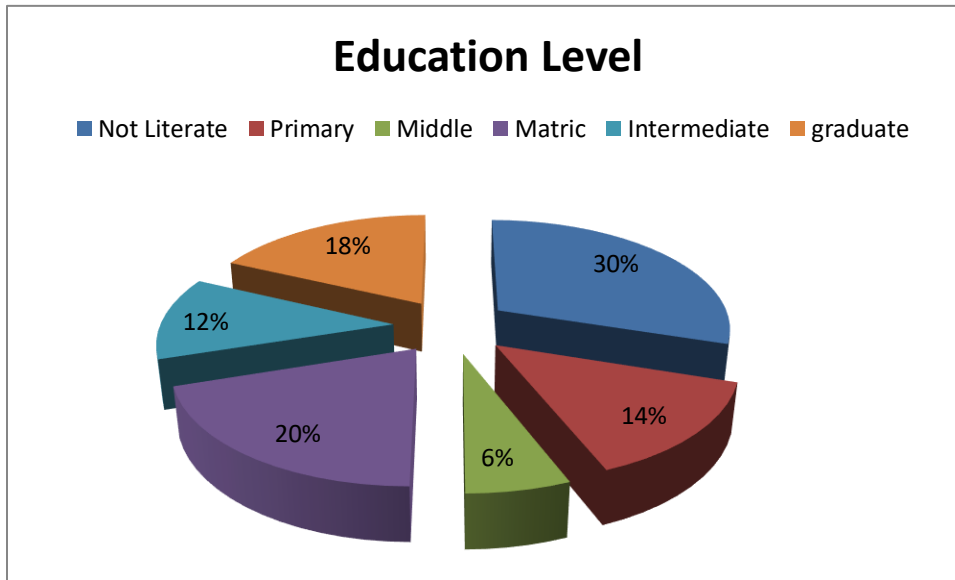
**Table 2:** represents that (38%) of the respondents were belonged to middle age (35-50 years), (34%) of the respondents fall under old age (>50 years) category and (28%) of the respondents were young (up to 35 years).

**Table 3: Distribution of respondents regarding their land holding:**

Land Holding (acres)	Frequency	Percentage
Small (up to 12.5)	23	46
Medium (>12.5 to 25)	19	38
Large (>25)	8	16
<b>Total</b>	<b>50</b>	<b>100</b>

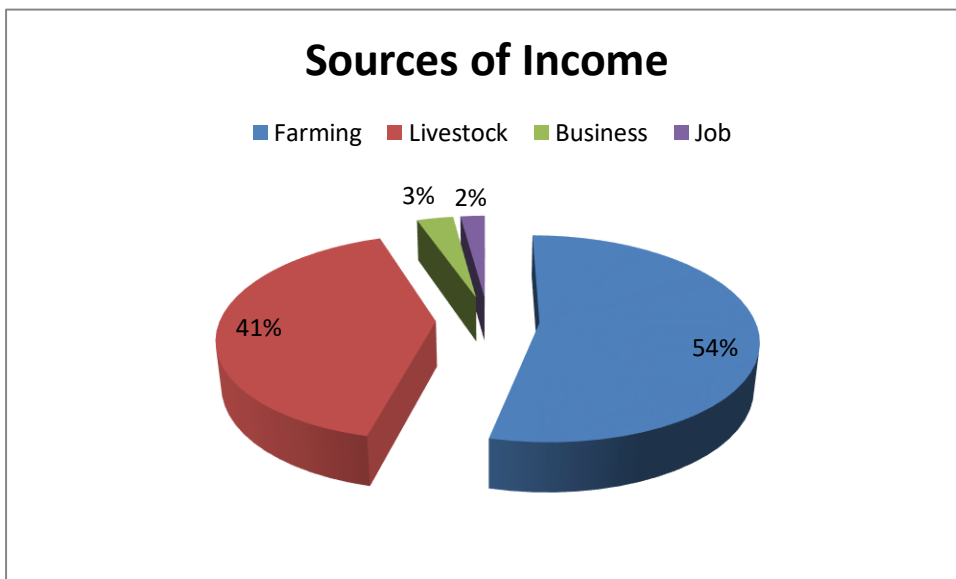
The **Table 3:** mentions that nearly half (46%) of the respondents i.e. had small land holding (up to 12.5 acres), while (38%) of the respondents having medium land holding (>12.6 to 25 acres) and (16 %) of the respondents had large land holding (i.e. more than 25 acres).

**Fig. 1. Distribution of respondents based on their education level:**



The **Fig 1:** indicated that most (30%) of the respondents were not literate, (20%) of the respondents were literate up to Matric level, (18%) of the respondents were graduate, (14%) had five years of education, (12%) had education up to intermediate and only (6%) had eight years of education.

**Fig.2. Distribution of respondents according to sources of income:**



The **Fig.2.** Shows that all respondents were involved in farming. More than half (54%) of farmers only depend on farming (crops cultivation) along with farming (41%) are also having livestock as an income source and along with farming (3%) doing other business and (2%) are doing job to support their farming cycle.

**Table 4: Distribution of Respondents regarding their available sources of irrigation:**

Sources of Irrigation	Frequency	Percentage
Canal Water	2	4
Tube well	1	2
waste water	0	0
Canal + Tube well	47	94
Canal + waste water	0	0
<b>Total</b>	<b>50</b>	<b>100</b>

The **Table 4** indicates that an over whelming majority of farmers/respondents (94%) have Canal + Tube well as a source of irrigation. (4%) of the respondents has canal water as a source of irrigation and (2%) of the farmers have tube well as a source of irrigation.

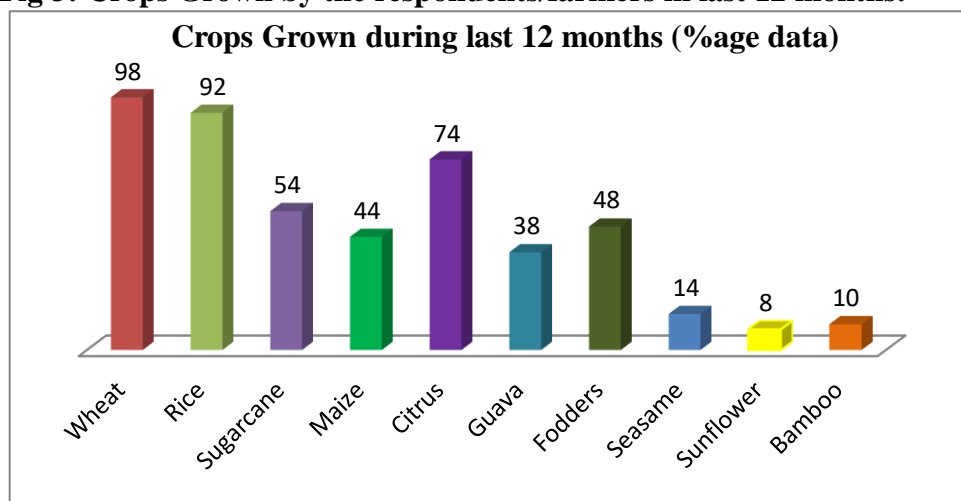
**Table 5: Distribution of Respondents regarding %age of water sources for (Canal+Tube well):**

%age of water sources (canal + Tube well)	Frequency	Percentage
20-80%	3	6.38
25-75%	7	14.89
30-70%	22	46.81
40-60%	15	31.91
<b>Total</b>	<b>47</b>	<b>100</b>

The **Table 5** analyzes that (46.81%) farmers use 30% of canal water and 70% of tube well water for irrigation purpose. (31.91%) of farmers us 40-60% of canal + tube well water for irrigation. (14.89%) of respondents has availability of 25-75% of canal + tube well for irrigation and (6.38%) of respondents has availability of 20-80% of canal + tube well for irrigation.

### Technical Data Analysis

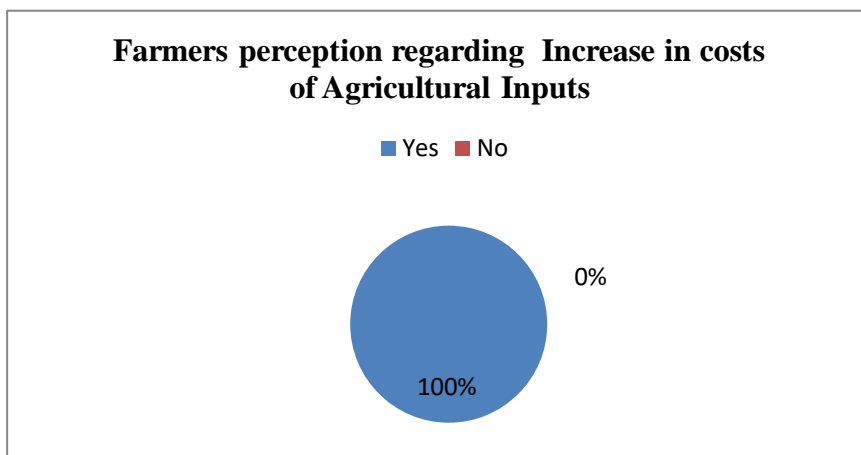
**Fig 3: Crops Grown by the respondents/farmers in last 12 months:**



\*percentage and frequencies are not same because of multiple responses

**Fig 3:** Analysis indicates that an overwhelming majority (98%) of the respondents cultivated wheat crop in last year, 92 % of the respondents cultivated rice crop in last 12 months, 74% of farmers were involved in citrus orchards, 54% of the respondents cultivated sugarcane crop, 48% of the respondents cultivated different fodders for animals, 44% of the respondents Maize crop, 38% of the respondents were involved in guava orchard management, 14% cultivated Sesame crop, 10% of respondents grown bamboo trees and 8% cultivated sunflower.

**Fig.4. Farmers perception regarding increase in the cost of Agricultural Inputs**



**Fig.4** shows that all the respondents (100%) agreed increase in prices of the agricultural inputs.

**Table.6. Distribution of respondents regarding increase in the input cost agriculture commodities most affected the crop cycle:**

Inflation of which Agricultural Input affected your Crop Cycle	Frequency	Percentage
Electricity	26	52
Petrol/Diesel	50	100
Seeds	27	54
Fertilizers	49	98
weeds	15	30
Herbicides	17	34
Insecticides	18	36
Pesticides	19	38
Farm Machinery	21	42
Farm Labour	24	48
Agriculture Marketing and Transport	28	56

\*percentage and frequencies are not same because of multiple responses

The **Table 6** shows that (100%) of the farmers/respondents believe that hike in Petrol/Diesel prices effected their crop cycle. An over whelming majority of the respondents (98%) said that increase in the prices of fertilizers effected their crop cycles. (56%) of the respondents said that increase in agricultural marketing/transport costs effected their crop cycle. (54%) of the respondents reported seed prices inflation disturbed their crop cycle. (52%) responded increase in the electricity costs effected their crop cycle. Nearly less than half 48% of the respondents said that farm labor costs effected their crop cycle, (42%) claims increase in cost of farm machinery effected their crop cycle, (38%, 36% and 30%) of the respondents reported increase in prices of Herbicides, insecticide and pesticides affected their crop cycle.

**Table 7: An estimated increase in prices of agricultural inputs:**

	25%		25-50%		50-75%		75-100%		Total	
	F	%	F	%	F	%	F	%	F	%
<b>%age of prices increases in agricultural commodities</b>										
<b>Electricity</b>	42	84	5	10	3	6	0	0	50	100
<b>Petrol/Diesel</b>	0	0	0	0	2	4	48	96	50	100
<b>Seeds</b>	35	70	10	20	4	8	1	2	50	100
<b>Fertilizers</b>	10	20	40	80	0	0	0	0	50	100
<b>Herbicides</b>	50	100	0	0	0	0	0	0	50	100
<b>Insecticides</b>	50	100	0	0	0	0	0	0	50	100
<b>Pesticides</b>	48	96	2	4	0	0	0	0	50	100
<b>Farm Machinery</b>	5	10	44	88	1	2	0	0	50	100
<b>Farm Labor</b>	47	94	3	6	0	0	0	0	50	100
<b>Agriculture Marketing and Transport</b>	20	40	28	56	2	4	0	0	50	100

**Table 7.** Represents that (100%) of the farmer’s responded 25% increase in the prices of herbicides and insecticides. (96%) of the farmers reported 75-100% increase in the prices of diesel/petrol, (96%) of the respondents described 25% increase in the prices of pesticides. (94%) of the respondents reported 25% increase in the rates of farm labor. 88% of the respondents reported 25-50% increase in the prices of farm machinery. (84%) of the respondents reported 25% increase in the cost of electricity.(80%) of the respondents reported 25-50% increase in the prices of fertilizers. (70%) of the respondents reported 25% increased in the prices of seeds. (48%) of respondents reported 50-75% in the prices of petrol/diesel. (20%) of the respondents indicated 25-50% increase in seed prices. (10%) of the respondents said 25-50% increase in the prices of electricity.



**Table 8: Farmers Access/availability of agricultural Inputs after inflation:**

	Not Available		Limited Available		Available with difficulty		Easily Available		Total	
	F	%	F	%	F	%	F	%	F	%
<b>Farmers access/availability of Inputs in the market</b>										
<b>Electricity</b>	36	72	4	8	10	20	0	0	<b>50</b>	<b>100</b>
<b>Petrol/Diesel</b>	0	0	13	26	5	10	32	64	<b>50</b>	<b>100</b>
<b>Seeds</b>	0	0	8	16	33	66	9	18	<b>50</b>	<b>100</b>
<b>Fertilizers</b>	9	18	4	8	34	68	3	6	<b>50</b>	<b>100</b>
<b>Herbicides</b>	0	0	7	14	0	0	43	86	<b>50</b>	<b>100</b>
<b>Insecticides</b>	0	0	6	12	2	4	42	84	<b>50</b>	<b>100</b>
<b>Pesticides</b>	0	0	9	18	3	6	38	76	<b>50</b>	<b>100</b>
<b>Farm Machinery</b>	0	0	3	6	5	10	42	84	<b>50</b>	<b>100</b>
<b>Farm Labor</b>	0	0	2	4	7	14	41	82	<b>50</b>	<b>100</b>
<b>Agriculture Marketing &amp; Transport</b>	0	0	1	2	2	4	47	94	<b>50</b>	<b>100</b>

**Table 8:** shows the results while asked the farmers after inflation do you have access to the agricultural inputs and the responses showed that due to electricity/power crisis in the country those farmers owning electrical tube wells (72%) of the respondents don't have access to electricity and their crops are facing severe water scarcity. A majority of farmers have easy access to transport for Agricultural marketing, herbicides, insecticides, pesticides, farm machinery and farm labor i.e. (94%, 86%, 84%, 84%, 82% and 76%) respectively. (64%) of the farmers have easy access to diesel/petrol to run their tube wells, while 26% of the respondents have limited access to diesel/petrol, (68%) of the farmers reported that they fertilizer availability is damn difficult for them. (18%) of the farmers don't have access to fertilizers. (66%) of the respondents don't have access to quality seeds. (18%) of the farmers have limited access to pesticides, (16%) of the farmers show very limited access to the quality seeds. (14%) of the farmers have limited access to herbicides, (12%) of the respondents have limited access to Insecticides. (10%) of the respondents reported difficulty in access to farm machinery, (6%) of the farmers have limited access to farm machinery, (4%) of the farmers have limited access to farm labor, while (2%) of the respondents have limited access to transport for agricultural marketing.

**Table 9: Distribution of respondents regarding the main effects of raising prices on their livelihood/socio economics:**

Aspects	Very Low		Low		Medium		High		Very High		Total	
	F	%	F	%	F	%	F	%	F	%	F	%
<b>Crop production</b>	0	0	0	0	0	0	29	58	21	42	<b>50</b>	<b>100</b>
<b>Crop quality</b>	0	0	0	0	11	22	37	74	2	4	<b>50</b>	<b>100</b>
<b>Effect on living standard</b>	0	0	0	0	0	0	4	8	46	92	<b>50</b>	<b>100</b>
<b>Effect on livestock production</b>	0	0	0	0	33	66	14	28	3	6	<b>50</b>	<b>100</b>
<b>High input cost</b>	0	0	0	0	1	2	3	6	46	92	<b>50</b>	<b>100</b>
<b>Low profit</b>	0	0	1	2	23	46	16	32	10	20	<b>50</b>	<b>100</b>
<b>1. Very low 2. Low 3. Medium 4. High 5. Very high</b>												

**Table 9:** shows that an over whelming majority (92%) of the farmers living standard was very highly effected and high input costs of agricultural commodities. Crop quality decline is high as reported by 74% of the respondents. 66% of the respondents reported medium effect of their livestock production. 58% of the respondents reported high loss in crop production/yield. 42% of the respondents reported very high loss in crop productivity. 32% of farmers reported highly effected because of low profitability of their produce. 28% of farmers reported high loss in livestock production. Crop quality decline is medium as reported by 22% of the respondents. 4% reported very high loss in their produce quality.

**Table 10. Distribution of respondents regarding difference in use of chemical fertilizers before and after inflation:**

	This data contains average mean values					
	Data Before Inflation			Data After Inflation		
	Fertilizers(No of Bags/acre)			Fertilizers(No of Bags/acre)		
	Urea	DAP/ Nitrophos	Potash	Urea	DAP/ Nitrophos	Potash
Wheat	3	2	1	2	1	0
Rice	2.5	2	1.5	1	1	0
Maize	1.5	3	2	1	2	0
Sugarcane	5	3	2	2	1.5	1
Citrus	0.5			0.25		

Crop/Fruits	Urea (BI)	Urea (AI)	% Change	DAP/NP (BI)	DAP/NP (AI)	% Change	Potash (BI)	Potash (AI)	% change
Wheat	3	2	33%	2	1	50%	1	0	100%
Rice	2.5	1	60%	2	1	50%	1.5	0	100%
Maize	1.5	1	33%	3	2	33%	2	0	100%
Sugarcane	5	2	60%	3	1.5	50%	2	1	50%
Citrus	0.5	0.25	50%						

**Table.10.** Indicates that farmers committed to use less fertilizers because of inflation and availability of fertilizers. 100% of farmers stopped using Potash fertilizers in Wheat, Rice and Maize crop. Respondents reported 60% less use of urea fertilizer in sugarcane and Rice Crop after inflation. Farmers using 50% less DAP/Nitrophos in Wheat Rice and sugarcane crop. Farmers using 50% less potash fertilizer in Sugarcane. Farmers are using 33% less urea fertilizer in wheat and Maize crops. Farmers using 33% less DAP/Nitrophos in sugarcane crop.

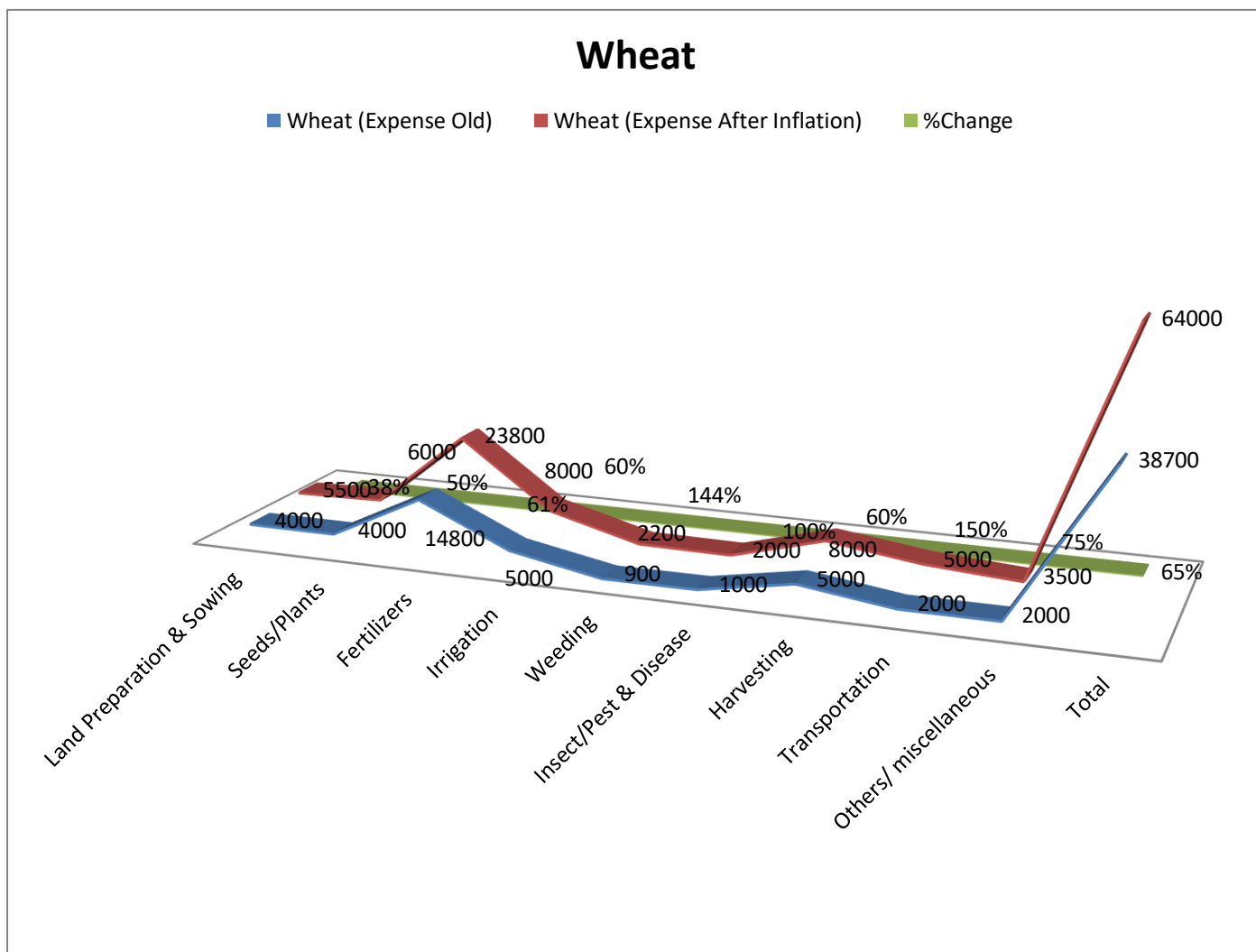
**Table: 11: Analysis of Cost of Production:**

Crops	Land Preparation & Sowing	Seeds/ Plants	Fertilizers	Irrigation	Weeding	Insect/ Pest & Disease	Harvesting	Transportation	Others/ miscellaneous	Total
<b>Wheat (Expense BI)</b>	4000	4000	14800	5000	900	1000	5000	2000	2000	<b>38700</b>
<b>Wheat (Expense AI)</b>	5500	6000	23800	8000	2200	2000	8000	5000	3500	<b>64000</b>
<b>% Change</b>	<b>38%</b>	<b>50%</b>	<b>61%</b>	<b>60%</b>	<b>144%</b>	<b>100%</b>	<b>60%</b>	<b>150%</b>	<b>75%</b>	<b>65%</b>
<b>Rice (Expense BI)</b>	7000	7000	20800	10000	1500	2000	9000	3000	2000	<b>62300</b>
<b>Rice (Expense AI)</b>	9000	11000	24800	15000	2500	3500	11000	6000	3000	<b>85800</b>
<b>% Change</b>	<b>29%</b>	<b>57%</b>	<b>19%</b>	<b>50%</b>	<b>67%</b>	<b>75%</b>	<b>22%</b>	<b>100%</b>	<b>50%</b>	<b>38%</b>
<b>Sugarcane(Expense BI)</b>	8000	20000	20300	7000	1800	3000	8000	7000	3500	<b>78600</b>
<b>Sugarcane (Expense AI)</b>	9000	24000	35300	10000	2500	5500	12000	10000	4000	<b>112300</b>
<b>% Change</b>	<b>13%</b>	<b>20%</b>	<b>74%</b>	<b>43%</b>	<b>39%</b>	<b>83%</b>	<b>50%</b>	<b>43%</b>	<b>14%</b>	<b>43%</b>
<b>Citrus (Expense BI)</b>	9000	30600	16600	5000	1000	2000	10000	3000	4000	<b>81200</b>
<b>Citrus (Expense AI)</b>	12500	40250	29600	8000	2200	3500	12000	6000	6000	<b>120050</b>
<b>% Change</b>	<b>39%</b>	<b>32%</b>	<b>78%</b>	<b>60%</b>	<b>120%</b>	<b>75%</b>	<b>20%</b>	<b>100%</b>	<b>50%</b>	<b>48%</b>
<b>Maize (Expense BI)</b>	5600	5000	10600	4000	1200	2000	5000	2000	2000	<b>37400</b>
<b>Maize (Expense AI)</b>	6000	10000	19600	6000	2500	2500	6000	4000	3000	<b>59600</b>
<b>% Change</b>	<b>7%</b>	<b>100%</b>	<b>85%</b>	<b>50%</b>	<b>108%</b>	<b>25%</b>	<b>20%</b>	<b>100%</b>	<b>50%</b>	<b>59%</b>
<b>Guava (Expense BI)</b>	9000	11000	14600	5000	1000	3000	9000	4000	5000	<b>61600</b>
<b>Guava (Expense AI)</b>	14000	12000	31600	6000	1600	3500	10000	6000	6500	<b>91200</b>
<b>% Change</b>	<b>56%</b>	<b>9%</b>	<b>116%</b>	<b>20%</b>	<b>60%</b>	<b>17%</b>	<b>11%</b>	<b>50%</b>	<b>30%</b>	<b>48%</b>

**Expense BI= Before Inflation      Expense AI= After Inflation**

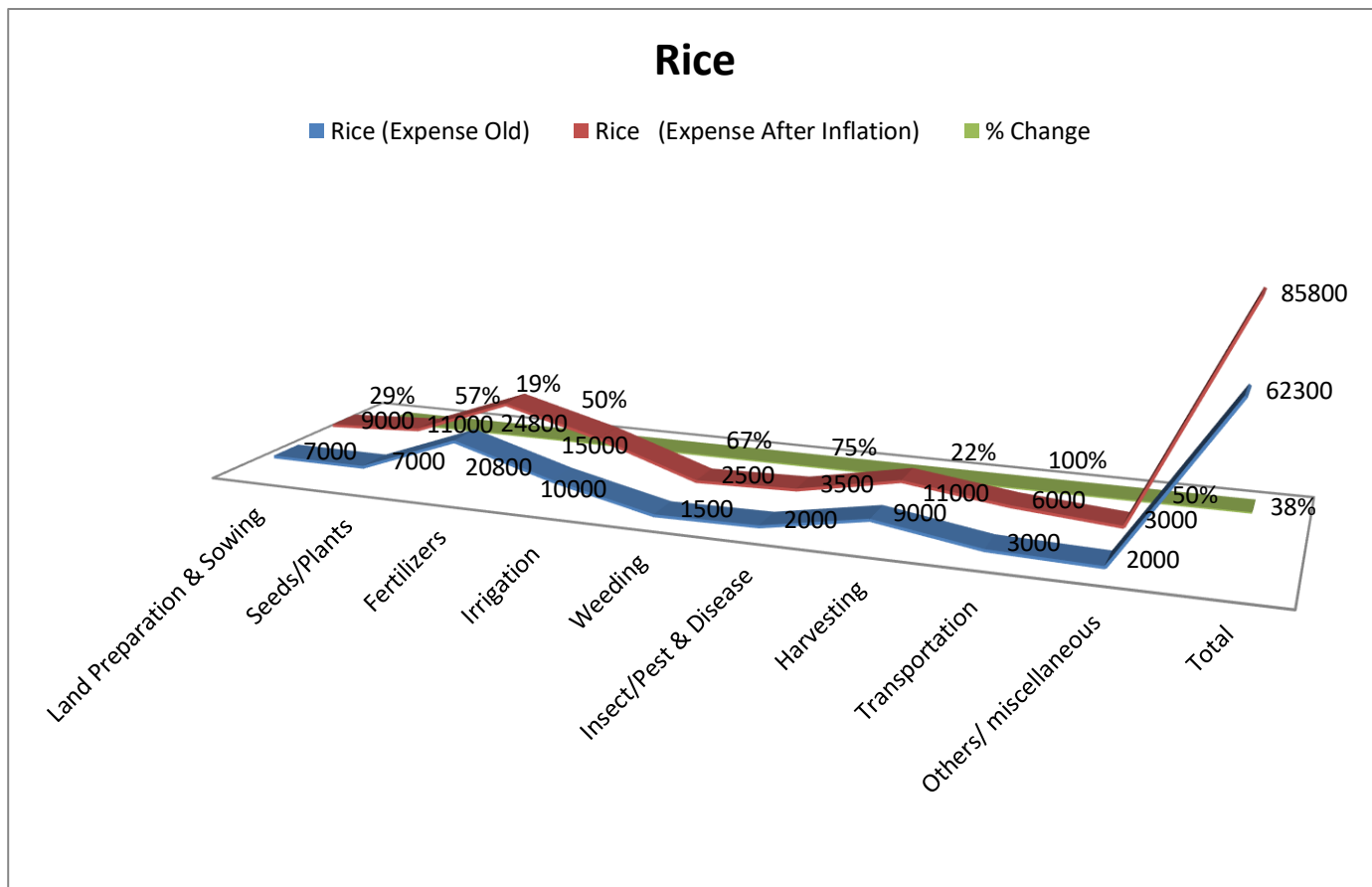
*\*Data analysis in the table contains mean values*

**Fig 5. Difference in cost of production of Wheat Crop per acre (2021-2022):**



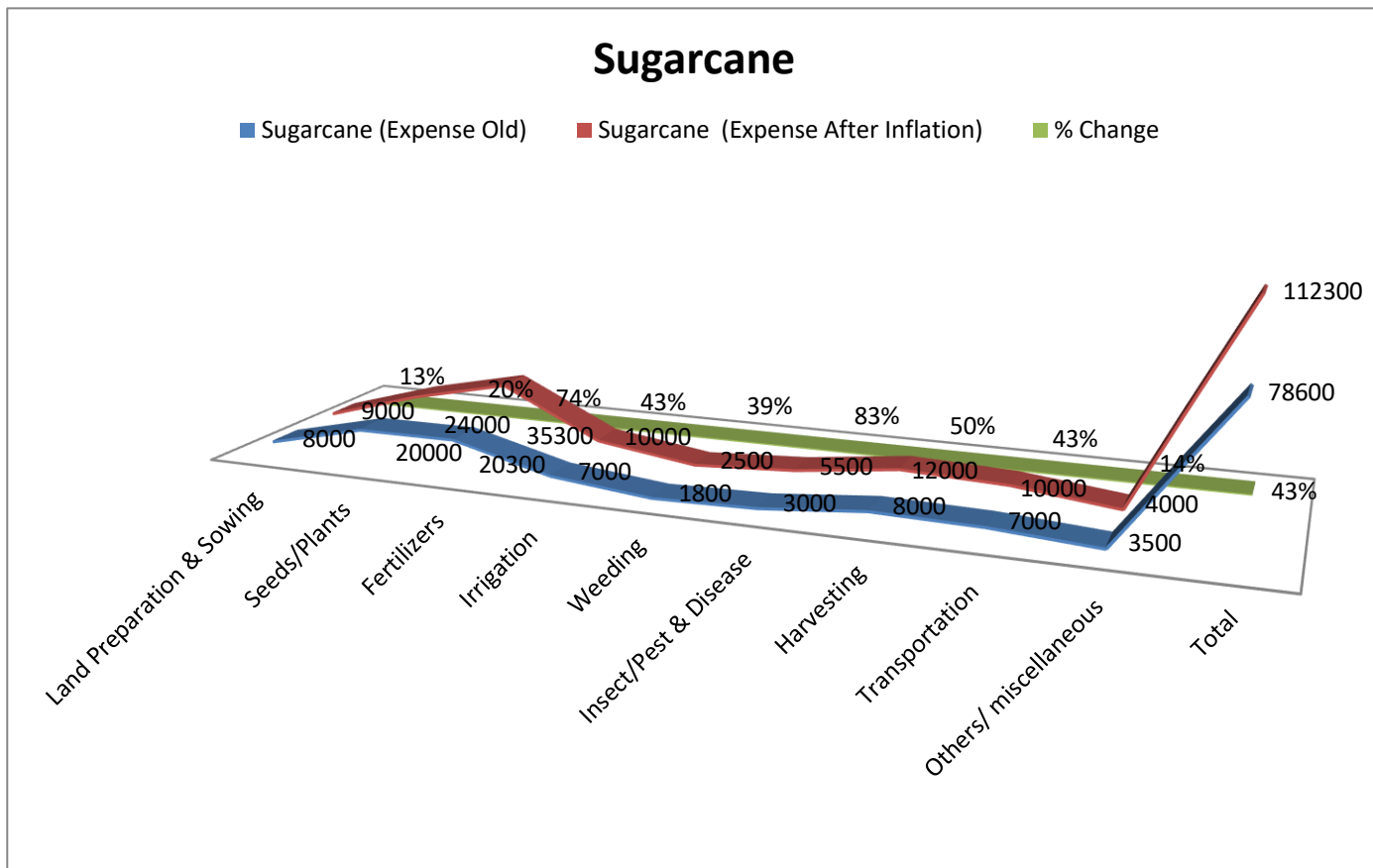
**Fig.5.** indicates that cost of production of wheat crop has been raised up to 65% within a single calendar year 202-2022 i.e. in 2021 per acre expenses of wheat crop was 38700 Rs. (PKR) and in 2022 because of inflation/ increase in prices of agriculture commodities. Fertilizers were sold in black at very expensive rates in the market, prices of weedicides, insecticides and transportation/agricultural marketing costs has been increased up to 144%, 100% and 150% respectively. Now in 2022 the total cost of production of wheat crop per acre is 64000 Rs. (PKR).

**Fig 6. Difference in cost of production of Rice crop per acre (2020-2022):**



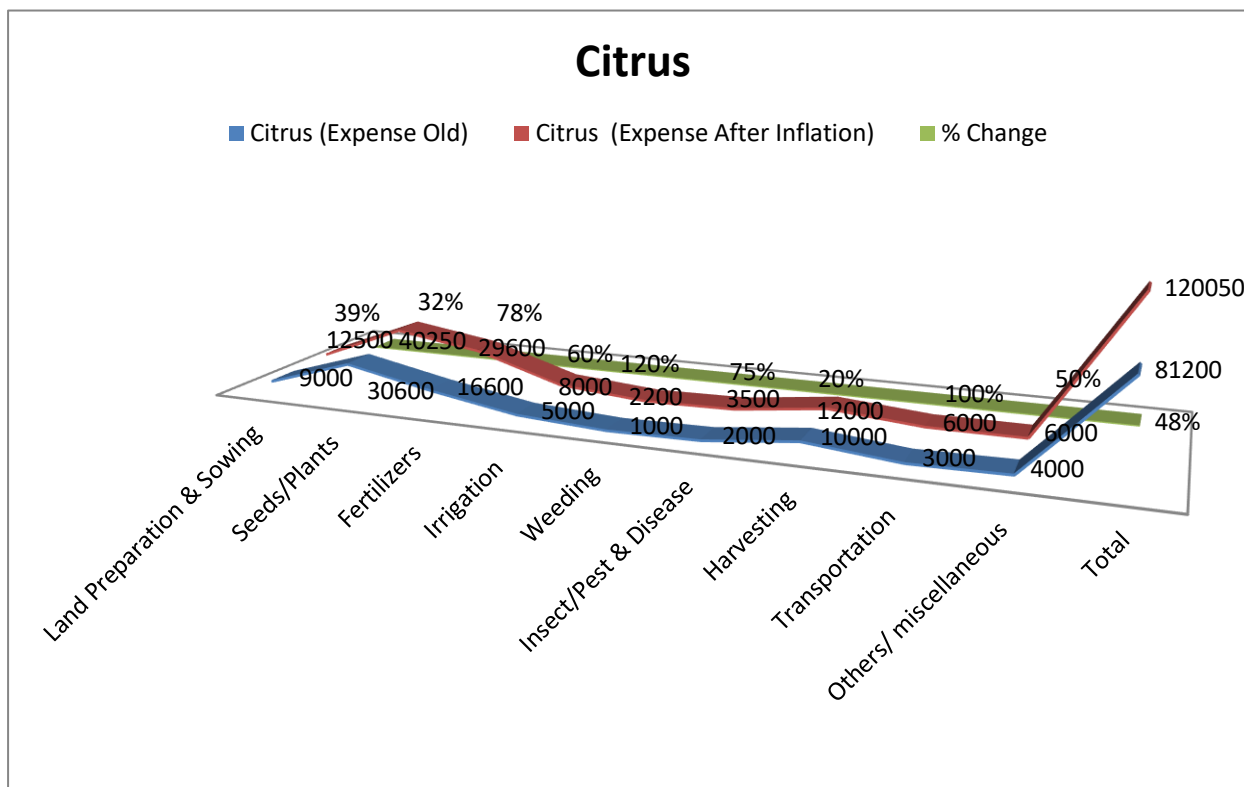
**Fig.6.** indicates that cost of production of Rice crop has been raised up to 38% within a 2020-2022 i.e. in 2020 per acre expenses of Rice crop was 62300 Rs. (PKR) and in 2022 because of inflation/ increase in prices of agriculture commodities. Fertilizers were sold in black at very expensive rates in the market, Agricultural Marketing and transportation cost increased by 100%. Now the total cost of production of Rice crop per acre is 85800 Rs. (PKR).

**Fig 7. Difference in cost of production of Sugarcane crop per acre (2021-2022):**



**Fig.7.** indicates that cost of production of Sugarcane crop has been raised up to 43% within a single calendar 2020-2022 i.e. in 2020 per acre expenses of sugarcane crop was 78600 Rs. (PKR) and now because of inflation/ increase in prices of agriculture commodities. 83% increase in the cost of insects and pests management. Farmers bought the fertilizers in black and paid 74% more cost. Respondents reported 50% increase in the cost of Harvesting. 43% increase in the cost of agricultural marketing/transportation. Now in 2022 the total cost of production of Sugarcane crop per acre is 112300 Rs. (PKR).

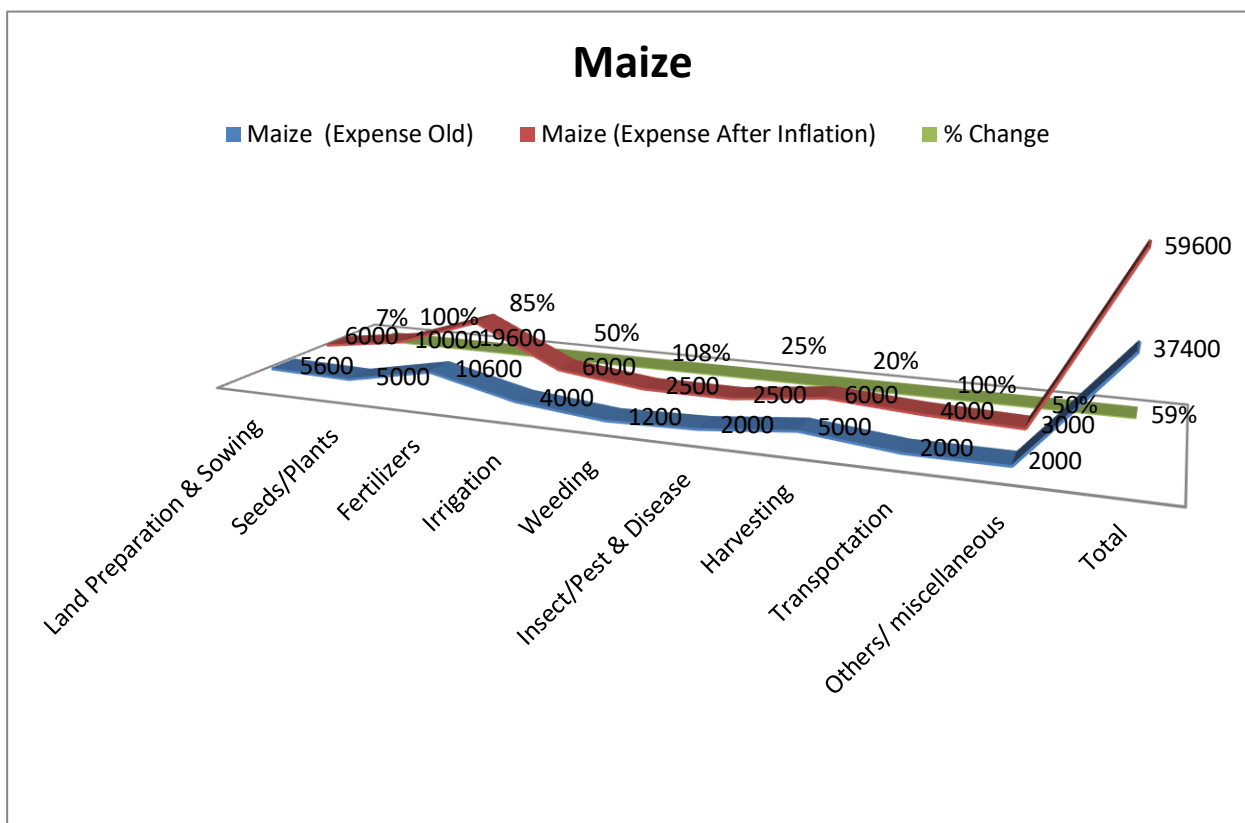
**Fig 8. Difference in cost of production of Citrus orchard per acre (2020-2022):**



**Fig.8.** indicates that cost of production of Citrus orchards has been raised up to 48% during 2020-2022 i.e. in 2020 per acre expenses of citrus orchard was 81200 Rs. (PKR) and now in 2021-22 because of inflation/ increase in prices of agriculture commodities. 120% increase in the cost of weedicides 100% increase in transportation cost, 78% increase in the amount of fertilizers. 75% increase in the harvesting cost has been reported by the respondents. Now the total cost of production of Citrus Orchard per acre is 120050 Rs. (PKR).

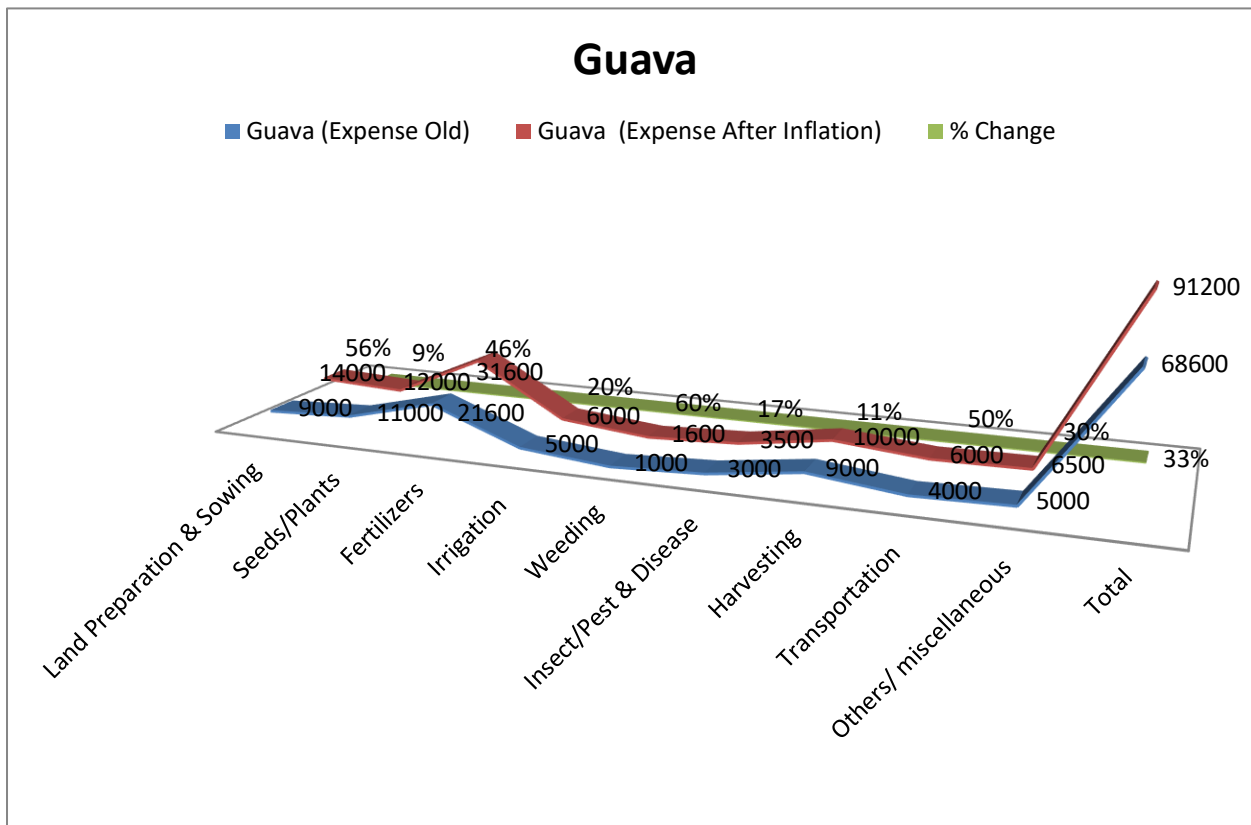


**Fig 9. Difference in cost of production of Maize Crop per acre (2021-2022):**



**Fig.9.** indicates that cost of production of Maize crop has been raised up to 59% during a single calendar year i.e. in 2021 per acre expenses of Maize crop was 37400 Rs. (PKR) and now in 2022 because of inflation/ increase in prices of agriculture commodities. 108% increase in the prices of Herbicides, 100% increase has been reported by the respondents in cost of Maize Seeds and transportation. 50% increase in cost of irrigation. Now in 2022 the total cost of production of Maize crop per acre is 59600 Rs. (PKR).

**Fig 10. Difference in cost of production of Guava Orchard per acre (2020-2022):**



**Fig.10.** indicates that cost of production of Guava Orchard has been raised up to 33% from 2020-2022 i.e. in 2021 per acre expenses of Guava Orchard per acre was 68600 Rs. (PKR), and now in 2021-22 because of inflation/ increase in prices of agriculture commodities. 50% increase in the transportation cost, 60% increase in the cost of weeds management and 46 % increase in the fertilizer costs has been responded by the farmers. Now in 2021-22 the total cost of production of Guava Orchard per acre is 91200 Rs. (PKR).

#### 4. CASE STUDIES:

Nasar Hayaya is a 52 years old farmer from village Dhareema, Tehsil and District Sargodha. He owns about 11 acres of land and is involved in management of Citrus and Guava Orchards along with that he also cultivates Wheat, Rice, Maize and Sugarcane crop. During the process of data collection he told Research Team of Planning and Research Department ZTBL H.O Islamabad that last year he buy gold ear rings for her daughter but suddenly the situation got changed the rates of the agricultural inputs has been raised but he needs to save his guava orchard and to meet the expenses he sold out gold ear rings bought for her daughter.



Muhammad Younus Tatri from Tehsil and District Sargodha. He is 55 years old. He owns about 17 acres of land. He cultivates Wheat, Rice, Fodder crops and also manages Citrus Orchard. During the process of data collection he told Research Team of Planning and Research Department ZTBL H.O Islamabad that he is so fed up because of inflation and due to non availability of agricultural inputs especially fertilizers and quality seeds. He also elaborated that he irrigates his crops by using diesel tube well and now the diesel prices has gone 100%. He needs nearly 5000 R.s to irrigate 1.5 acres of Land. Furthermore he said that he is so fed up that he thinks he will sell his agriculture land and start some other business to earn his livelihood.

Another farmer Sher Muhammad 43 years old from purana Bhalwal Tehsil Bhalwal District Sargodha. He owns about 11.5 acres of Land. He cultivates Wheat, Sugarcane fodder crops and manages a Citrus orchard. During the process of data collection he told Research Team of Planning and Research Department ZTBL H.O Islamabad that he is so worried about the hike in the prices of agricultural inputs and he has sold his buffalo to meet with the expenses farm crops.

The real ground situation is quiet alarming. Inflation/ rise of prices of agricultural inputs is making farmers so un-comfortable/fed up, now they are about to sell their assets to buy agricultural inputs.



#### **Other Information/Needs during Focus Group Discussions (FGD's)**

Due to hike in the prices of petrol/diesel farmers are demanding solar tube well project at easy installments they also to worthy president ZTBL during the Zarai Baithak held in District Sargodha. Along with that farmers also suggested that ZTBL may reduce a little interest rate for the poor farmers and help them getting out from the current sad situation.

## 5. CONCLUSIONS:

On the basis of the analysis of the data following conclusions has been made:

- Nearly half (46%) of the respondents i.e. had small land holding (up to 12.5 acres), while (38%) of the respondents having medium land holding (>12.6 to 25 acres) and (16 %) of the respondents had large land holding (i.e. more than 25 acres).
- An over whelming majority of farmers/respondents (94%) have Canal + Tube well as a source of irrigation. (4%) of the respondents has canal water as a source of irrigation and (2%) of the farmers have tube well as a source of irrigation. Out of which (46.81%) farmers use 30% of canal water and 70% of tube well water for irrigation purpose. (31.91%) of farmers use 40-60% of canal + tube well water for irrigation. (14.89%) of respondents has availability of 25-75% of canal + tube well for irrigation and (6.38%) of respondents has availability of 20-80% of canal + tube well for irrigation.
- All the respondents (100%) agreed increase in prices of the agricultural inputs.
- Total 100% of the farmers/respondents believe that hike in Petrol/Diesel prices effected their crop cycle. An over whelming majority of the respondents 98% said that increase in the prices of fertilizers effected their crop cycles. 56% of the respondents said that increase in agricultural marketing/transport costs effected their crop cycle. 54% of the respondents reported seed prices inflation disturbed their crop cycle. 52% responded increase in the electricity costs effected their crop cycle. Nearly less than half 48% of the respondents said that farm labor costs effected their crop cycle, 42% claims increase in cost of farm machinery effected their crop cycle, 38%, 36% and 30% of the respondents reported increase in prices of Herbicides, insecticide and pesticides affected their crop cycle.
- Farmers are mostly worried about the prices of Diesel which they use to run their tube wells. Diesel prices increased about over 100% and that's really tenseful
- All the respondents (100%) of the farmer's responded 25% increase in the prices of herbicides and insecticides. (96%) of the farmers reported 75-100% increase in the prices of diesel/petrol, (96%) of the respondents described 25% increase in the prices of pesticides. (94%) of the respondents reported 25% increase in the rates of farm labor. 88% of the respondents reported 25-50% increase in the prices of farm machinery. (84%) of the respondents reported 25% increase in the cost of electricity. (80%) of the respondents reported 25-50% increase in the prices of fertilizers. (70%) of the respondents reported 25% increased in the prices of seeds.
- While asked the farmers after inflation do you have access to the agricultural inputs and the responses showed that due to electricity/power crisis in the country those farmers owning electrical tube wells (72%) of the respondents don't have access to electricity and their crops are facing severe water scarcity. A majority of farmers have easy access to transport for Agricultural marketing, herbicides, insecticides, pesticides, farm machinery and farm labor i.e. (94%, 86%, 84%, 84%, 82% and 76%) respectively. (64%) of the farmers have easy access to diesel/petrol to run their tube wells, while 26% of the respondents have limited access to diesel/petrol, (68%) of the farmers reported that they fertilizer availability is damn difficult for them.

- An overwhelming majority (92%) of the farmers living standard was very highly effected and high input costs of agricultural commodities. Crop quality decline is high as reported by 74% of the respondents. 66% of the respondents reported medium effect of their livestock production. 58% of the respondents reported high loss in crop production/yield. 42% of the respondents reported very high loss in crop productivity. 32% of farmers reported highly effected because of low profitability of their produce. 28% of farmers reported high loss in livestock production. Crop quality decline is medium as reported by 22% of the respondents. 4% reported very high loss in their produce quality.
- Farmers committed to use fewer fertilizers because of inflation and availability of fertilizers. 100% of farmers stopped using Potash fertilizers in Wheat, Rice and Maize crop. Respondents reported 60% less use of urea fertilizer in sugarcane and Rice Crop after inflation. Farmers using 50% less DAP/Nitrophos in Wheat Rice and sugarcane crop. Farmers using 50% less potash fertilizer in Sugarcane. Farmers are using 33% less urea fertilizer in wheat and Maize crops. Farmers using 33% less DAP/Nitrophos in sugarcane crop.
- Cost of production of wheat crop has been raised up to 65% within a single calendar year 202-2022 i.e. in 2021 per acre expenses of wheat crop was 38700 Rs.(PKR). Now in 2022 the total cost of production of wheat crop per acre is 64000 Rs. (PKR).
- Cost of production of Rice crop has been raised up to 38% within a 2020-2022 i.e. in 2020 per acre expenses of Rice crop was 62300 Rs. (PKR). Now in 2022 the total cost of production of Rice crop per acre is 112300 Rs. (PKR).
- Cost of production of Sugarcane crop has been raised up to 43% within a single calendar 2020-2022 i.e. in 2020 per acre expenses of Rice crop was 78600 Rs. (PKR). Now in 2022 the total cost of production of Sugarcane crop per acre is 112300 Rs. (PKR).
- Cost of production of Citrus orchards has been raised up to 48% during 2020-2022 i.e. in 2020 per acre expenses of citrus orchard was 81200 Rs. (PKR). Now in 2021-22 the total cost of production of Citrus Orchard per acre is 120050 Rs. (PKR).
- Cost of production of Maize crop has been raised up to 59% during a single calendar year i.e. in 2021 per acre expenses of Maize crop was 37400 Rs. (PKR) and now in 2022 Now the total cost of production of Maize crop per acre is 59600 Rs. (PKR).
- Cost of production of Guava Orchard has been raised up to 33% from 2020-2022 i.e. in 2020-21 per acre expenses of Guava Orchard per acre was 68600 Rs. (PKR). Now in 2021-22 the total cost of production of Guava Orchard per acre is 91200 Rs. (PKR).

## **6. SUGGESTIONS:**

On the basis of the conclusions following suggestions were made these are given as under:

### **Suggestions for Policymakers/ Stake Holders:**

- Inflation in the prices of Agricultural inputs are making farmers so worried and even poor /small farmers are getting more poor. The policy makers /governments must provide subsidy to the farmers especially in Seeds, Fertilizers and Agricultural Machinery to facilitate the farming community.
- Fertilizer mafia in the country is selling fertilizers at arbitrary rates and earning way more profit. Government should make some policies and implement to control monopoly of fertilizer mafia. Local governments must play their role to facilitate the farmers.
- Climate Change is making input cost higher by accelerating pests, diseases and weeds. Farmers have to pay a lot on pesticides, insecticides, herbicides and diseases to prevent his crop so, there is dire need to start the projects/programs to disseminate Climate Smart Agricultural (CSA) technologies to the farmer and to build the capacity of farming community to adopt/ mitigate climatic factors on their crops and orchards.
- Agricultural Extension departments of the government must train the farming community alternative ways to reduce input costs. E.g. compost/fertilizer making, crop rotation, inter-cropping techniques growing of leguminous crops etc.

### **Suggestions for ZTBL:**

- Even after an increase in the credit limits of crops vide circular No. CD/11/2022/466 dated 11.05.2022. The input agricultural costs has gone much high than we have ever imagined. The Credit policy department may be benefited from this research study and will again rethink to revise the per acre limit for crops and orchards.
- Agriculture Technology Department (ATD) of ZTBL may also be benefited from this research study and design the crop training calendar accordingly. ATD may organize trainings for farming community on “How to reduce input cost by using different agricultural technologies”. ATD may motivate the farmers on organic fertilizer/compost making. Department may also impart trainings on crop rotation, inter-cropping techniques growing of leguminous crops etc.
- To facilitate the poor/ small/ medium farmers ZTBL policy makers may also think to reduce the interest rate on loaning items/products.
- To mitigate the energy crisis in the country and huge increase in the prices of diesel. ZTBL credit policy department may think to revise loaning system of solar tube well on easy installments for farmers. There is a huge demand of solar tube well among the farming community.

## 7. REFERENCES/LITERATURE CITED

Elleby, C.; Domínguez, I.P.; Adenauer, M.; Genovese, G. Impacts of the COVID-19 Pandemic on the Global Agricultural Markets Environ. Resour. Econ. **2020**, *76*, 1067–1079. [[CrossRef](#)] [[PubMed](#)]

IMF. World Economic Outlook, April 2020: The Great Lockdown. World Economic Outlook; International Monetary Fund: Washington, DC, USA, 2020; Available online: <https://www.imf.org/en/Publications/WEO/Issues/2020/04/14/weo-april-2020> (accessed on 12 December 2021).

World Bank. Global Economic Prospects, June 2020. Available online: <http://hdl.handle.net/10986/33748> (accessed on 24 December 2021).

FAO. Migrant Workers and the COVID-19 Pandemic; Food and Agriculture Organization of the United Nations: Rome, Italy, 2020; Available online: <https://www.fao.org/family-farming/detail/en/c/1275271/> (accessed on 23 November 2021).

Ramakumar, R. Agriculture and the COVID-19 Pandemic: An Analysis with Special Reference to India. Rev. Agrar. Stud. **2020**, *10*, 72–110.

Anthem, P. Risk of Hunger Pandemic as COVID-19 Set to Almost Double Acute Hunger by End of 2020. World Food Programme, 16 April 2020. Available online: <https://www.wfp.org/stories/risk-hunger-pandemic-coronavirus-set-almost-double-acutehunger-end-2020> (accessed on 23 March 2022).

Adhikari, J.; Timsina, J.; Khadka, S.R.; Ghale, Y.; Ojha, H. COVID-19 Impacts on Agriculture and Food Systems in Nepal: Implications for SDGs. Agric. Syst. **2021**, *186*, 102990. [[CrossRef](#)]

Nicola, M.; Alsafi, Z.; Sohrabi, C.; Kerwan, A.; Al-Jabir, A.; Iosifidis, C.; Agha, M.; Agha, R. The Socio-Economic Implications of The Coronavirus Pandemic (COVID-19): A Review. Int. J. Surg. Open **2020**, *78*, 185–193. [[CrossRef](#)]

Workie, E.; Mackolil, J.; Nyika, J.; Ramadas, S. Deciphering the Impact of COVID-19 Pandemic on Food Security, Agriculture, and Livelihoods: A Review of the Evidence from Developing Countries. Curr. Res. Environ. Sustain. **2020**, *2*, 100014. [[CrossRef](#)]

ADB. COVID-19 Impact on Farm Households in Punjab, Pakistan: Analysis of Data from a Cross-Sectional Survey; Asian Development Bank: Mandaluyong, Philippines, 2020; Available online: <https://hdl.handle.net/11540/12257> (accessed on 24 March 2022).

Venkatesh, P.; Singh, D.R.; Jaiprakash, B.; Sangeetha, V.; Suresh, K.; Renjini, R.; Balasubramanian, M.; Girishk, J.; Alka, S. Assessment of Farm Constraints and Income Losses During COVID-19 Lockdown in India. Indian J. Agric. Sci. **2021**, *91*, 639–643.

Bochtis, D.; Benos, L.; Lampridi, M.; Marinoudi, V.; Pearson, S.; Sorensen, C.G. Agricultural Workforce Crisis in Light of the COVID-19 Pandemic. Sustainability **2020**, *12*, 8212. [[CrossRef](#)]

Mitaritonna, C.; Ragot, L. After Covid-19, Will Seasonal Migrant Agricultural Workers in Europe Be Replaced by Robots? Policy Brief No. 33; CEPII: Paris, France, 2020; Available online: [http://www.cepii.fr/PDF\\_PUB/pb/2020/pb2020-33.pdf](http://www.cepii.fr/PDF_PUB/pb/2020/pb2020-33.pdf) (accessed on 24 March 2022).

Parry, M., M.L. Parry, O. Canziani, J. Palutikof, P. Van der Linden and C. Hanson. 2007. Climate change 2007-impacts, adaptation and vulnerability: Working group II contribution to the fourth assessment report of the IPCC. 4. Cambridge University Press, pp. 1-22.

<https://tribune.com.pk/story/2361150/fertiliser-to-become-more-expensive>

# RESEARCH INSTRUMENT/ INTERVIEW SCHEDULE

## IMPACT ASSESSMENT OF RAISING PRICES OF AGRICULTURAL COMMODITIES/INPUTS, ON SOCIO ECONOMIC STATUS OF FARMING COMMUNITY: (Interview Schedule)

### Objective 1: To identify socio-economic characteristics of farmers

1. Name of the respondent: \_\_\_\_\_
2. Age (years): \_\_\_\_\_
3. Village and tehsil: \_\_\_\_\_
5. Education (Years of Schooling) \_\_\_\_\_
9. Land tenure status: \_\_\_\_\_
  - 9.1: Owner \_\_\_\_\_
  - 9.2: Tenant \_\_\_\_\_
  - 9.3: Owner + Tenant \_\_\_\_\_
  - 9.4: Total farm size \_\_\_\_\_
  - 9.5: Total area under cultivation \_\_\_\_\_

### 11. Sources of household income:

- : Farming \_\_\_\_\_
- : Livestock \_\_\_\_\_
- : Business \_\_\_\_\_
- : Public sector \_\_\_\_\_
- employee:
- : Private sector \_\_\_\_\_
- employee

### 12. Which sources do you use for irrigation purpose?

- (a) Canal water
- (b) Tube well
- (c) Waste water
- (d) Canal Water + Tube well
- (e) Canal Water + Waste Water
- (f) Canal Water + Tube Well+ Waste Water

### 13. What percentage of different water sources do you use?

Canal water	.....%
Waste water	.....%
Tube well	.....%



Objective 2: To evaluate the direction and magnitude of the potential impacts of raising prices of agricultural commodities on the aggregate agricultural output and other key agricultural indicators.

**14. Which of the following major crops did you have grown in the last 12 months?**

Name of Crop	
Wheat	
Rice	
Sugarcane	
Maize	
Other crop	

**15. Do you think prices of agricultural inputs rises?**

- (i) Yes (ii) No

**16. Which Agricultural commodities prices affected your crop cycle**

S.No	Commodities	Yes	No
1	Electricity		
2	Petrol/Diesel		
3	Seeds		
4	Fertilizers		
5	weeds		
6	Herbicides		
7	Insecticides		
8	Pesticides		
9	Farm Machinery		
10	Farm Labour		
11	Agriculture Marketing and Transport		

**17. Percentage of increase of prices of Agricultural commodities prices on your crop cycle?**

S. No	Commodities	A	B	C	D
1	Electricity				
2	Petrol/Diesel				
3	Seeds				
4	Fertilizers				
5	weeds				
6	Herbicides				
7	Insecticides				
8	Pesticides				
9	Farm Machinery				
10	Farm Labour				
11	Agriculture Marketing and Transport				
A=25%, B = 25-50%, C=50-75% D= 75-100%					

Objective 3: To check the relation of raising prices of agricultural commodities and farmers practices.

**18. After Inflation in prices, farmers' access to the availability of Agricultural Inputs from the markets?**

S. No	Commodities	A	B	C	D
1	Electricity				
2	Petrol/Diesel				
3	Seeds				
4	Fertilizers				

5	weeds				
6	Herbicides				
7	Insecticides				
8	Pesticides				
9	Farm Machinery				
10	Farm Labour				
11	Agriculture Marketing and Transport				
A=Not Available, B = Limited available C=Available with difficulty D= Easily available					

19. Difference between fertilizer applications for crops before and after inflation?

Crop/Fruits	Data Before Inflation			Data After Inflation		
	Fertilizers(No of Bags/acre)			Fertilizers(No of Bags/acre)		
	Urea	DAP/ Nitrophos	Potash	Urea	DAP/ Nitrophos	Potash
Wheat						
Rice						
Maize						
Sugarcane						
Citrus						
Guava						
Grapes						
Anyother						

20. What are the main effects of rising prices of agricultural inputs on livelihood?

Aspects	1	2	3	4	5
Crop production					
Crop quality					
Effect on living standard					
Effect on livestock production					
High input cost					
Low profit					
Any other					
1. Very low	2. Low	3. Medium	4. High	5. Very high	

Please mention cost of production of following crops after Inflation?

Crops	Activity Amount in (RS)								
	Land Preparation & Sowing	Seeds	Fertilizers	Irrigation	Weeding	Insect/Pest & Disease Management	Harvesting	Transportation	Others/ Miscellaneous
Wheat									
Rice									
Sugarcane									
Citrus									
Maize									
Guava									

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### **Author of the study:**

Muhammad Fakhar Imam, Head R&PU, P&RD, ZTBL, H.O. Islamabad

