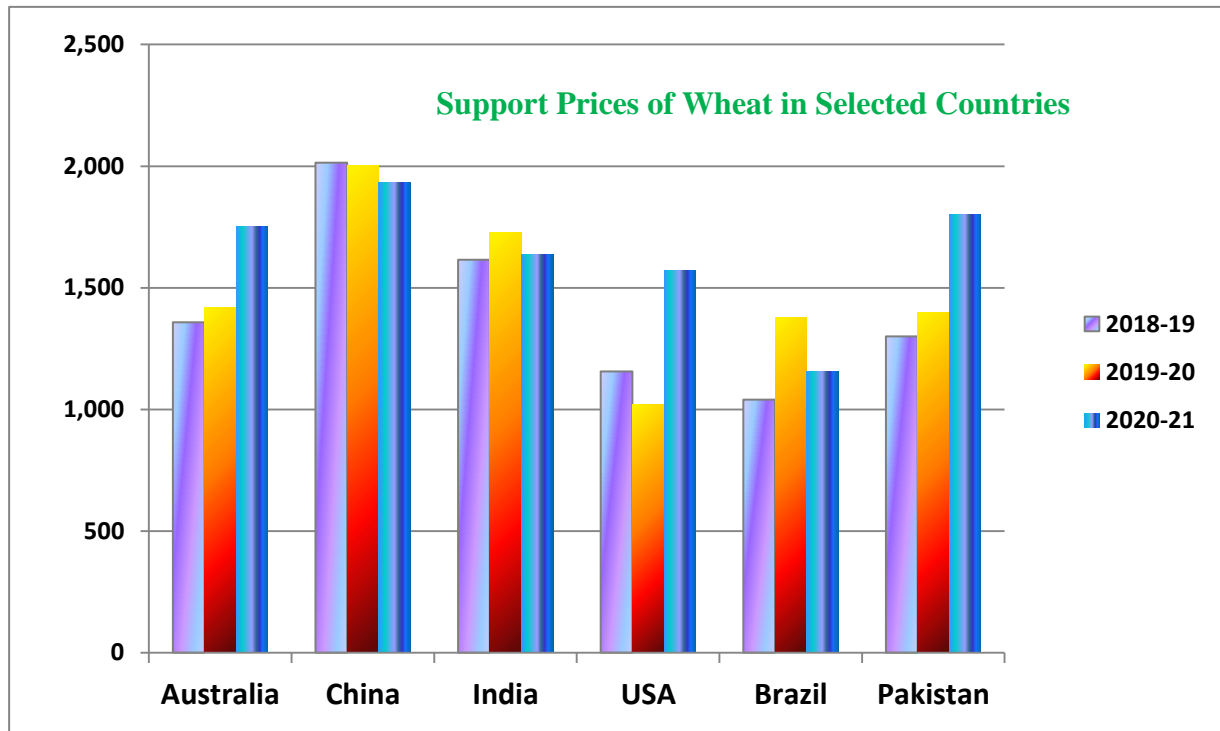




WHEAT POLICY ANALYSIS FOR 2021-22 CROP



AGRICULTURE POLICY INSTITUTE
MINISTRY OF NATIONAL FOOD SECURITY AND RESEARCH
GOVERNMENT OF PAKISTAN
ISLAMABAD

DECEMBER 2021

Preface

The fundamental objective of this report is to provide information on various economic aspects of the wheat crop, crucial in the formulation of the Minimum Support Price Policy. A report of this kind is always important because a broader audience benefits, ranging from policy makers to planners, academia, researchers, student community, growers/growers' associations, chambers of agriculture, traders, etc.

The single title of the report may not lengthily reflect the scope and purpose, unless the reader travels through the important elements of the report. The document contains a number of important factors as analysis of wheat crop. Many portions are relevant, however, a few economic factors have been described as the building blocks which provide useful insights into the Minimum Support Price Policy perspective. It is partly uncontrollable curiosity of the stakeholders and partly the practical needs of policy makers that this report be there to give answers to the questions on determining of producer price of the commodity.

We as API team, collectively owe thanks to all the Committee members and participants of the various meetings, for their valuable discussion and input, Federal and Provincial Government departments for sharing of information, without all that it would have not been possible to complete the report.

API greatly appreciates the feedback and suggestions from all four corners and looking forward for a continued partnership in the formulation of price policy analysis and producing of important reports concerning agriculture and food security.

(Abdul Karim)
Director General

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ABBREVIATIONS

AARI	Ayub Agriculture Research Institute
AJ&K	Azad Jammu and Kashmir
API	Agriculture Policy Institute
APW	Australian Premium White
C&F	Cost and Freight
COP	Cost of Production
CPI	Consumer Price Index
CWRS	Canada Western Red Spring
DAP	Di Ammonium Phosphate
DRC	Domestic Resource Cost
ECC	Economic Coordination Committee (of the Cabinet)
E&M	Economics and Marketing
EPC	Effective Protection Coefficient
EU	European Union
FAO	Food and Agriculture Organization
PBS	Pakistan Bureau of Statistics
FOB	Free on Board
FYM	Farm Yard Manure
GDP	Gross Domestic Product
GMR	Grain Market Report
GST	General Sales Tax
HIES	Household Integrated Economic Survey
HRW	Hard Red Winter
HSD	High Speed Diesel
HYVs	High Yielding Varieties
IRRI	International Rice Research Institute
KPK	Khyber Pakhtunkhwa
N	Nitrogen
NAs	Northern Areas
NFDC	National Fertilizer Development Centre
NPC	Nominal Protection Coefficient
P	Phosphatic
PAM	Policy Analysis Matrix
PARC	Pakistan Agricultural Research Council
PASSCO	Pakistan Agricultural Storage and Services Corporation
USA	United States of America
USDA	United States Department of Agriculture

WHEAT POLICY ANALYSIS FOR 2021-22CROP

SUMMARY OF FINDINGS AND RECOMMENDATIONS

- Findings

A brief summary of the key findings and recommendatins are given below:

Area and Production

- Punjab and Sindh, sow wheat on 86.8 per cent of the area and contribute about 91.4 per cent in wheat production. While the share of Khyber Pakhtunkhwa and Balochistan is 13.2 per cent in area and 8.6 per cent in production.
- During the decade ending 2020-21, wheat production has been observed a sluggish growth of 0.7 per cent per annum, while area embraced by 0.1 per cent.
- Wheat production from 2020-21 crop is reported at 27.46 million tonnes, showing 8.8 per cent higher than the production of 25.24 million tonnes in 2019-20.
- Since 2010, 22 high yielding wheat varieties have been developed by Research Institutes for the irrigated and rainfed areas with an estimated yield potential ranging 5000-8000 kgs per hectare. However, the yield during the last decade improved mainly by 0.8 per cent.

Domestic Requirements

- Based on 3-year average per capita availability of 115 kgs per annum, the domestic requirement of wheat for human consumption comes to 26.04 million tonnes for the year 2021-22.
- Assuming the per capita consumption of PBS-HIES at 84 kgs per annum, the domestic requirement for human consumption comes to 19.02 million tonnes.
- Including one million tonnes as food security reserve and 2.76 million tonnes for seed, feed and wastage, the total domestic requirement will range between 22.78 and 29.80 million tonnes. Adding the last year stocks, the surplus estimates at (-)1.50 to 5.51 million tonnes, respectively.

Domestic Prices

- Monthly average market prices of wheat for 2020-21 crop higher than the support price in Punjab and Sindh.

- The wholesale prices of wheat averaged at Rs 1858 per 40 kgs in the Punjab during the post harvest season in major producing areas.

Cost of Production

- In Punjab, the net cost of wheat cultivation for 2021-22 season is estimated at Rs 49,111 per acre including land rent.
- The cost of production at market / procurement centre level would be Rs 1677 per 40 kgs for 2021-22, which is higher by Rs 90 than the corresponding COP of Rs 1587 in 2020-21.
- In Sindh, the net cost of wheat cultivation for 2021-22 crop is probable at Rs 52,908 per acre including land rent.
- The cost of production at market/procurement centre level would come to Rs 1673 per 40 kgs, showing increase of Rs.134 over the last year.

Economics of Wheat and Competing Crops

- Wheat crop has shown relatively lower performance during 2020-21 and farmers received a small margin over the cost of wheat production (13 %). In Punjab, Wheat crop has performed lower than sunflower in terms of output input ratio, however, better in terms of returns to irrigation water, where Sunflower, has out-performed wheat in rest of the economic criteria. Canola crop has given better rewards over wheat and sunflower in terms of returns to overall investment and returns to purchased inputs.
- Under indirect competition scenario, wheat combination with rice varieties performed lower in terms of all economic criteria. The rice combinations were out-competed by sugarcane in term of all economic criteria.
- In Sindh, the returns to overall investment in wheat crop remained lower than oilseed crop sunflower and canola during 2020-21. However, wheat has performed better than the two oilseeds with big margin in respect of other economic indicators like crop duration and irrigation water.
- In case of indirect competition a mixed situation is being observed across the crop combinations. Wheat combination with cotton out-performed sugarcane in terms of returns to crop duration and irrigation water used.

Economics of Fertilizer Use

- The quantity of wheat needed to buy one nutrient tonne of Nitrogenous fertilizer has fluctuated from 1.67 to 2.90 tonnes during the decade of 2010 to 2021.

- During 2020-21, the parity ratio between market prices of Nitrogen and wheat was not in favour of wheat due to high prices of Nitrogen fertilizer and 1.69 units of wheat were required to buy one unit of Nitrogenous fertilizer, a nominal improvement over previous year.
- The quantity of wheat needed to buy one nutrient tonne of Phosphatic fertilizer has fluctuated between 1.16 to 6.26 tonnes during 2011 to 2021.
- During 2020-21, the parity ratio between market prices of Phosphatic and wheat purchasing power has worsened further and around 2.60 units of wheat could purchase one unit of P fertilizer.

Nominal and Real Support Prices

- The nominal support prices of wheat during 2015-16 to 2020-21 have experienced an overall increase of 38.46 per cent, while the real support prices have decreased by (-1.70) per cent over the base year.

Nominal and Real Market Prices

- The nominal market prices of wheat have shown an overall increase of 62 per cent, against the base year, while the real market prices have shown, increased by (14.70) per cent due to rise in CPI (40.96%).

World Production and Prices

- World wheat production estimated at 773 million tonnes in 2020-21 is higher than 12 million tonnes than the last year, while it is forecast at 788 million tonnes in 2021-22.
- The closing stocks at 276 million tonnes in 2019-20 and increase to 279 million tonnes in 2020-21 and are forecast at 280 million tonnes in 2021-22, an increase of one million tonnes higher than the last year stocks.
- The average Fob (gulf) prices of US Hard Red Winter (HRW) wheat fluctuated widely and rising as high as US \$ 347 per tonne in 2012-13. The price decreased to US \$ 197 per tonne in 2016-17, however, showed upward trend and reached at US \$ 232 per tonne in 2018-19. The prices started to increase and next couple of years averaged at its US \$ 269 per tonne in 2020-21.
- During 2020-21, international prices of US No. 2 HRW wheat have averaged at US \$ 269 per tonne and that of SRW at US \$ 264 per tonne.

Export/Import Parity Prices

- Based on the average Fob (gulf) price of US HRW and US SRW wheat during 2020-21, the export parity price works to Rs 1557 and 1524 per 40 kgs. The export parity price calculates to Rs 1369 and 1318 per 40 kgs, respectively on the basis of average fob price during 2018-19 to 2020-21. For 2021-22 (July-Sept), these prices are equivalent to Rs 1867 and 1744 for HRW and SRW, respectively.
- Based on the Fob price during 2021-22 (July-Sept), the import parity prices of US \$ 2 HRW calculate to Rs 2938 per 40 kgs at Multan and Rs 2766 per 40 kgs at Karachi while for SRW, the prices worked out at Rs 2805 at Multan and Rs 2633 per 40 at Karachi. These prices were relatively higher during 2020-21.
- Based on the average Fob (gulf) price during 2018-19 to 2020-21, the import parity price of US \$ HRW works to Rs 2399 per 40 kgs at Multan, while Rs 2227 per 40 kgs at Karachi.
- Based on the future prices of black sea (US.\$ per tonne) price during (2018-19 to 2020-21) is 2805 per 40 kgs at Multan and 2633 per tonne at Karachi and 273 per 40 kgs in 2021-22 at Multan and 2591 per tonne in Karachi.

Economic Efficiency

- Economic efficiency of resource use in wheat production has been evaluated by estimating the Nominal Protection Coefficient (NPC), Effective Protection Coefficient (EPC) and Domestic Resource Cost (DRC).
- The NPC values in Punjab under import scenario ranged between 0.71 to 1.12 in Punjab and 0.75 to 1.12 in Sindh.
- The EPCs under import scenario, in Punjab remained less than one due to less increase in input prices as compared with the price of wheat
- Under export scenario, the NPC values are greater than one, which indicate that domestic input prices and open market prices of wheat do not offer favorable prospects for wheat export from Pakistan.
- The DRCs in Punjab and Sindh under import scenario are less than one, except 2015-16 and 2016-17, during the period, indicating a Pakistan's Comparative Advantage in domestic wheat production rather than import. While under export scenario, DRCs coefficients do not indicate Comparative Advantage being greater than one; thus implying that Pakistan should not promote wheat production for export.

World Comparison

- Pakistan is the 8th largest wheat producer in terms of area and production but ranks at 62nd position in terms of yield per hectare.
- Among the major wheat producing countries, Pakistan's positions falls at the bottom in the context of yield. This gap in yield can be narrowed through adoption of optimal technology.
- Support price of wheat in India during 2018-19 to 2019-20 was considerably higher as compared to Pakistan, through providing huge subsidies on farm inputs.

Impact of Support Price on CPI and Household Expenditure

- In case the support price of wheat is enhanced by Rs 50 per 40 kgs over the existing level of Rs 1800 per 40 kgs, the CPI would likely to rise by 0.07 per cent.
- Likewise, the increase of Rs 100 per 40 kgs over the existing support price would bring additional expenditure of Rs 287 per capita per year or Rs 1820 per household.

Policy Options

Based on the analysis of relevant factors covered in the main text of the Report, the likely policy options for wheat 2021-22 crop would be as under:

Base		Likely price of domestic wheat at procurement center		
		Rs per 40 kgs		
		HRW	SRW	
1.	Export parity price on the basis of:			
	a)	Fob (gulf) prices of US Hard Red Winter (HRW) & Soft Red Winter (SRW) wheat during 2020-21, if exported from Multan	1557	1524
	b)	Fob (gulf) average prices of US HRW & SRW wheat during 2018-19 to 2020-21, if exported from Multan	1369	1318
	c)	Fob (gulf) prices of US HRW & SRW wheat during 2021-22 (Jul-Sep), if exported from Multan	1867	1744
2.	Import parity price on the basis of:			
	a)	Fob (gulf) prices of US HRW & SRW wheat during 2020-21, if consumed at:		
		- Karachi	2430	2395
		- Multan	2602	2567
	b)	Fob (gulf) price of US HRW & SRW wheat during 2018-19 to 2020-21, if consumed at:		
		- Karachi	2227	2171
		- Multan	2399	2343
	c)	Fob (gulf) price of US HRW & SRW wheat during 2021-22 (July-Sep), if consumed at:		
		- Karachi	2766	2633
		- Multan	2938	2805
3.	Monthly average wholesale market prices of wheat in major producing areas during the post-harvest period of 2020-21 crop:			
		- Punjab	1858	-
		- Sindh	—	-
4.	Cost of production estimates at market/procurement centre level for 2021-22 crop:			
		- Punjab	1677	-
		- Sindh	1673	-

➤ **Recommendations**

In view of the field information, consultation with the stakeholders in the API Committee meeting on Wheat and analysis of relevant factors, the following recommendations are made regarding the support price, improving productivity and marketing of 2021-22 wheat crop:

Support Price

- The API strongly feels that the country should emphasize on sustainable wheat production as the crop is not only a staple food but also a major food security concern of the economy.
- In view of the existing incentive price of wheat, food inflation and other food security concern, the Government may like to consider timely announcing of the Minimum Support Price of Wheat.
- The Minimum Support Price provides a reference point for procurement by the public sector agencies to meet the food security requirements of the country.
- It is important to ensure that in view of free market and active role of private sector, the actual incentive to wheat growers should come through the market forces.
- The Government's policy of encouraging the role of private sector in wheat marketing needs to be strengthened ensuring a strong regulatory mechanism is in place.
- The MSP is expected to provide some profit margin over the cost of production for improving productivity through balanced input use, better management and optimal technology adoption.
- The PASSCO and Provincial Food Departments may be designated as the implementing agency for the procurement of wheat at the support price announced by the government.
- PASSCO and Provincial Food Departments being the implementing agencies should make prior arrangements for wheat procurement and enter in the field well in time, especially in Sindh province where the harvesting starts early.

Improving Productivity

- Agriculture Extension Departments should annually publicise the seed availability of new high yielding varieties well before the sowing season in collaboration with the Research Institutes.
- To ensure the food security in future, there is a dire need to study the impact of climate change on land use, crop maturity and cropping pattern.

- The coordinated efforts should be made for fast tracking the national wheat breeding programme for resistant varieties to UG 99 Stem Rust, drought, salinity, heat and frost.
- Molecular breeding for development of low input but high responsive varieties of wheat should be strengthened.
- Awareness campaign should be conducted by the provincial governments for rational use of chemical inputs through regular soil and water testing in coordination with the private sector.
- The technologies like laser levelling, zero tillage and high efficiency irrigation systems should be promoted.
- There should be a national programme for multiplication and dissemination of seed - fertilizer drills, on subsidized rate to improve the fertilizer use efficiency in case of phosphate.
- The Government should emphasize on timely availability of certified seed and grading of farm seed for wheat cultivation.
- Measures should be taken for strict quality control to check adulteration of weedicides, herbicides, pesticides and fertilizer to enhance their efficiency.
- For the efficient use of fertilizer, the Government should control the black marketing of DAP and Urea to keep the prices at optimal level to maintain certain level of ratio in prices of fertilizer and wheat.
- The Seed Act may be implemented in true spirit and the private seed companies selling spurious and fake seeds may be strictly penalized.

Improving Statistics and Marketing

- The Government should establish Input Price Regulatory Authority in order to check and control the input prices and other related matters.
- The Government should stress on value addition in wheat produce to improve its export competitiveness in the world market.
- The Khyber Pakhtunkhwa and Balochistan Governments should adopt the crop cutting experiments in line with the Punjab and Sindh.
- There is a need to constitute a committee of experts to examine the current system of crop estimation and suggest ways and means to improve the provincial crop estimates.
- The Government should give more attention to enhance storage capacity both in public and private sectors particularly at grassroots level.
- The strategic reserve of two million tonnes needs to be maintained for the sake of food security for the masses.

- There is a need to tap the potential of organic wheat production in the province of Balochistan. The demand for organic wheat in the world market should be acquired through Pak Missions abroad.
- Farmers suggested reduction in mark up by the ZTBL and other Commercial Banks on small loans to growers.

WHEAT POLICY ANALYSIS FOR 2021-22 CROP

INTRODUCTION

Wheat is Pakistan's one of the largest crops and the main staple diet. Wheat contributes about 9.2 per cent to the value added in agriculture and 1.8 per cent to the GDP¹. The crop occupies around 39.2 per cent of total cropped area. It is generally cultivated on 8.8 million hectares with an annual average production of 25.63 million tonnes (2018-21) wheat production. About 87.4 per cent of wheat area is irrigated which accounts 93.5 per cent of the annual production. During certain years like 2010-11 and 2011-12, wheat was exported in high quantity. During 2020-21, wheat production target was 27.00 million tonnes fixed by the (FCA). However, the production reached 27.46 million tonnes record higher level by 8.8 per cent, yield by 4.5 per cent and area by 4.1 per cent against the target.

2. Amongst the world wheat producing countries, Pakistan ranks 8th in terms of both area and production. However, in terms of productivity, Pakistan stands much lower in ranks i.e. 62nd in terms of yield per hectare². There is huge gap between the existing and the potential, as the yield at research farms of high yielding wheat varieties range between 5 to 8 tonnes per hectare, while the national average yield is only 2.97 tonnes per hectare. This gap in yield can be narrowed through adoption of optimal technology and better management. Provision and availability of quality seed, fertilizers, herbicides and other inputs is an issue particularly for resource poor farmers to use at the optimum level. Timely availability of inputs and production technology at the grassroots level along with incentive prices for their produce are a few important steps to be ensured for attaining improved productivity on sustainable lines.

3. Ensuring food security and reducing uncertainty and price risk in wheat farming, are the policy objectives of the government which are pursued through announcing the minimum guaranteed/support price of wheat. This price is reviewed annually by the Government on the recommendations of the API and M/o NFS&R. The ECC of the Cabinet had considered the Summary of the M/o National Food Security & Research on the Support Price Policy of Wheat for 2020-21 and approved Rs.1800 per 40 kgs in February, 2021.

¹ Economic Survey of Pakistan, 2020-21.

² Food and Agriculture Organization.

4. Wheat procurement during 2020-21 was reported at 5.83 million tonnes, against the target of 6.30 million tonnes³. Procurement agencies have achieved 92.58 per cent of the target fixed by the government. Provincial food Departments collectively achieved 98.29 percent and 68.31 percent by PASSCO.

5. The price policy recommendations for 2021-22 wheat crop have been formulated based on the following important activities undertaken by the API:

- i. An annual field survey was carried out in the important wheat growing areas of Punjab and Sindh during July 2021 to update the data on prices of inputs, hiring rates of farm operations and marketing cost.
- ii. The data on area and production, stocks, trade and prices; both domestic and global, and Consumer Price Index were collected from various agencies and published material. The producer prices of wheat in selected countries were collected from various national and international agencies and through internet. These data have been analyzed to reflect the domestic and international position on various aspects of wheat production and marketing.

6. As wheat is not only the staple food but also a major food security crop in the country, its pricing is a complex phenomenon. Conflicting interests of various stakeholders like growers, consumers, millers, etc play important role in determining the price in the market. In view of fluctuating input prices and increasing cost of production, the farmers argue for higher output prices otherwise wheat farming may not be a viable proposition. Resultant increased producer prices of wheat in turn escalate the consumer prices, leading to food inflation in the economy, in view of its high weight in the average household budget. Accordingly, the governments hesitate to enhance consumer prices of wheat to their economic levels and subsidize the issue prices at considerable cost to the public exchequer.

7. Wheat is one of the sensitive food commodities, thus a slight change in its price and availability does have a positive or negative impact on consumers, especially on the poor segment of the population. Hence, the government has been implementing a Safety Net for food assistance to the poorest to save them from the adverse effects of hike in prices of staple food like wheat and other essential food items.

³M/o National Food Security and Research.

2. SOWING AND HARESTING TIMES OF WHEAT

8. A wide-ranging schedule of wheat sowing for various ecological zones in the country, as recommended by the Pakistan Agricultural Research Council, is presented in Table-1:

Table-1: Recommended Sowing and Harvesting Times of Wheat

Provinces		Times
Punjab		
i)	Southern	1 st November to 30 th December
ii)	Central	1 st November to 15 th December
iii)	Northern:	
a)	Irrigated	1 st November to 15 th December
b)	Un-irrigated	20 th October to 15 th November
Sindh		
i)	Southern	1 st November to 25 th December
ii)	Northern	1 st November to 31 st December
Khyber Pakhtunkhwa		
i)	Plain area	25 th October to 15 th December
ii)	Hilly area	1 st November to 15 th December
Balochistan		
i)	Upper	1 st October to 20 th February
ii)	Plain	1 st November to 15 th December

Source: PARC, Islamabad.

9. In the Punjab, wheat sowing in the irrigated areas generally starts from 1st November and extends upto end of December while in barani areas it begins from 20th October and continues upto 15th November.

10. In Sindh, wheat sowing commences from 1st November and goes upto the end of December.

11. In the Khyber Pakhtunkhwa, wheat is sown from 25th October to 15th December in plain areas and 1st November to 15th December in hilly areas.

12. In Balochistan, wheat sowing starts in advance than other provinces. It begins from 1st October in upper part of the province and goes upto 20th February while in plain areas, sowing times of wheat ranges from 1st November to 15th December.

13. Normally in Pakistan, wheat harvesting starts from middle of March in south and continues till end of July in northern parts. Harvesting of wheat depends on the climatic conditions and maturing time of varieties sown. By and large it starts in March / April and continues up to May, depending upon the sowing time, management practices, climatic conditions and varieties.

3. REVIEW OF 2020-21 CROP

3.1 Provincial Shares in Area and Production

14. Based on average ending 2018-19 to 2020-21, the Punjab and Sindh contribute about 76.1 and 15.1 per cent in total wheat production while the shares of the KPK and Balochistan are around 5.0 and 3.8 per cent, respectively. The provincial shares of area and production are presented in Table-2 and depicted in Figures 1 & 2, respectively.

15. Around 87.5 per cent of wheat acreage is cultivated under irrigated conditions which contribute 93.6 per cent of wheat production in the country.

Table-2: Average Share of different provinces in Area and Production of Wheat: (2018-19 through 2020-21)

Item/ Province	Total	Pakistan	Punjab	Sindh	KPK	Balochistan
	000 hect.	----- Per cent -----				
A. Area						
Total	8883.6 (21952.3)	100.0	74.1	12.7	8.4	4.8
Irrigated	7772.5 (7772.5)	87.5	66.5	12.4	4.0	4.6
Un-irrigated	1111.1 (2745.6)	12.5	7.6	0.4	4.3	0.2
B. Production						
	000 tonnes	----- Per cent -----				
Total	25686.9	100.0	76.1	15.1	5.0	3.8
Irrigated	24032.9	93.6	72.1	14.9	2.9	3.7
Un-irrigated	1654.0	6.4	4.1	0.3	2.0	0.1

Note: Figures in parentheses are thousand acres.

Source: Worked out from Annex-I.

**Provincial shares in Area of Wheat:
(Average of 2018-19 to 2020-21)**

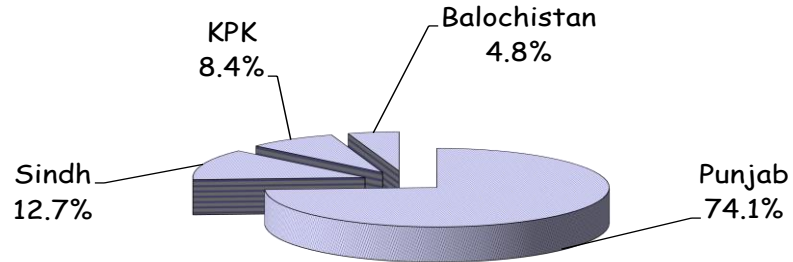


Figure-1: Shares in Area

**Provincial Shares in Production of Wheat:
(Average of 2018-19 to 2020-21)**

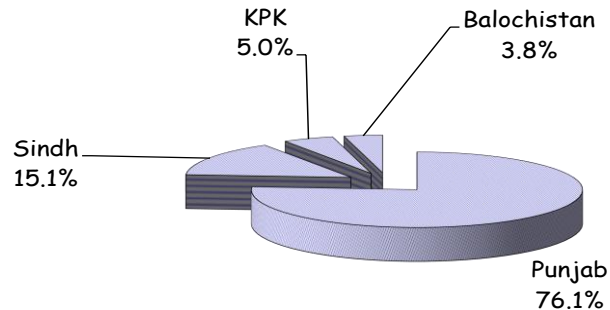


Figure-2: Shares in Production

3.2 Long-term Changes: 2010-11 to 2020-21

16. During the decade ending 2020-21, wheat production at country level has surged @ 0.7 per cent per annum owing to 0.6 per cent improvement in yield and 0.1 per cent expansion in area. In the Punjab, wheat production has increased @ 0.7 per cent annually due to 0.8 per cent improvement in yield and 0.1 per cent acreage contraction. In Sindh, wheat production decreased @ 0.2 per cent per annum due to reduction of yield by 0.7 percent whether 0.5 percent expansion of area of the crop. Annual growth rate of wheat production in KPK and Balochistan remained 0.9 and 2.8 percent respectively.

Table-3: Average Annual Growth Rate of Area, Yield and Production of Wheat during 2010-11 through 2020-21

Country/ Province	Area	Yield	Production
	----- Per cent per annum -----		
Pakistan	0.1	0.6	0.7
Punjab	-0.1	0.8	0.7
Sindh	0.5	-0.7	-0.2
KPK	0.2	0.7	0.9
Balochistan	1.9	0.8	2.8

Note: The growth rates have been worked out by estimating the equation, $Y=a(1+r)^x$, (OLS).

Source: Annex-I.

3.3 Medium Term Changes: 2015-16 to 2020-21

17. The annual growth rate for the period 2015-16 to 2020-21 shows that in Pakistan wheat production has increased @ 0.4 per cent solely due to 0.7 per cent increase of yield at the country level. These growth rates are presented in Table-4.

Table-4: Average Annual Growth Rates of Area, Yield and Production of Wheat: 2015-16 to 2020-21

Country/Province	Area	Yield	Production
	----- Per cent per annum -----		
Pakistan	-0.3	0.7	0.4
Punjab	-0.6	1.0	0.4
Sindh	0.2	0.5	0.7
KPK	-0.5	-1.5	-2.0
Balochistan	3.3	0.0	3.3

Note: The growth rates have been worked out by estimating the equation, $Y=a(1+r)^x$, (OLS) method from the data in Annex-I.

3.4 Performance of 2020-21 crop against 2019-20

18. Wheat production from 2020-21 crop is reported at 27.464 million tonnes at the country level, showing 8.8 per cent higher over 25.248 million tonnes in 2019-20 due to increase of 4.1 and 4.5 per cent in area and yield respectively. These statistics are produced in Table-5 which is depicted in Figures 3 and 4.

Table-5: Area, Yield and Production of Wheat: 2019-20 and 2020-21 Crops

Country/ Province	Area		Changes	Yield per hectare		Changes	Production		Changes
	2019-20	2020-21		2019-20	2020-21		2019-20	2020-21	
	-- 000 hectares --		Per cent	-----Kgs ----		Per cent	-- 000 tonnes --		Per cent
Pakistan	8804.7	9168.3	4.1	2868	2996	4.5	25247.5	27464.1	8.8
Punjab	6515.3	6746.0	3.5	2978	3098	4.0	19401.9	20900.0	7.7
Sindh	1134.2	1202.5	6.0	3393	3362	-0.9	3848.1	4043.2	5.1
KPK	727.3	761.8	4.7	1554	1787	15.0	1130.3	1361.6	20.5
Baloch.	427.9	458.0	7.0	2027	2531	24.9	867.2	1159.3	33.7

Source:

Annex-I.

3.5 Important Wheat Producing Districts

19. The only Bahawalnagar and Rahim Yar Khan districts are on the top in wheat production in Pakistan they produce more than one million tonnes of wheat per annum. Districts producing more than 500 thousand tonnes per annum are Bahawalnagar, Rahim Yar Khan, Bahawalpur, Jhang, Muzaffargarh, Faisalabad, Layyah, Khanewal, Rajanpur, D.G Khan, Gujranwala, Sheikhpura, Vehari, Lodhran, Multan, Sargodha, Okara and T.T. Singh. These 18 districts produce 53 per cent of total wheat production in Pakistan while their share in area is estimated at 47 per cent. Hafizabad, Kasur, Mianwali, Bhakhar, Nankana Sahib, Sahiwal, Sialkot, Pakpattan, and M.B.Din from Punjab and Naushero Feroz, Khairpur, Shaheed Benazirabad, Khairpur, Ghotki and Sanghar from Sindh, Swat and D.I Khan from KPK, Nasirabad, Jaffarabad and Jhal Magsi from Balochistan are other important wheat producing districts in the country. Different districts production shares are given in Annex-III.

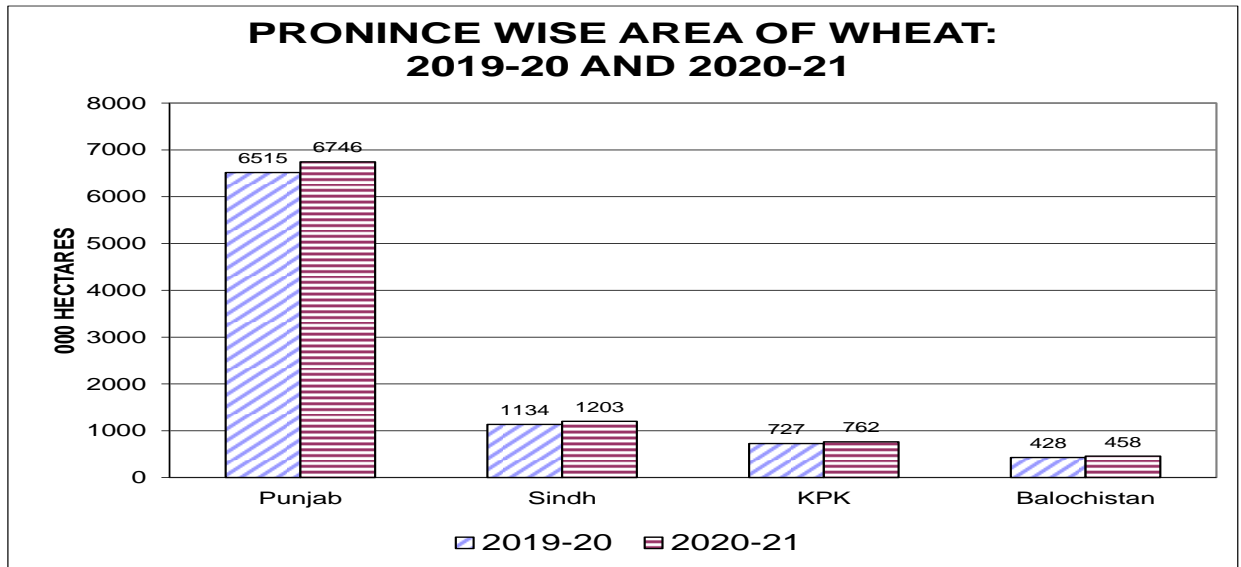


Figure-3

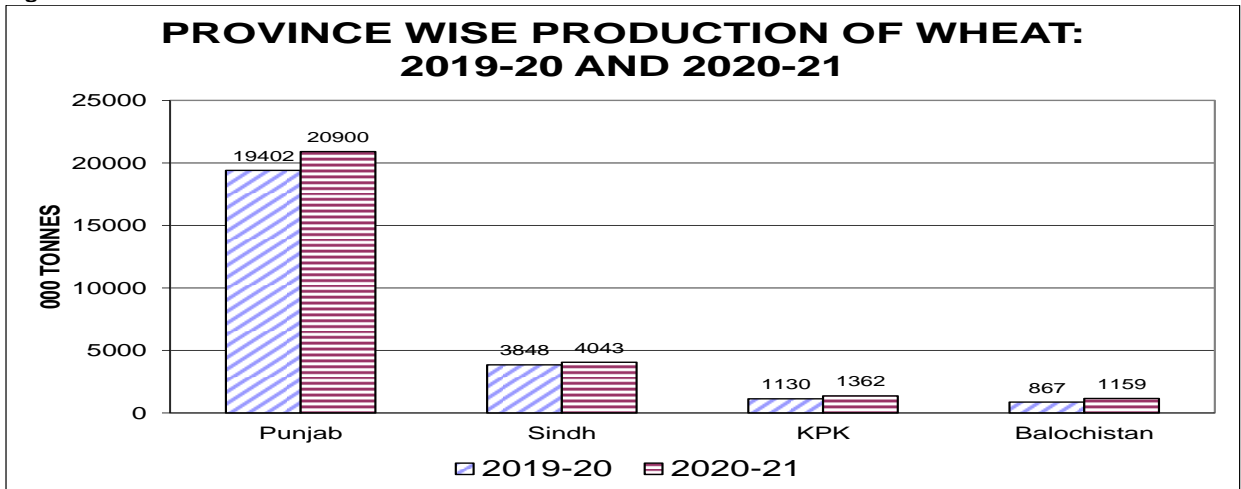


Figure-4

3.6 Targets Vs Achievements: 2020-21 Crop

20. Wheat production target for 2020-21 crop was at 27.000 million tonnes from an evidence area of 9.210 million hectares by Federal Committee on Agriculture (FCA). However, production from the 2020-21 crop is reported at 27.464 million tonnes, persuaded by 1.7 per cent against the target. The production target could be achieved due to account of 2.2 per cent in yield, however, the area of crop could not be achieved @ 0.5 percent. Provincial details on area, yield and production may be seen in Table-6 which is depicted in Figures 5 and 6.

Table-6: Targets Vs Achievements in Area, Yield and Production of Wheat: 2017-18 Crop

Country/ Province	Area		Deviation from target	Yield per hectare		Devia- tion from target	Production		Deviation from target
	Targets	Achieve ments		Targets	Achieve Ments		Targets	Achieve ments	
	000 ha		Percent	Kgs		Percent	000 tonnes		Percent
Pakistan	9210.0	9168.3	-0.5	2932	2996	2.2	27000.0	27464.1	1.7
Punjab	6560.0	6746.0	2.8	3049	3098	1.6	20000.0	20900.0	4.5
Sindh	1200.0	1202.5	0.2	3333	3362	0.9	4000.0	4043.2	1.1
KPK	900.0	761.8	-15.4	1889	1787	-5.4	1700.0	1361.6	-19.9
Balochistan	550.0	458.0	-16.7	2364	2531	7.1	1300.0	1159.3	-10.8

Sources: 1. For targets: 15th FCA meeting minutes held on 22-10-2020, M/o NFS&R, Islamabad
2. For Achievements: Annex-I.

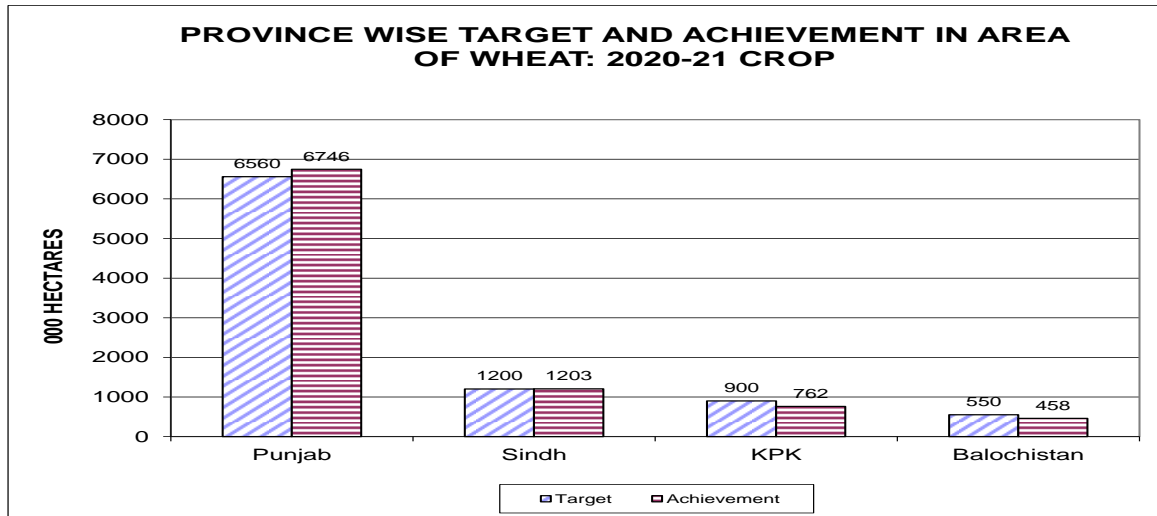


Figure-5

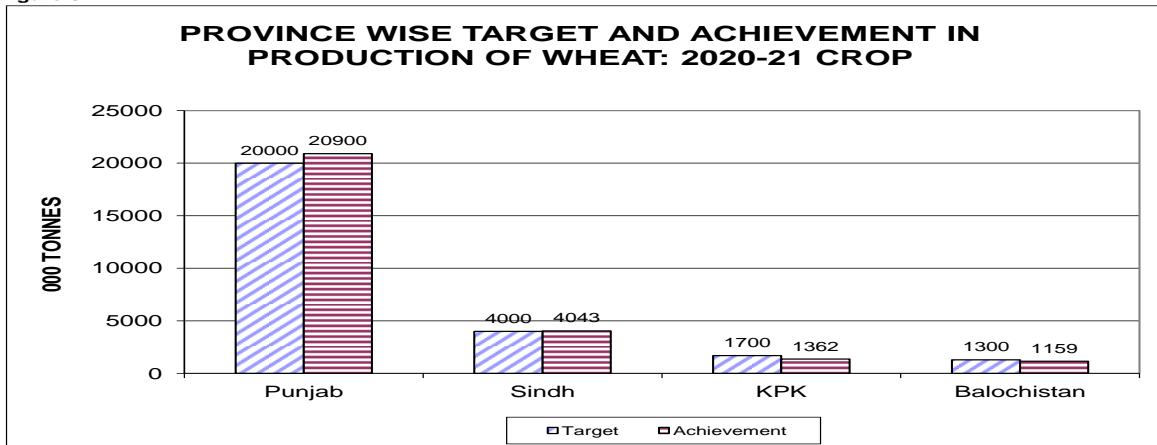


Figure-6

4. FACTORS CONSIDERED FOR PRICE POLICY ANALYSIS

21. Following major factors were considered for the analysis of the price policy of wheat 2021-22 crop:

- 4.1 Domestic Demand, Supply, Stocks and Price Situation
- 4.2 World Production, Consumption, Stocks and Trade Situation
- 4.3 International Price
- 4.4 Export or Import Parity Prices
- 4.5 Cost of Production
- 4.6 Comparative Economics of Competing Crops
- 4.7 Nominal and Real Support and Market Prices
- 4.8 Economic Efficiency of Wheat Production in Pakistan
- 4.9 Producer Prices of Wheat in Selected Countries
- 4.10 Impact of Increase in Support Price of Wheat on Consumer Price Index (CPI) and Average Household Expenditure

4.1 Domestic Demand, Supply, Stocks and Price Situation

- Domestic Demand, Supply and Stocks

22. During 2020-21, the country has produced 27.29 million tons wheat. After adding the carryover stocks of 0.73 million tons as on May 1, 2021, total wheat supply in the country for 2021-22 consumption year would be 28.02 million tones. This supply may slightly increase if production of wheat in Azad Kashmir and Gilgit Baltistan estimated at 0.27 million tones is added. Thus total availability of wheat in the country would be 28.29 million tones.

23. National requirement of wheat has been worked out on the three bases: 1. On the basis of balance sheet method. According to this method, last three years production plus last year carryover stocks plus imports minus export and carry forwarded stocks are accounted for separately and it is assumed that the remaining quantity has been consumed as food, feed, wastage and seed. On the basis of three years average, it is assumed that it is per capita consumption of the country (for detailed annex-IV) for current year it works out 115 kgs. 2. M/o National Food Security and Research is using 115 kgs per capita consumption.3. Pakistan Bureau of Statistics has reported in House Hold Integrated Economic Survey (HIES) 2018-19 that the national per capita wheat consumption has been reduced to 84 kgs per annum. The calculations are presented in Table -7.

Table-7: Domestic Requirements of Wheat for 2021-22 Wheat Year: (May-April)

S. No.	Item	Based on annual per capita Consumption on the basis of		
		M/o NFS&R	API	HIES
		115 Kgs	115 Kgs	84 kgs
1.	Population (million tonnes)	226.47	226.47	226.47
2.	Human consumption requirement (million tons)	26.04	26.04	19.02
3.	Allowance for seed, feed and wastage @ 10 per cent of total production of 2020-21 crop (million tonnes)	2.76	2.76	2.76
4.	Food Security reserves (million tonnes)	1.00	1.00	1.00
5.	Total requirement (million tonnes)	29.80	29.80	22.78
6.	Total supply (production + carry forwarded) (million tonnes)	28.29	28.29	28.29
7.	Surplus/Deficit (million tonnes)	-1.50	-1.50	5.51

Source: Annex-IV.

24. API has calculated annual per capita availability of wheat requirement/ consumption for 2021-22 for the population of 226.47 million (including population of AJK area, Gilgit Biltistan and Afghan Refugees) by using above mentioned per capita requirements. According to balance sheet method and M/o NFS&R which are at same level for the year 2021-22 is estimated at 26.04 million tones. Accounting for seed, feed and wastage @ 10 per cent of production and strategic reserve of one million, gross domestic requirement for 2021-22 is estimated at to 29.80 million tones, deficit of 1.5 million tones. However, this requirement would be 22.78 million tones if used the HIES data of 84 kgs per annum the, country will have 5.51 million tones surplus wheat.

- Post- harvest prices

Punjab

25. Monthly wholesale prices of wheat during the post-harvest months of 2020-21 crop in the major producing area markets of the Punjab is depicted in Table-8.

Table-8: Monthly Average Wholesale Prices of Wheat in Main Producing Area Markets of Punjab during Post-harvest Season of 2020-21 Crop

Markets	April	May	June	Average
	-----Rs per 40 kgs-----			
Bahawalnagar	1776	1813	1976	1855
Layyah	1821	1845	1925	1864
Khanewal	1771	1822	1917	1837
Multan	1857	1894	1952	1901
D.G Khan	1869	1834	1895	1866
RajanPur	1739	1791	-	1765
R. Y. Khan	1830	1942	1958	1910
Bahawalpur	1845	1850	1907	1867
Average	1813	1849	1933	1858

Source: Directorate of Agriculture (E&M), Lahore, Punjab.

26. The price data of wheat in table-8 shows that the monthly average wholesale prices of wheat in main producing areas of Punjab were higher than the support price of Rs 1800 per 40 Kgs during the month of April to June 2021, except Rajanpur market in the month of April-May during post-harvest period. The seasonal average has ranged between Rs 1765 to Rs 1910 per 40 kgs.

Sindh

27. In Sindh, the price of wheat were not reported by Provincial Extension Department during the post- harvest season of 2020-21

4.2 World Production, Consumption, Stocks and Trade Situation

28. The data on world production, consumption, stocks and trade situation from 2019-20 to 2021-22 are presented in Table-9.

29. The world wheat production in 2020-21 estimated at 773 million tones, 12 million tons or 1.58 per cent higher than that last year production of 761 million tons. Adding the opening stocks of 276 million tons, the world supply of wheat 2020-21 is estimated at 1049 million tons 28 million tons higher than the last year, mainly due to significantly increase in production during 2020-21 and higher last year's carryover stock, resultantly carryover stocks have been estimated to increase to 279 million tones as compared to 276 million tonnes last year's stock.

Table-9: World Wheat Situation: 2019-20 to 2021-22

Items	2019-20	2020-21 (Estimated)	2021-22 (Forecast)
 Million tonnes		
Opening stocks	260	276	279
Production	761	773	788
Total Supply	1021	1049	1067
Consumption	745	770	787
Closing stocks	276	279	280
Trade	185	190	192

Source: Grain Market Report, International Grains Council, London, 29- 7- 2021

30. International Grains Council London reported that the global wheat production in 2021-22 is forecast to increase further significantly to 788 million tons, 15 million tons or 1.94 per cent higher than last year. Accounting for the opening stocks of 279 million tons, total supply would be at 1067 million tonnes against the consumption forecast of 787 million tons in 2021-22. Thus due to continue increase in carryover stocks and production, the carryover stocks will be increased to 280 million tons, 1 million ton higher than last year stocks.

31. If the above mentioned forecast becomes true, the price of wheat in international market may decrease.

4.3 International Prices of Wheat

32. The US No 2 Hard Red Winter (HRW) wheat is considered very identical in characteristics of wheat being produced in Pakistan. The Agriculture Policy Institute has been using the HRW data for the price policy analysis. However, the data of US No 2 Soft Red Winter (SRW) is also being used for the analysis.

33. Average Fob (Gulf) prices of US Hard Red Winter from 2010-11 to 2021-22 (Jul, 21) are presented in Annex-II. The prices of US Hard Red Winter showed a volatile pattern during the period under review.

34. The prices averaged at US \$ 316 per ton during 2010-11 slightly declined in the next year and averaged at US \$ 301 per ton during 2011-12. Next year, the price recovered sharply to and averaged at US \$ 347 per tons, the highest level of price during the period under review. The world prices of HRW wheat showed a decreasing trend next four years and averaged at US \$ 197 per tons in 2016-17, the lowest level of price during the period under review. The prices started to increase and next couple of years averaged at US \$ 269 per ton in 2020-21. In current season 2021-22 (July-Sept,2021), the price is showing a decreasing trend and averaged at US\$ 338 per ton.

35. The price of Soft Red Winter has followed an almost similar pattern as of HRW during the period under review but the price of SRW which were historically lower than HRW during the period under review have surpassed the HRW Price during 2019-20 and 2021-22.

4.4 Import and Export Parity Prices

36. The import and export parity prices have been calculated on the basis of fob (Gulf) prices of US No 2 HRW and SRW wheat. The results of the calculations have been summarized in Table-10 and 11, while the detail of these calculations may be seen at Annexes VI and VIII.

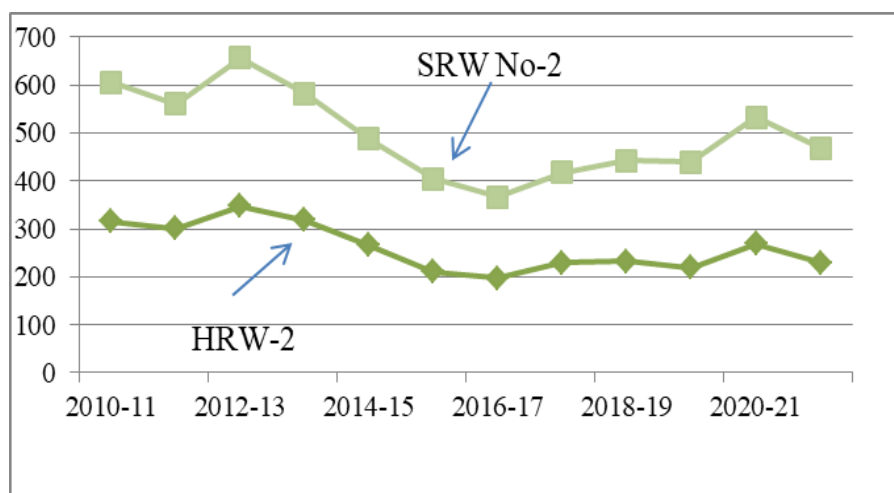


Fig.-7: Export and Import fob (Gulf) Prices of US No.2 HRW and SRW wheat

Table -10: Import Parity Price of Wheat on the Basis of US No 2 HRW and SRW fob (Gulf) Price and Future Prices of Black Sea

Item	2021-22 Jul-Sep	During 2020-21	During 2018-19 to 2020-21
Fob Gulf price of HRW (US \$ per ton)	317	269	240
Import parity price per 40 kgs of wheat:			
i) if consumed at Multan	2938	2602	2399
ii) If consumed at Karachi	2766	2430	2227
Fob Gulf price of SRW (US \$ per ton)	298	264	232
Import parity price per 40 kgs of wheat:			
i) if consumed at Multan	2805	2567	2343
ii) If consumed at Karachi	2633	2395	2171
Future Prices of Black Sea (US \$ per ton)	Oct, 2021	Nov, 2021	Dec,2021
	308	311	314
Import parity price per 40 kgs of wheat:			
iii) if consumed at Multan	2763	2784	2805
iv) If consumed at Karachi	2591	2612	2633

Source: For HRW and SRW, International Grain Council, London

Table-11: Export Parity Prices of Wheat on the Basis of No.2 HRW and SRW fob (Gulf) Price

Item	2021-22 Jul	During 2020-21	During 2018-19 to 2020-21
Fob Gulf price of HRW assuming for FOB (Karachi) price (US \$ per tonne)	317	269	240
Export parity price per 40 kgs at procurement centre	1867	1557	1369
Fob Gulf price of SRW assuming for FOB (Karachi) price (US \$ per tonne)	298	264	232
Export parity price per 40 kgs at procurement center	1744	1524	1318

4.5 Cost of Production

37. In formulating price proposals for the farm produce, the cost of production (COP) is one of the crucial considerations. However, the empirical estimation of a typical COP involves a number of conceptual and practical difficulties. These difficulties in general arise from the larger number of growers with diverse farming systems involving substantial variations in the agro-climatic conditions, cropping pattern, use level of inputs, adoption of farm technologies, cultural practices etc, resulting in varying crop yields and unit cost of production.

38. The cost of production of wheat for 2021-22 crop in the Punjab and Sindh have been estimated by adopting the input-output parameters used in the 2020-21 Wheat Policy Analysis Report along with the latest inputs prices and custom hiring rates of cultural operations, collected through mini field survey conducted by the API during July 2021 in the major wheat growing areas of the Punjab and Sindh. The inputs prices and custom hiring rates were also supplemented with the information provided by the representatives of the Provincial Governments and Farmers' Associations in the meeting of the API's Committee on wheat, held on August, 2021 at Islamabad. The details of the COP estimates for the Punjab and Sindh for 2020-21 and 2021-22 crops are presented at Annex-VIII and IX, respectively while the summary of these is presented in Table-12.

Average Farmers' Cost of Production of Wheat: 2020-21 and 2021-22 Crops

39. The cost of production estimates of wheat in the Punjab and Sindh for 2020-21 and 2021-22 crops are summarized and presented in Table-12.

Table-12: Average Farmers' Cost of Production of Wheat: 2020-21 and 2021-22 Crops

Items	Unit	2020-21 crop	2021-22 crop	Increase/decrease in 2021-22 over 2020-21
Punjab				
1. Cost of cultivation	Rs/acre	53313	58991	5678
2. Yield				
a) Yield in kgs	Kgs/acre	1120	1200	80
b) Yield in maunds	40 kgs/acre	28	30	2
3. Cost of production at farm level	Rs/40 kgs	1547	1637	90
4. Marketing cost	Rs/40 kgs	40	40	0
5. Cost of production at market/ procurement centre				
a) With land rent	Rs/40 kgs	1587	1677	90
b) Without land rent	Rs/40 kgs	989	1010	22
Sindh				
1. Cost of cultivation	Rs/acre	54556	62486	7931
2. Yield				
a) Yield in kgs	Kgs/acre	1220	1300	80
b) Yield in maunds	40 kgs/acre	31	33	2
3. Cost of production at farm level	Rs/40 kgs	1494	1643	149
4. Marketing cost	Rs/40 kgs	45	45	0
5. Cost of production at market/ procurement centre				
a) With land rent	Rs/40 kgs	1539	1688	149
b) Without land rent	Rs/40 kgs	998	1118	121

Source: Annex-VIII and IX.

Punjab

40. The expected cost of cultivation of one acre of wheat in the Punjab during 2021-22 crop year is likely Rs 58991 including land rent (Table12). The cost of producing wheat at farm gate is worked out at Rs 1637 per 40 kgs, provided that average yield is 1200 kgs per acre. Accounting for the marketing charges @ Rs 40 per 40 kgs, the market/procurement center level cost of production comes out to Rs 1677, high by Rs (5.7 %) than the corresponding cost of Rs 1587 in 2020-21.

Sindh

41. Cost of set down one acre of wheat in Sindh during 2021-22 crop is likely to be Rs 62486, inclusive of land rent. Distributing this cost over the average yield of 1300 kgs per acre, the farm level cost of production comes to Rs 1643 per 40 kgs. Adding marketing cost @ Rs 45 per 40 kgs, the cost of producing and delivering 40 kgs wheat at market/procurement center level would be Rs 1688, reflecting an increase of Rs 149 (10%) over the last year's corresponding cost of production.

42. The increases in the cost of production of wheat for the 2021-22 crop in the Punjab and Sindh over the last year's cost are mainly attributed to the inclined hiring rates of land rent, fertilizers, harvesting & threshing, land preparation and seed and sowing operation. Moreover, the diminution in other inputs has also added substantially to the increase in cost of production of wheat for 2021-22 crop.

Cost of major farm inputs and operations

43. The cost of major operations and farm inputs in the total cost of cultivation of wheat in the Punjab and Sindh during 2020-21 and 2021-22 crops along with percent changes therein is presented in Table-13.

Punjab

44. The land rent, Fertilizer including FYM and TPT & Application and Harvesting and threshing are the major component in gross cost of cultivation of wheat in the Punjab during 2021-22 crop year, accounting for 40.7, 25.6 and 17.4 per cent. The other ingredients are as: Seed and sowing operations (12.3%), Land preparation (9.4%) and Irrigation (8.3%), Others (3.6%) and Plant protection and Interculture (2.8%).

Sindh

45. In Sindh, the land rent and Fertilizer including FYM and TPT & Application and Harvesting and threshing is also the major constituent in the total cost of cultivation during 2021-

22 crop season, accounting for 37.8, 24.3 and 18 per cent. The other components of the cost of cultivation are: Seed and sowing operations (12.7), Land preparation (12.0%), Irrigation & WCC (7.7), Others also (3.8%) and Plant protection/Interculture (2.5%).

Table-13: Cost of Major Farm Operations/Inputs of Wheat: 2020-21 and 2021-22 Crops

Operations/inputs	2020-21 crop	Share in Percent	2021-22 crop	Share in Percent	Share in increased/ decrease cost
	---Rs/acre---				Per cent
Punjab					
Land preparation:	3,700.00	8.54	4,600.00	9.37	24.32
Seed and sowing operations:	6,409.13	14.80	6,050.00	12.32	-5.60
Plant Protection & Interculture	1,300.00	3.00	1,350.00	2.75	3.85
Irrigation & WCC	3,920.80	9.05	4,062.50	8.27	3.61
Fertilizers, FYM & Tpt/Application	8,583.08	19.82	12,593.14	25.64	46.72
Harvesting & threshing	7,348.05	16.97	8,550.00	17.41	16.36
Land rent	16,750.00	38.67	20,000.00	40.72	19.40
Other costs (Mark-up, L.Tax)	1,674.78	3.87	1,785.34	3.64	6.60
Net cultivation cost	43,312.64	100.00	49,111.37	100.00	13.39
Yield per acre (kgs)	1,120.00		1,200.00		7.14
Cost of production at market/ procurement Centre	1,586.88		1,677.05		5.68
Sindh					
Land preparation:	7,400.00	16.24	6,350.00	12.00	-14.19
Seed and sowing operations:	6,370.58	13.98	6,720.00	12.70	5.48
Plant Protection & Interculture	1,179.10	2.59	1,300.00	2.46	10.25
Irrigation & WCC	3,643.80	8.00	4,083.90	7.72	12.08
Fertilizers, FYM & Tpt/Application	9,033.50	19.83	12,855.00	24.30	42.30
Harvesting & threshing	6,606.60	14.50	9,500.00	17.96	43.80
Land rent	16,500.00	36.22	20,000.00	37.80	21.21
Other costs (Mark-up, L.Tax, Mgnt)	1,732.78	3.80	1,999.34	3.78	15.38
Net cultivation cost	45,555.68	100.00	52,908.24	100.00	16.14
Yield per acre (kgs)	1,220.00		1,300.00		6.56
Cost of production at market/ procurement Centre	1,538.63		1,672.95		8.73

- Notes:**
1. Rounding of figures may result in slight deviation;
 2. Others include mark-up, management charges, land tax and drainage cess;
 3. Figures in parenthesis are percent shares in total cost of cultivation.

Source: Annex-VIII & IX.

4.6 Comparative Economics of Wheat and Competing Crops

46. Farmers allocate farm resources among the various competing farm enterprises keeping in view certain economic indicators more specifically output-input ratio, gross cost, gross income, gross margin, net income, returns to purchased inputs, revenue per acre-inch of irrigation water and revenue per day of crop duration, etc. These indicators provide useful insights about the options farmers consider before deciding on allocation of land and other resources. Largely, the farm management data and output-input prices help in constructing the indicators, which change over time and space, necessitating due care in the empirical estimation.

47. Wheat is grown under both the irrigated and rain-fed conditions throughout the country. Over 90 per cent of the production at the country level, however, comes from the irrigated regions where it competes with oilseed crops like canola and spring sunflower. It also faces indirect competition from sugarcane, an annual crop competing against both 'rabi' and 'kharif' crops. In such a situation, wheat combination with 'kharif' crops would need to be considered. The likely combinations in this context could be basmati + wheat, IRRI + wheat, cotton + wheat, cotton + sunflower and IRRI + sunflower.

48. The economics of wheat and competing crops has been analyzed in terms of output and input prices received and paid by the growers during 2020-21 at farm level.

Punjab

49. A summary of the analysis of various economic indicators reviewed particularly the output-input ratio and revenue per rupee of purchased inputs cost, day of crop duration and unit of irrigation water for the Punjab is given in the following lines.

Table-14: Economics of Wheat and Competing Crops at Prices Realized by the Growers in the Punjab: 2020-21Crops

Province / crops /crop combination	Output-input ratio	Revenue per:		
		Rupee of purchased inputs cost	Crop day	Acre-inch of water used
	Rupees.....		
Wheat	1.13	3.6	336	5033
Sunflower (spring)	1.33	3.9	413	3375
Canola	1.71	7.1	358	4950
Cotton + wheat	1.15	3.5	357	4414
Cotton + sunflower	1.24	3.6	390	3726
Basmati + wheat	1.14	2.7	370	1904
IRRI + wheat	1.07	2.7	349	1698
Sugarcane	1.32	4.1	411	3376

Source: Annex-XI

50. Wheat crop has shown relatively lower performance during 2020-21 and farmers received a small margin over the cost of wheat production (13 %). In Punjab, Wheat has performed low against the sunflower in terms of Output-input ratio, however, better in terms of returns to irrigation water. Sunflower has out-performed wheat in rest of the economic criteria. Canola has given better rewards over wheat and sunflower in terms of returns to overall investment and purchased inputs.

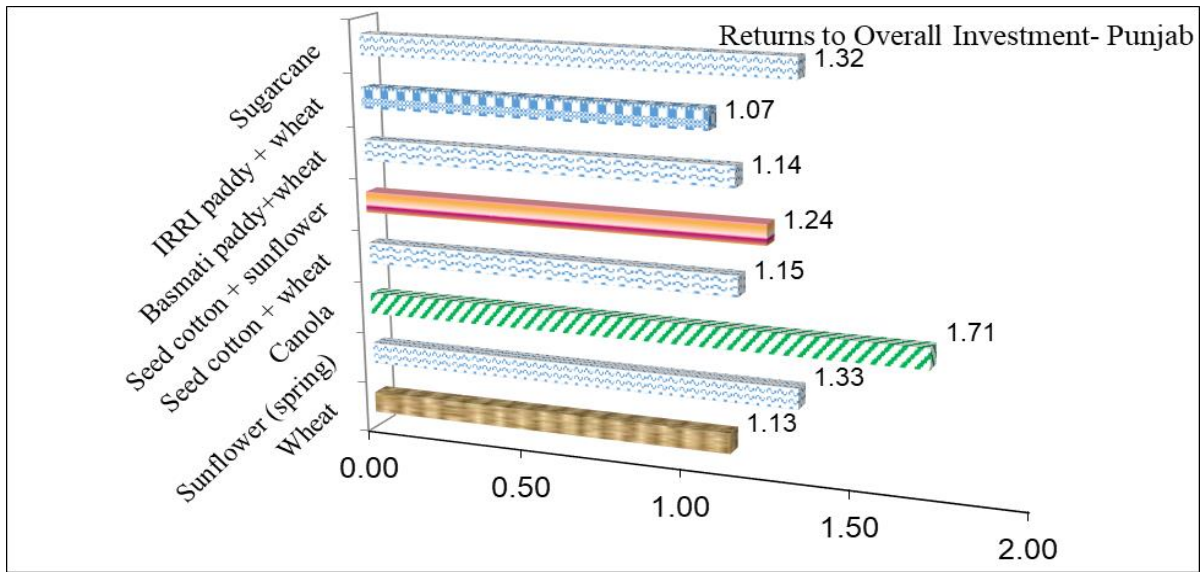


Fig - 8: Returns to Overall Investment in Punjab

51. Canola crop has been out-competed by the wheat in terms of irrigation water. While Canola has out-competed sunflower crop in all the economic criteria, except crop duration with a considerable margin.

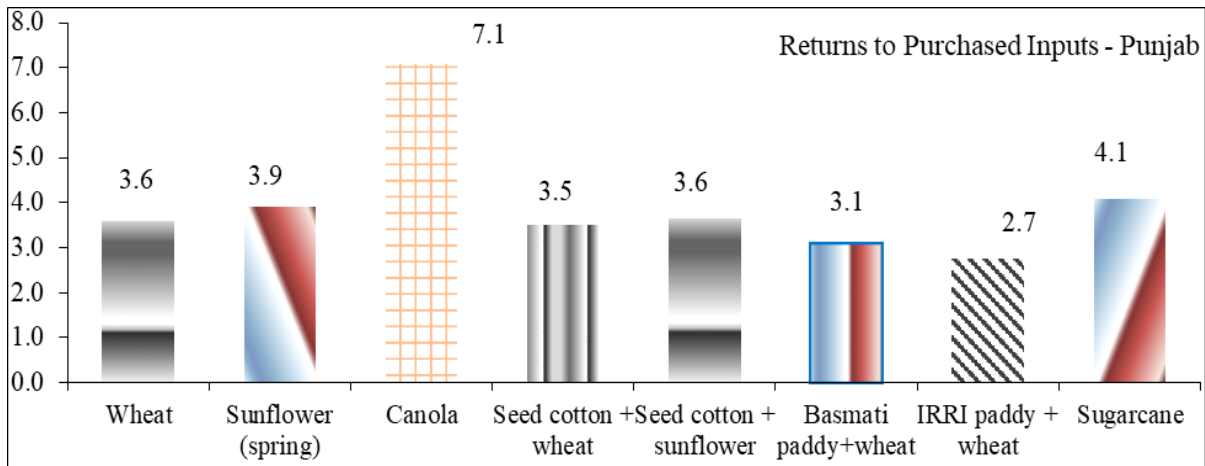
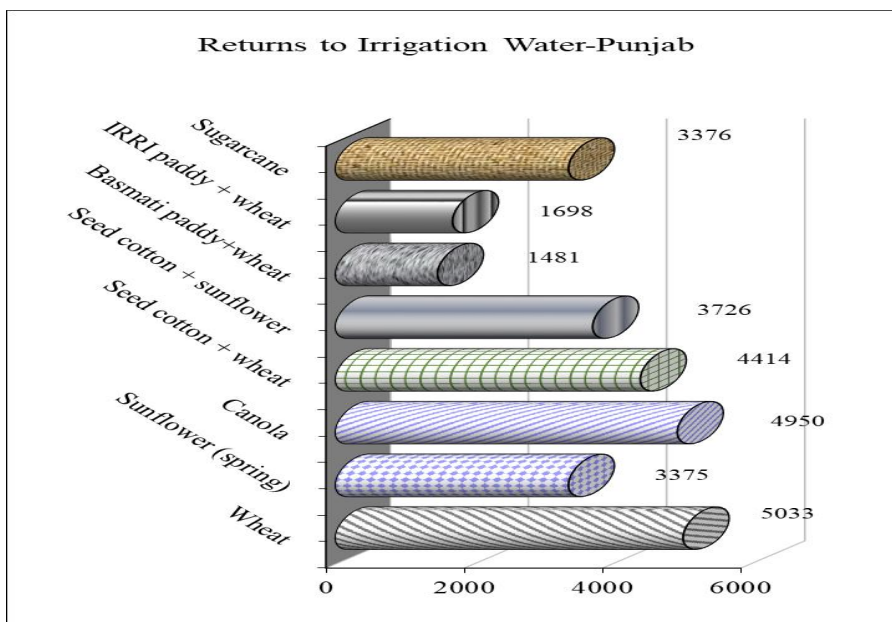


Fig - 9: Returns to Purchase Input – Punjab

52. Under the indirect competition scenario, wheat combinations with Rice varieties performed lower in terms of all the economic criteria adopted in this analysis. The sugarcane, on the other hand, did well as compared to all the crop combinations in terms of returns to overall investment and the rest of criteria. However, Sugarcane lagged behind cotton combinations with wheat and sunflower in the returns to irrigation water.

53. The rice combinations were out-competed by sugarcane in terms of all the economic indicators. In terms of returns to irrigation water, the economic position of cotton combinations remained better amongst all the crop combinations.



54. Wheat's position viz a viz oilseed crops, both under the direct and indirect competition, is much better in terms of irrigation water than all the crops and crop combinations.

Fig-10: Returns to Irrigation Water (Punjab)

Sindh

55. Economics of wheat and competing crops has been analyzed at prices realized by the growers in Sindh for crop season 2020-21 against various economic indicators including the output-input ratio and revenue per rupee of purchased inputs cost, day of crop duration and unit of irrigation water. The findings of the analysis are presented below:

56. In Sindh, the returns to overall investment in wheat crop remained lower than 'rabi' oilseed crops Sunflower and canola during 2020-21. However, in respect of other economic indicators, crop duration and irrigation water, wheat has performed better than the two oilseeds with big margin. Canola performed much better than both wheat and sunflower. Amongst the oilseeds, Canola's position was better than Sunflower with respect to returns to overall investment and other remaining indicators except crop duration.

Table-15: Economics of Wheat and Competing Crops at Prices realized by the Growers in Sindh: 2020-21 Crops

Province / crops / crop combination	Output-input ratio	Revenue per:		
		Rupee of purchased inputs cost	Crop day	Acre-inch of water used
	Rupees.....		
Wheat	1.28	4.0	389	5833
Sunflower (spring)	1.30	3.6	288	2360
Canola	1.57	5.8	275	3803
Cotton + wheat	1.20	3.6	387	5414
Cotton + sunflower	1.19	3.4	344	3608
IRRI + wheat	1.39	3.9	406	2151
IRRI + Sunflower	1.42	3.8	356	1643
Sugarcane	1.32	4.1	313	2152

Source: Annex-XI.

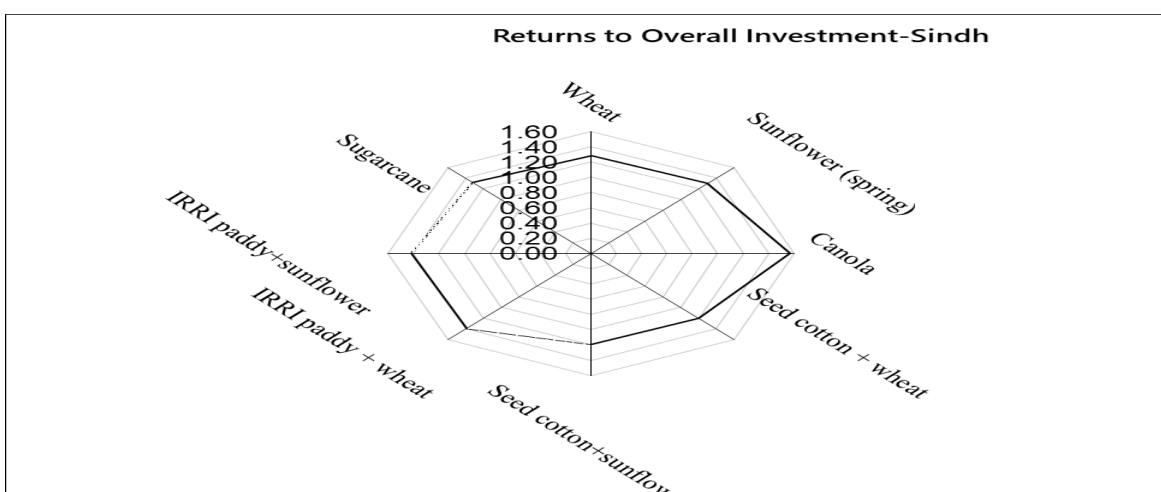


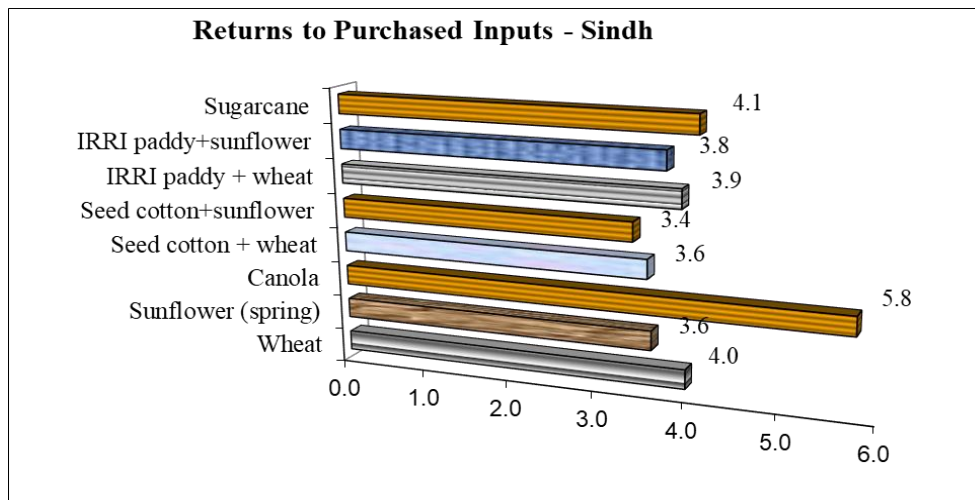
Fig - 11: Returns to Overall Investment in Sindh

57. The above results indicate that in case of direct competition, wheat has an increasing competition to gain its position amongst the competing crops like oilseeds, thus a demand for improvement in its productivity and to remain a rewarding crop.

58. In case of indirect competition, a mixed situation is being observed across the crop combinations, certain crops performed better in various indicators but remaining behind in others. Wheat combination with cotton out-performed sugarcane in terms of returns to crop duration and irrigation water used.

59. Sugarcane performed lower than wheat crop combination with IRRi in respect of returns to overall investment and crop duration while performed better in terms of rest of the crop combinations. Wheat combination with cotton and cotton + sunflower remained profitable in terms of irrigation water over the other combinations. In terms of returns to irrigation water, Cotton combinations show a wider difference over sugarcane and rice. IRRi combinations, however, paid lower returns to the investment by the grower against the sugarcane in terms of purchased inputs and irrigation water.

60. In summary, wheat's performance against competing crops has been presenting a mixed scenario, particularly gaining edge over oil-seed crops in terms of crop duration and irrigation



water used.

Similarly, wheat combinations with cotton and rice also performed better than sugarcane in terms of various economic indicators analyzed.

Fig - 12: Returns to Purchased Inputs – Sindh

61. This situation indicates that growers are getting relatively a rewarding price for their produce. Although wheat support price was enhanced considerably by the provincial government of Sindh (Rs. 2000/40 kgs) however, an increased price of oilseeds was also reported which helped them performing better in some of the factors. Government's emphasis on crop diversification, beside ensuring food security in the country, and to shift gradually to other high value crops including oilseeds are appropriate to ensure improved economic conditions of the farming community.

4.7 Nominal and Real Prices of Wheat

62. The purchasing power of a certain commodity is influenced by the fluctuations in its price in relation to general price level in the economy. Such variations in the price also affect the welfare and real income of its producers. To ascertain overtime changes in the purchasing power of wheat, the nominal support and market prices of the crop during 2015-16 to 2020-21 have been deflated by the corresponding Consumer Price Index (CPI), the most common measure of inflation in the economy.

4.7.1 At Support Prices of Wheat

63. The analysis in terms of nominal and real support prices for the period 2015-16 to 2020-21 is presented in the Table-16.

64. The nominal support price of wheat was Rs1300 per 40 kgs in 2015-16. A stagnant price of wheat in nominal terms i.e. Rs1300 remained constant consecutively in the three years 2016-17 – 2017-18 and 2018-19. In 2019-20 the nominal support price is increased at Rs 1400 per 40 kgs, its more, increased in 2020-21 at 1800 per 40 kgs. Higher trend in CPI pushed back the real worth of crop which is illustrated by the declining trend in the real price line in next three years in a row (Fig-13). The real support price of wheat for 2020-21 crop estimated at Rs1277.8 per 40 kgs, showing a decline by (-1.70) per cent over the base year real price of Rs1300 per 40 kgs. Although the support price has been increased 29 per cent and farmer has received good prices as compared to last year.

Table-16: Nominal and Real Support Prices of Wheat in Punjab: 2015-16 to 2020-21

Year	Consumer Price Index (CPI)	Support Prices	
		Nominal	Real
	2015-16=100	Rs/40 Kgs	
1	2	3	4=(3/2)x100
2015-16	100.00	1300	1300.0
2016-17	104.81	1300	1240.3
2017-18	109.72	1300	1185.3
2018-19	117.18	1300	1109.4
2019-20	129.76	1400	1079.8
2020-21	140.96	1800	1277.8

Source: Pakistan Economic Survey: 2020-21

65. It is illustrated in Fig-13 that real worth of the wheat crop is on continuous decline since 2015-16. As indicated previously, the issue of this deterioration in real purchasing power of wheat is observed, which is a major point of concern for future food security.

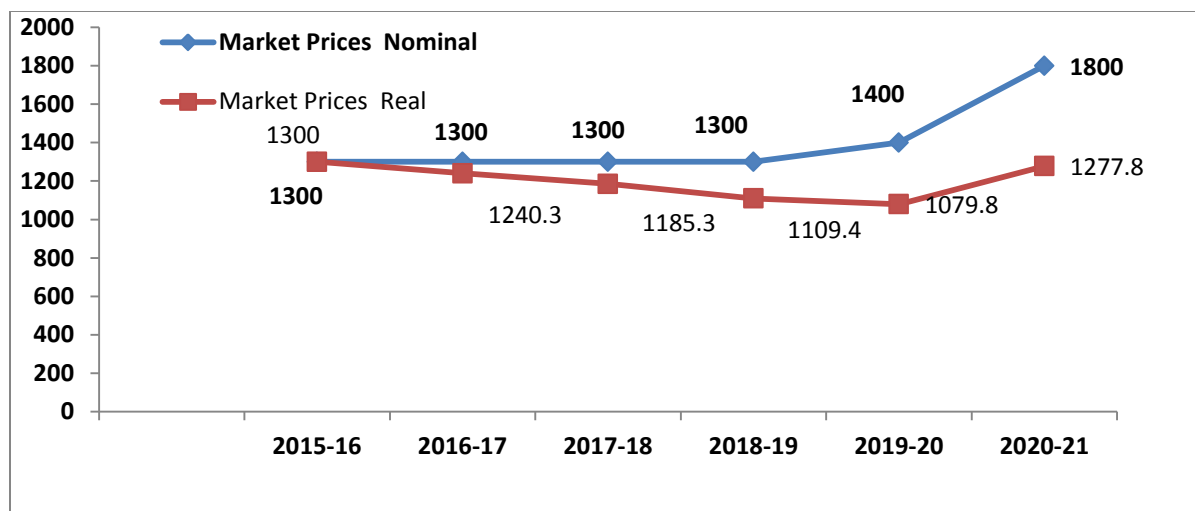


Fig-13: Nominal and Real Support Price of Wheat.

4.7.2 Market Prices of Wheat

66. The analysis in terms of real and nominal average market prices for the period 2015-16 to 2020-21 is set out in Table-17.

Table-17: Nominal and Real Market Prices of Wheat in Sindh: 2015-16 to 2020-21

Crop year	Consumer Price Index (CPI)	Market Prices	
		Nominal	Real
	2015-16=100	Rs/ per 40 Kgs	
1	2	3	$4=(3/2) \times 100$
2015-16	100.00	1206	1206.0
2016-17	104.81	1180	1126.4
2017-18	109.72	1190	1084.5
2018-19	117.18	1220	1041.1
2019-20	129.76	1468	1131.3
2020-21	140.96	1950	1383.3

- Sources:** i) For CPI, Economic Survey of Pakistan: 2020-21. CPI has been worked out to 12 months on the basis of last year.
ii) For Market prices, Directorates of Agriculture, Government of the Punjab and Sindh (Average of major producing markets) (weighted average).

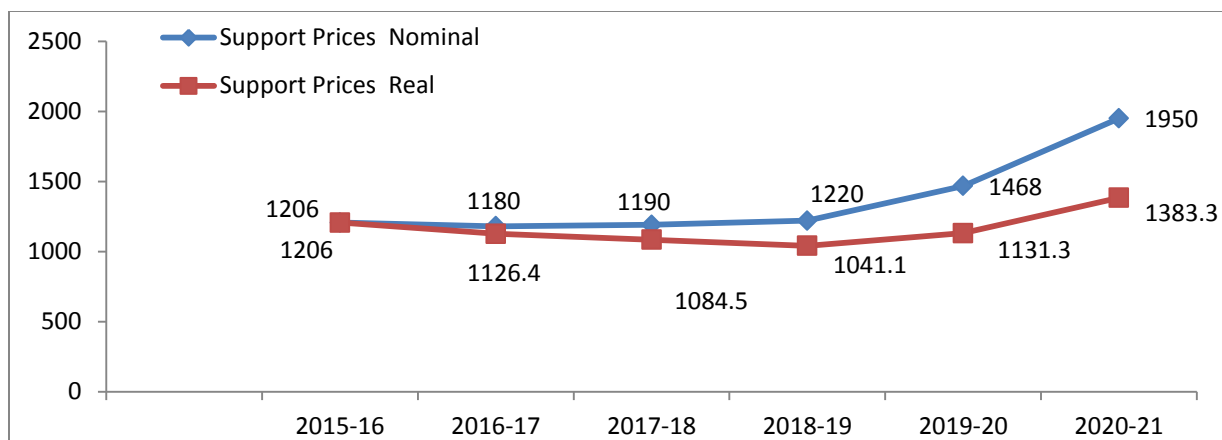


Fig.14: Nominal and Real Market Prices of Wheat

67. Market prices of wheat have evidenced a consecutive change during the entire period under review. These prices remained lower than the support price throughout the period except last consecutive two years. However, the nominal market price took upward trend. In 2020-21, the real value of wheat increased at 1383.3 per 40 kgs. The average nominal market price of wheat has evidenced 62% increase against the base year during the period under review. On the other hand, the real value has increased by (14.70 per cent) mainly for the rise in CPI by 40.96% during this period.

68. The real market value of wheat remained below the nominal value during the entire period under study. As depicted in Fig-14, the absolute gap between both the prices widened with increasing rate as the years passed over. This widening gap between the two prices indicates that farmers are on the losing end of the game with context to the real purchasing power of the biggest commodity of the economy.

69. If the market prices had averaged at Rs 1900 per 40 kgs, the farmers would have gained the real purchasing power equivalent to the level of the support price of Rs. 1800 announced for 2020-21 crop.

4.8 Economic Efficiency in Wheat Production

70. In Pakistan wheat is important from both farmer as well as consumer point of view. A vast majority of farmers cultivate wheat and the crop occupies maximum of the cropped area of the country.

71. Considerable economic resources are employed in wheat cultivation. Some of these are purchased with cash and are called traded inputs while others are called non-traded inputs because these are not purchased with cash. Traded inputs include seed, fertilizer, machinery, hired labour, tube well water etc. while non-traded inputs comprise family labour, management

charges, land rent and interest on capital. Economic efficiency of the referred resources used for producing wheat is normally assessed through three indicators. These are Nominal Protection Coefficient (NPC), Effective Protection Coefficient (EPC) and Domestic Resource Cost Coefficient (DRC). Their definitions and estimates are described in detail in the following paragraphs.

4.8.1 Nominal Protection Coefficient (NPC)

72. NPC is the ratio of the market price to the social price of a commodity. It examines the impact of domestic market price of a crop ignoring distortions in the input prices. As a rule of thumb if NPC is greater than one it means that local producers are protected through produce pricing policy. If it is less than one it implies implicit taxation to growers rather than protection through the produce pricing policy. Implicit taxation to a crop means outflow of resources from that crop.

73. Nominal Protection Coefficients (NPCs) for wheat under import scenario are produced in Table-. It is evident from the data in the referred table that NPC values for Punjab province remained less than one in 2015-16 and 2018-20 the period under analysis. It ranged between 0.71 and 1.12. Its main reason is that international price of wheat dropped during 2016-17 and 2017-18.

74. Similarly, NPC numeric for Sindh province also remained less than one in 2015-16 and 2018-20. It ranged between 0.75 and 1.12. It's also the main reason is that the international price of wheat dropped during 2016-17 and 2017-18.

75. NPC values under export scenario remained greater than one the period under analysis. It indicates that domestic input prices and the open market price of wheat do not offer favourable prospects for wheat export from Pakistan.

Table 18- Nominal and Effective Protection Coefficients for Wheat under Import Scenario

Year	NPC	EPC	NPC	EPC
	Punjab		Sindh	
2015-16	0.94	1.07	0.97	1.00
2016-17	1.12	1.56	1.12	1.32
2017-18	1.03	1.00	1.03	1.15
2018-19	0.85	0.78	0.85	0.83
2019-20	0.71	0.62	0.75	0.77
2020-21	0.89	0.81	0.93	1.02

Table 19- Nominal and Effective Protection Coefficients for Wheat under Export Scenario

Year	NPC	EPC	NPC	EPC
	Punjab		Sindh	
2015-16	1.66	5.09	1.71	5.21
2016-17	1.33	2.29	1.33	1.87
2017-18	1.67	2.00	1.68	3.63
2018-19	1.35	1.46	1.36	2.03
2019-20	1.15	1.15	1.16	1.63
2020-21	1.42	1.53	1.42	2.28

4.8.2 Effective Protection Coefficient (EPC)

76. Dissimilar NPC, EPC is the ratio of the difference between the revenue and the cost of tradable inputs at the private prices and the difference between the revenue and the tradable inputs cost at social prices. Thus EPC is the indicator of the net incentive and disincentive effects of all policies affecting prices of tradable inputs and output. EPC greater than one means that private profit is higher than that would be without government intervention in the input/output markets. In distinction EPC less than one indicates that net effect of policies which change prices of inputs and output reduces private profit in wheat cultivation. In the former case, there is domestic protection to the producers of wheat while in the latter case the producers are indirectly taxed which depresses domestic production.

77. Table- and Table-20 present EPC estimates for wheat. Under the import scenario, EPC coefficients remained less than one for Punjab from 2018-19 to 2020-21 (which may be due to relatively less increase in input prices as compared with the price of wheat).

78. It is observable from the data in the referred tables that NPC and EPC estimate increased during 2017-18 over 2016-17. Its main reason is the decline in the international price of wheat during 2016-17. The international market price of wheat in 2017-18 was US\$ 229/ tonne which decreased to US\$ 197/ tonne in 2016-17. As social prices of wheat and production inputs are based on import and export price of wheat which are derived from the international price, NPC and EPC estimates change accordingly.

Table -20: DRC Coefficients for Wheat in Pakistan

Year	Under Import Scenario		Under Export Scenario	
	Punjab	Sindh	Punjab	Sindh
2015-16	1.00	0.94	4.77	4.88
2016-17	1.48	1.12	2.17	1.58
2017-18	0.95	1.03	1.90	3.25
2018-19	0.73	0.77	1.38	1.88
2019-20	0.57	0.66	1.05	1.41
2020-21	0.57	0.78	1.08	1.74

4.8.3 Domestic Resource Cost Coefficient (DRC)

79. DRC is the ratio of the social cost of domestic factors to value-added at social prices. If DRC is less than one it implies comparative advantage as the domestic production can save foreign exchange at costs less than the corresponding cost of imports. When DRC is greater than one, it indicates a comparative disadvantage in domestic production as in such situations import of a commodity is cheaper. However, it should be noted that DRC varies with changes in the opportunity cost of non-tradable inputs as well as the social value of output. Based on cost of production of an average farmer and import prices of wheat, DRC for Punjab and Sindh are estimated and produced in Table-20. Detailed data on private and social profitability for the study period are produced in Annexes- XII to XIII.

Table -21: Domestic Resource Cost Coefficient (DRC) for Wheat in Punjab and Sindh Provinces

Year [1]	Under the import situation		Under the export situation	
	Punjab [2]	Sindh [3]	Punjab [4]	Sindh [5]
2015-16	1.00	0.94	4.77	4.88
2016-17	1.48	1.12	2.17	1.58
2017-18	0.95	1.03	1.90	3.25
2018-19	0.73	0.77	1.38	1.88
2019-20	0.57	0.66	1.05	1.41
2020-21	0.57	0.78	1.08	1.74

80. It is noticeable from data in the Table-21 that under import scenario Domestic Resource Cost Coefficients (DRCs) are substantially less than one which indicates Pakistan's comparative advantage in wheat production. In other words, domestic resource cost would be less than the corresponding import cost in case we have to import wheat. Therefore, it would be an economic suggestion to invest in wheat production at home rather import.

81. On the other hand under export situation DRC coefficients do not indicate comparative advantage as most of the time these have happened to be greater than one. It implies that Pakistan should not promote wheat production for export.

4.9 Support Price of Wheat in Selected Countries

82. The price policy for wheat is being adopted by various countries in varying degrees. Australian Wheat Board deals in part of the produce through Pool Pricing without any state intervention. The data on the minimum guaranteed produced prices of wheat for 2018-19 to 2020-21 crop in main producing countries are given below:

83. The producer prices of wheat in China, remained higher than support price of wheat in Pakistan and also in other countries, during the last 3 years. India is showing a decrease in MSP of wheat in both currencies terms. In USA, the crop insurance pricing has increased to USD \$ 3.4 per tonne last year. In Pakistan, the Support Price increased during the period under review, mainly supported to big harvests, increase cost of input materials and price of the commodity in the international markets.

Table -22: Support Price of Wheat in Selected Countries

Country	2018-19	2019-20	2020-21
Australia (1)	1,358	1,417	1751
China(2)	2,014	2,001	2260
India(3)	1,615	1,725	1975
USA(4)	1,156	1,020	1571
Brazil(5)	1,040	1,379	1154
Pakistan	1,300	1,400	1800

Sources:

- (1) <https://www.awb.com.au/daily-grain-prices>
 (2,3,5) <https://apps.fas.usda.gov/newgainapi/>
 (4) <https://www.ag360insurance.com/crop-insurance-pricing/>

a) Exchange Rate : \$ 1 = PKR 161.9699, Pakistan Economic Survey-2020-211

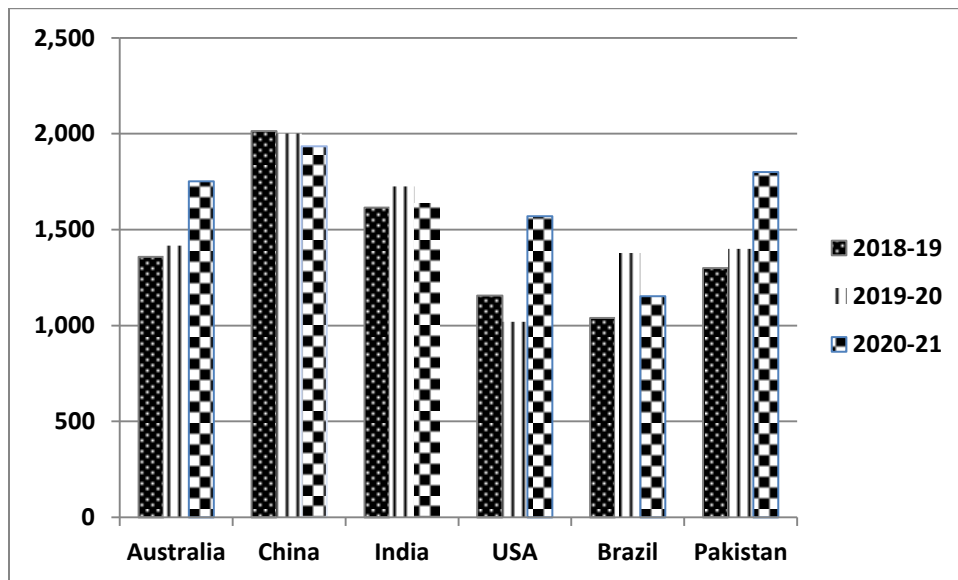


Fig.15: Support Price of Wheat in Selected Countries

4.10 Impact of Increase in Support Price of Wheat on Consumer Prices Index (CPI) and Average Household Expenditure

84. Expenditure on wheat has a fairly large share in average household budget. Accordingly, wheat and its products are included in the basket of goods used in estimating the Consumer Price Index (CPI). The support price of wheat affects both the household expenditure and CPI via consumer prices of wheat flour and its products. Any change in the price of wheat and general price level in the economy impacts on the household budget. The details of analysis are presented in Annex-XIV, while a summary of the results is provided in Table-23. Major findings of the analysis are discussed as under:

4.10.1 Impact on CPI

85. The Pakistan Bureau of Statistics (PBS) has estimated changes in CPI as a result of increase in support price of wheat and wheat flour over the existing level of Rs 1800 per 40 kgs in 2020-21. The analysis is based on the assumption that the market prices of wheat and wheat flour would increase in the same proportion as the support price. The impact of increase in the support price of wheat on CPI and average household expenditure are given in Table-24.

86. It is evident from the Table-24 that increase of Rs50 per 40 kgs over the existing support price of wheat is expected to raise the CPI by 8.67 per cent, other things remaining the same. In case the support price of wheat is enhanced by Rs100, Rs 150 and Rs200 per 40 kgs, the CPI is likely to rise by 8.78, 8.89 and 9.01 per cent, respectively.

87. The above analysis is predicted on the assumption that prices of wheat flour and other products would increase in the same proportion as that of wheat. Moreover, increase in the CPI analyzed above is the direct effect of increase in support price of wheat. The indirect and multiplier effects, if any, resulting from the increase in support price of wheat should be over and above the estimated changes in CPI.

4.10.2 Impact on Household Expenditure

88. According to the Household Integrated Economic Survey (HIES) 2018-19 by the PBS, the average household in Pakistan consists of 6.34 members. Taking the annual per capita consumption of wheat at 115kgs and average household size of 6.34 members, the impact of selected increases in the support price of wheat on the average household expenditure has been estimated in Annex-XIV and summarized in Table-24.

Table-23: Impact of Increase in Wheat Prices on CPI and Average Household Expenditure

Support price	Wheat price PBS	Rise in CPI		Increase in annual expenses on the basis of average per capita wheat availability @ 115kgs per year	
		10 kgs	40 kgs	Per person	Per household**
Rs per 40 kg	Rs per 10 kg	Per cent		----- Rupees -----	
*1800	530.2	-	-	-	-
1850	545.0	0.07	8.67	144	913
1900	559.7	0.09	8.78	287	1820
1950	574.4	0.11	8.89	431	2733
2000	589.1	0.13	9.01	575	3646
2050	604.2	0.14	9.12	719	4559
Sources:	1.Pakistan Bureau of Statistics (PBS), Islamabad. 2.Annex-XIV *Existing price for 2021-22 wheat crop. **HH Size 6.34 as in HIES 2018-19 @ As Recommended by API.				
Note:	Impact of wheat price has been calculated by assuming incremental charges of Rs .50/- per 40 kg of July ,2021.				

89. According to the above analysis, every increase of Rs 50 in the support price of wheat over the existing level of Rs 1800 per 40 kgs in 2020-21 would increase the annual expenditure by Rs144 per person and Rs913 per average household, other factors remaining constant. While the monthly expenses on wheat consumption due to every increase of Rs50 per 40 kgs in the support price of wheat would rise by Rs12.5 per person and Rs79.25 per household. Likewise, the increase of Rs 100 per 40 kgs over the existing support price would bring additional expenditure of Rs575 per capita per year and Rs3646 per household. The above results are based on the assumption that increases in the support price of wheat are proportionately reflected in prices of wheat flour and other wheat products.

5. CONSULTATIVE MECHANISM IN PRICE FORMULATION OF WHEAT

90. Annual meeting of the API Committee on wheat was held on 26th August 2021. The meeting was presided by the Honorable Syed Fakhar Imam, Federal Minister for National Food Security and Research in the Ministry of NFS&R, Islamabad and attended by the representatives of the wheat growers, growers' associations, chambers of agriculture, crop experts, policy makers and officials of the Federal and Provincial Governments concerned with wheat production and marketing. The meeting discussed the issues relating to production and marketing of wheat including prices of inputs and cost of production. A number of constraints

impacting on farm production in general and wheat in particular were also highlighted. Future prospects of wheat crop in the changing scenario also engaged the attention of the committee for some time.

91. Farmers and representatives of technical service providing departments discussed and shared about the productivity, inputs and farm management issues. Some of the representatives brought to the notice of the meeting the malpractices in the procurement system, mainly due to the inefficiency and procedural deficiencies in the Procurement Departments. Farmers informed that due to mismanagement of irrigation and canal water situation became worse for small growers.

92. The representative highlighted the issue of spread of uncertified seed amongst the small holders who are not aware of the latest and HYV seeds. The Chair stressed on establishing linkages between the scientists and farmers mainly to minimize the gap between the results of farm with the actual field. The meeting also highlighted the need for development of suitable technology package for small holders in order for them to retain the activity on sustainable lines. There was a consensus in the meeting for having a program which ensures incentive prices to the farmers during the harvest season in general and for bumper harvest, in particular.

6. PARITY BETWEEN PRICES OF FERTILIZERS AND WHEAT

93. The parity ratio indicates the quantity of wheat required to buy one nutrient unit of fertilizer. Higher the ratio means lower the purchasing power of wheat, as more units of the commodity are needed to buy a given quantity of fertilizer and vice versa. A favorable parity will be required to stimulate fertilizers application towards optimal level. As the prices of inputs and outputs do not change proportionately, the parity ratios may favour or go against the output level. Hence, it is important to monitor and analyze the parity ratios between prices of wheat and fertilizers (Table-24).

94. In order to study the overtime changes in the purchasing power of wheat in terms of nitrogen and phosphatic fertilizers, the parity ratios between fertilizer nutrients and wheat have been calculated for the period of 2010-11 to 2020-21.

95. The parity ratios between market prices of fertilizers and wheat show that the quantity of wheat needed to buy one nutrient tonne of N fertilizer has fluctuated between 1.67 and 2.90 tonnes during the period under consideration. Similarly, the parity ratios between prices of wheat and those of phosphatic fertilizer have fluctuated from 1.16 to 6.26 units. The ratio dipped to the lowest level of 1.67 in 2010-11. However, the parity ratio jumped to the highest level of 2.90 in 2011-12, a rise of 74 per cent. It implies that the purchasing power of wheat for N fertilizer deteriorated by 74 per cent. However, due to the appreciated market prices of wheat,

the position gradually improved in the following five years as compared with the previous year and 1.69 units of wheat were required to buy one unit of N fertilizer during 2020-21.

Table-24: Parity between Market Prices of Fertilizers and Wheat: 2010-11 to 2020-21

Year	Price of fertilizer		Market price of wheat	Unites of wheat needed to buy one unit of fertilizer	
	N	P		N	P
	----- Rs per tonne -----				
2010-11	37700	97987	22625	1.67	4.33
2011-12	68913	148600	23750	2.90	6.26
2012-13	74783	138324	29125	2.57	4.75
2013-14	78700	137330	31250	2.52	4.39
2014-15	82043	147104	29525	2.77	4.98
2015-16	59565	97916	30162	1.97	3.24
2016-17	59780	78780	29900	2.00	2.63
2017-18	69560	109735	59475	1.84	1.16
2018-19	80430	93574	33295	2.41	2.81
2019-20	83430	125048	36700	2.27	3.40
2020-21	80780	124173	47600	1.69	2.60

Sources: i) Directorate of Agriculture, Punjab and Sindh for market prices of wheat.
ii) Fertilizer prices have been worked out from the prices of Urea and DAP used in COP estimates by the API for the relevant crop year.

96. The parity ratio for P-wheat prices generally hovered around 4.33 upto 2010-11. In 2011-12, the parity ratio peaked at 6.26 owing to record high prices of P-fertilizer in the world. In 2012-13, prices of P fertilizer and wheat moved in the opposite direction which again improved the purchasing power of wheat in terms of phosphatic fertilizer by 24 per cent. The situation in 2020-21 has relatively improved over the previous year as 2.60 units of wheat were required to buy one unit of P fertilizer, a change of (24 per cent) as compared to last year. However, substantial increase in the support price of Wheat for 2020-21 crop helped to improve its purchasing power.

7. MAJOR WHEAT VARIETIES AND THEIR YIELD POTENTIAL

97. Seed plays key role in increasing food and fiber production to meet the increasing demands of the people, and is a focus around which strategies to boost crop yields can be built. It is a vital input in crop production. The role of seed in providing sustainable crop production is mainly through new varieties. Seed is the cheapest input in crop production process. Crop status largely depends on the seed materials used for sowing. Response of other inputs in crop production depends on seed material used. The seed required for raising crop is quite small and its cost is so less as compared to other inputs. This emphasizes the need for increasing the areas under quality seed production. In this regard, around 22 wheat varieties have been evolved since 2010 onwards by the wheat research institutions at country level. The list of these varieties describing year of release and yield potential is given at Annex-XV.

98. The yield potential of major varieties range between 5000 - 8000 kgs per hectare. The highest yield potential of Benazir 13, Galaxy, Hammal 13, Punjab-11 varieties is observed between 6500 - 7000 kgs per hectare followed by Millat-11, AARI-11, Punjab-11, NARC 2011, AAS -11, Atta - Habib, Amin - 2008, Siren varieties and their yield potential is estimated between 6000 - 6500. Moreover, Tijaban-2010, Janbaz, KT-2009, Kohat-2010, Dharabi 11, Shahkar - CCRI, NIFA Lalma are varieties with minimum yield potential, fluctuating between 5000 to 6000 kgs per hectare. If these varieties are adopted for vast cultivation in their specified areas with recommended production technology and timely supply of inputs and application, the overall yield per hectare would certainly improve at the country level and resultantly production will boost further.

8. WHEAT YIELD AMONG COMPETING COUNTRIES

99. Wheat, the most popular cereal crop of world covers the acreage that no other cereal crop can ever get. Mostly, the wheat that is sown is for human consumption. Asian countries are at the biggest consumers. We, the Pakistanis, have not been as demanding for wheat as it is now. Wheat which is being eaten by us is really needed by our body in such a great amount. Global wheat during 2019 occupied an area of around 215.90 million hectares with a total production of 765.77 million tonnes. The world top 30 producing countries contribute 92.91 per cent of total area and 92.37 per cent of total production as narrated in the following Table-25.

100. In terms of wheat area India is on the top with 29.32 million hectares followed by Russian Federation with 27.56 million hectares, China, mainland with 23.73 million hectares, USA with 15.04 and Pakistan lies at 8th number in this regard with 4 per cent global share.

Table-25: Wheat Area in Major Wheat Producing Countries Of the World: 2019 CROP

S.No.	Country	Area in million hectares	per cent share in world area
1	India	29.32	13.58
2	Russian Federation	27.56	12.76
3	China, mainland	23.73	10.99
4	United States of America	15.04	6.97
5	Kazakhstan	11.41	5.29
6	Australia	10.40	4.82
7	Canada	9.66	4.47
8	Pakistan	8.68	4.02
9	Iran (Islamic Republic of)	8.04	3.72
10	Turkey	6.83	3.16
11	Ukraine	6.83	3.16
12	Argentina	6.05	2.80
13	France	5.24	2.43
14	Germany	3.12	1.44
15	Poland	2.51	1.16
16	Morocco	2.51	1.16
17	Afghanistan	2.33	1.08
18	Romania	2.17	1.00
19	Brazil	2.10	0.97
20	Algeria	1.97	0.91
21	Spain	1.92	0.89
22	United Kingdom	1.82	0.84
23	Ethiopia	1.79	0.83
24	Italy	1.75	0.81
25	Iraq	1.54	0.71
26	Egypt	1.41	0.65
27	Syrian Arab Republic	1.35	0.62
28	Uzbekistan	1.31	0.61
29	Bulgaria	1.20	0.56
30	Hungary	1.02	0.47
Total oOf 30 Country Area		200.60	92.91
Total World Area		215.902	100.00

Source: FAO Production Year Book 2019

101. In terms of wheat production, China, mainland with 133.60 million tonnes is on the top followed by India with 103.60, Russian Federation 74.45 million tonnes and USA with 52.26 million tonnes. However, Pakistan stands at 8th in wheat production of the world. (Table-26)

Table-26: Wheat Production in Major Wheat Producing Countries of the World: 2019 CROP

S.No.	Country	Production in million tonnes	per cent share in world Production
1	China, mainland	133.60	17.45
2	India	103.60	13.53
3	Russian Federation	74.45	9.72
4	United States of America	52.26	6.82
5	France	40.60	5.30
6	Canada	32.35	4.22
7	Ukraine	28.37	3.70
8	Pakistan	24.35	3.18
9	Germany	23.06	3.01
10	Argentina	19.46	2.54
11	Turkey	19.00	2.48
12	Australia	17.60	2.30
13	Iran (Islamic Republic of)	16.80	2.19
14	United Kingdom	16.23	2.12
15	Kazakhstan	11.30	1.48
16	Poland	10.81	1.41
17	Romania	10.30	1.34
18	Egypt	9.00	1.18
19	Italy	6.74	0.88
20	Bulgaria	6.32	0.83
21	Uzbekistan	6.09	0.80
22	Spain	6.04	0.79
23	Brazil	5.60	0.73
24	Hungary	5.38	0.70
25	Ethiopia	5.32	0.69
26	Afghanistan	4.89	0.64
27	Czechia	4.81	0.63
28	Denmark	4.64	0.61
29	Iraq	4.34	0.57
30	Morocco	4.03	0.53
Total Of 30 Country Production		707.32	92.37
Total World Production		765.77	100.00

Source: FAO Production Year Book 2019

102. In terms of yield per hectare, Ireland with 9378.7 kgs, Netherlands 9378.1 kgs, Belgium 9336.4 kgs per hectare followed by United Kingdom 8934.5. It is an alarming situation that Pakistan ranks at 62nd in terms of yield at 2805.9 kgs per hectare while India lies at 42nd position with 3533.4kgs per hectare. However, the world average yield of wheat is 3546.8 kgs per hectare (Annex- XVI)

9. PRODUCTION, PROCUREMENT, MARKET AND SUPPORT PRICES OF WHEAT

103. During 2011-12 to 2020-21, wheat production has ranged between 23.34 to 27.29 million tons. Procurement has been in the range of 4.03 to 9.07 million tons. The wheat procurement by the public sector has varied from 16.00 to 38.86 per cent of the respective production. The Federal Government announced support price of wheat annually which is acceptable for provinces. However during 2021-22 crop Sindh has differed with the Federal Government's support price of wheat Rs 1800/40kgs and announced Rs 2000/40 kgs for Sindh. The average market prices during the period under review for Punjab is remained below the support price except 2013-14 and 2019-20 when the price surpassed the support price. The support price during 2021-22 was higher than support prices in Punjab.

Table-27: Production, Procurement, Market and Support Prices of Wheat: 2010-11 to 2020-21

Crop year (May-April)	Production	Procurement	Procurement as percent of production	Support price	Average market price (May-July)*
	-----Million tonnes-----		Per cent	----Rupees per 40 kgs----	
2011-12	23.34	9.07	38.86	1050	949
2012-13	24.30	5.94	24.44	1200	1165
2013-14**	25.98	6.13	23.60	1225	1250
2014-15	25.09	5.15	20.53	1300	1181
2015-16	25.63	5.81	22.67	1300	1211
2016-17	26.61	6.51	24.46	1300	1196
2017-18	25.51	6.10	23.91	1300	1186
2018-19	25.19	4.03	16.00	1300	1221
2019-20	25.46	6.59	25.88	1400	1469
2020-21	27.29	5.83	21.36	1900	1885

* Average of Punjab and Sindh for 2011-12 to 2019-20 and 2020-21 for Punjab

** For support price during 2013-14 and 2020-21, average of Punjab and Sindh.

Source: PASSCO and Provincial Food Departments.

10. WHEAT PROCUREMENT TARGETS AND ACHIEVEMENTS

104. The Federal Government fixed the wheat procurement target at 6.30 million tons for 2020-21 crop to be implemented by the Provincial Food Departments and PASSCO. Agency-wise targets with their achievements in provinces are shown in Table-28.

Table-28: Procurement Targets and Achievements: 2020-21 Wheat Crop

Province/agency	Target	Achievement	Achievement as per cent of target
	----Million tones ----		Per cent
Pakistan	6.30	5.83	92.58
- Provincial Food Departments	5.10	5.01	98.29
- PASSCO	1.20	0.82	68.31
Punjab	4.60	5.05	109.74
- Food Department	3.50	3.69	105.43
- PASSCO	1.10	0.81	73.64
Sindh	1.16	1.14	98.28
- Food Department	1.40	1.14	81.21
- PASSCO	0.06	0.00	2.33
K.P.K	0.10	0.02	19.00
- Food Department	0.10	0.10	100.00
- PASSCO	-	-	-
Balochistan	0.14	0.13	90.00
- Food Department	0.10	0.09	86.00
- PASSCO	0.04	0.01	20.75

Source: PASSCO and respective provincial Food Departments.

105. The table - 28 reveals that procurement agencies have achieved 92.58 percent of the target fixed by the Government, Provincial Food Department, collectively achieved 98.29 per cent by the Food Departments and 68.31 per cent by PASSCO.

11 ACKNOWLEDGEMENT

106. The technical contribution and professional efforts of the following staff members of the institute are highly appreciated in compilation of the Report as Wheat Policy Analysis Report for 2021-22 Crop:

<i>Officers</i>

- | | | |
|----|----------------------|------------------------------|
| 1. | Mr. Hussain Ali Turi | Chief (Coordinator) |
| 2. | Mr. Muhammad Amin | Chief |
| 3. | Syed Riaz Ali Shah | Assistant Chief |
| 4. | Mr. Salman Mahmood | Assistant Chief (Dy. Coord) |
| 5. | Mrs. ShaguftaTasleem | Assistant Chief |

Staff

- | | | |
|----|--------------------|---|
| 6. | Mr. Hafeez Ahmed | Assistant Private Secretary
(Composed the Report) |
| 7. | Mr. Shamir Ahmed | Assistant Private Secretary |
| 8. | Mr. Muhammad Naeem | Machine Operator |
-

AREA, YIELD AND PRODUCTION OF WHEAT : 2010-11 TO 2020-21

Year	Punjab	Sindh	KPK	Balochistan	Pakistan
AREA ----- Thousand hectares -----					
2010-11	6691.0	1144.4	724.5	340.8	8900.7
2011-12	6482.9	1049.2	729.3	388.4	8649.8
2012-13	6511.3	1058.4	727.3	363.2	8660.2
2013-14	6901.4	1121.6	776.8	399.5	9199.3
2014-15	6979.5	1106.9	732.5	385.0	9203.9
2015-16	6913.9	1154.5	772.3	382.9	9223.6
2016-17	6660.2	1169.5	748.6	394.1	8972.4
2017-18	6559.8	1089.6	753.4	394.5	8797.3
2018-19	6495.9	1052.7	739.6	389.6	8677.8
2019-20	6515.3	1134.2	727.3	427.9	8804.7
2020-21	6746.0	1202.5	761.8	458.0	9168.3
YIELD ----- kgs per hectare -----					
2010-11	2846	3747	1595	2139	2833
2011-12	2736	3585	1550	2170	2714
2012-13	2855	3400	1714	2115	2794
2013-14	2860	3568	1755	2191	2824
2014-15	2763	3318	1720	2265	2726
2015-16	2824	3321	1813	2276	2779
2016-17	3073	3344	1824	2364	2973
2017-18	2924	3340	1756	2371	2850
2018-19	2829	3590	1795	2221	2806
2019-20	2978	3393	1554	2027	2868
2020-21	3098	3362	1787	2531	2996
PRODUCTION ----- Thousand tonnes -----					
2010-11	19041.0	4287.9	1155.8	729.1	25213.8
2011-12	17738.9	3761.4	1130.3	842.7	23473.3
2012-13	18587.0	3598.7	1246.7	768.0	24200.4
2013-14	19738.9	4002.1	1363.1	875.3	25979.4
2014-15	19281.9	3672.2	1259.9	872.0	25086.0
2015-16	19526.7	3834.6	1400.4	871.3	25633.0
2016-17	20466.4	3910.4	1365.1	931.8	26673.7
2017-18	19178.6	3639.5	1322.7	935.4	25076.2
2018-19	18377.2	3778.9	1327.6	865.3	24349.0
2019-20	19401.9	3848.1	1130.3	867.2	25247.5
2020-21	20900.0	4043.2	1361.6	1159.3	27464.1

Sources:

1. For 2010-11 to 2018-19: Wheat Policy Analysis For 2019-20 Crop
2. For 2019-20: Respective Agriculture Provincial Departments.
3. For 2020-21: Provisional estimate of Punjab and Second estimate of Sindh, Balochistan and KPK provided by respective Agriculture Provincial Departments.

AREA, YIELD AND PRODUCTION OF WHEAT : 2010-11 TO 2020-21

Year	Punjab	Sindh	KPK	Balochistan	Pakistan
AREA ----- Thousand acres -----					
2010-11	16534.1	2827.9	1790.3	842.2	21994.5
2011-12	16019.9	2592.7	1802.2	959.8	21374.5
2012-13	16090.1	2615.4	1797.1	897.5	21400.1
2013-14	17054.0	2771.6	1919.6	987.2	22732.4
2014-15	17247.0	2735.3	1810.1	951.4	22743.8
2015-16	17084.9	2852.9	1908.4	946.2	22792.4
2016-17	16458.0	2890.0	1849.9	973.9	22171.7
2017-18	16209.9	2692.5	1861.7	974.8	21739.0
2018-19	16052.0	2601.3	1827.6	962.7	21443.7
2019-20	16100.0	2802.7	1797.2	1057.4	21757.3
2020-21	16670.0	2971.5	1882.5	1131.8	22655.8
YIELD ----- kgs per acre -----					
2010-11	1152	1516	646	866	1146
2011-12	1107	1451	627	878	1098
2012-13	1155	1376	694	856	1131
2013-14	1157	1444	710	887	1143
2014-15	1118	1343	696	917	1103
2015-16	1143	1344	734	921	1125
2016-17	1244	1353	738	957	1203
2017-18	1183	1352	710	960	1154
2018-19	1145	1453	726	899	1135
2019-20	1205	1373	629	820	1160
2020-21	1254	1361	723	1024	1212
PRODUCTION ----- Thousand tonnes -----					
2010-11	19041.0	4287.9	1155.8	729.1	25213.8
2011-12	17738.9	3761.4	1130.3	842.7	23473.3
2012-13	18587.0	3598.7	1246.7	768.0	24200.4
2013-14	19738.9	4002.1	1363.1	875.3	25979.4
2014-15	19281.9	3672.2	1259.9	872.0	25086.0
2015-16	19526.7	3834.6	1400.4	871.3	25633.0
2016-17	20466.4	3910.4	1365.1	931.8	26673.7
2017-18	19178.6	3639.5	1322.7	935.4	25076.2
2018-19	18377.2	3778.9	1327.6	865.3	24349.0
2019-20	19401.9	3848.1	1130.3	867.2	25247.5
2020-21	20900.0	4043.2	1361.6	1159.3	27464.1

Source:

1. For 2010-11 to 2018-19: Wheat Policy Analysis For 2019-20 Crop
2. For 2019-20: Respective Agriculture Provincial Departments.
3. For 2020-21: Provisional estimate of Punjab and Second estimate of Sindh, Balochistan and KPK provided by respective Agriculture Provincial Departments.

ANNEX-II

AREA, YIELD AND PRODUCTION OF WHEAT BY PROVINCE AND BY IRRIGATION: 2018-19 TO 2020-21
2018-19 TO 2020-21

Country/ Province	Area			Change over last year	Yield per hectare			Change over last year	Production			Change over last year
	2018-19	2019-20	2020-21		2018-19	2019-20	2020-21		2018-19	2019-20	2020-21	
	000 ha				Kgs				000 tonnes			
IRRIGATED												
PAKISTAN	7712.5	7629.5	7975.6	4.54	2971	3084	3216	4.28	22916.2	23530.7	25651.7	9.01
PUNJAB	5950.8	5784.0	5999.8	3.73	2952	3157	3282	3.96	17567.90	18262.9	19694.0	7.84
SINDH	1022.8	1101.7	1167.4	5.96	3634	3432	3400	-0.93	3717.10	3780.5	3968.7	4.98
KPK	356.6	336.6	376.4	11.82	2163	1903	2280	19.79	771.40	640.6	858.1	33.95
BALUCHISTAN	382.3	407.2	432.0	6.09	2249	2079	2618	25.90	859.80	846.7	1130.9	33.57
UNIRRIGATED												
PAKISTAN	965.30	1175.2	1192.7	1.49	1484	1461	1520	4.02	1432.8	1716.8	1812.4	5.57
PUNJAB	545.10	731.3	746.2	2.04	1485	1558	1616	3.77	809.30	1139.0	1206.0	5.88
SINDH	29.90	32.5	35.1	8.00	2067	2080	2123	2.04	61.80	67.6	74.5	10.21
KPK	383.00	390.7	385.4	-1.36	1452	1253	1306	4.23	556.20	489.7	503.5	2.82
BALUCHISTAN	7.30	20.7	26.0	25.60	753	990	1092	10.30	5.50	20.5	28.4	38.54
TOTAL												
PAKISTAN	8677.8	8804.7	9168.3	4.13	2806	2868	2996	4.47	24349.0	25247.5	27464.1	8.78
PUNJAB	6495.9	6515.3	6746.0	3.54	2829	2978	3098	4.04	18377.2	19401.9	20900.0	7.72
SINDH	1052.7	1134.2	1202.5	6.02	3590	3393	3362	-0.90	3778.9	3848.1	4043.2	5.07
KPK	739.6	727.3	761.8	4.74	1795	1554	1787	15.01	1327.6	1130.3	1361.6	20.46
BALUCHISTAN	389.6	427.9	458.0	7.03	2221	2027	2531	24.90	865.3	867.2	1159.3	33.68

Sources: Respective Agriculture Provincial Departments.

DISTRICT- WISE AREA, YIELD AND PRODUCTION OF WHEAT AVERAGE OF 2018-19 TO 2020-21

S.No	Province/ District/ Agency	Area	Production	Share in total production	Yield	S.No	Province/ District/ Agency	Area	Area:		Share in total production	Yield
									Production:	000 ha		
						Yield:		000 tonnes kgs/hectare				
PUNJAB						KPK						
1	Bahawalnagar	396.31	1416.50	5.51	3574.23	1	Swat	56.63	117.32	0.46	2071.89	
2	R.Y.Khan	303.38	1026.30	4.00	3382.92	2	D.I.Khan	55.24	100.08	0.39	1811.75	
3	Bahawalpur	295.28	951.74	3.71	3223.18	3	Charsadda	39.08	84.70	0.33	2167.55	
4	Jhang	272.08	856.28	3.33	3147.21	4	Mardan	41.11	82.43	0.32	2005.34	
5	Muzaffargarh	271.00	845.59	3.29	3120.25	5	Swabi	37.65	74.16	0.29	1969.90	
6	Faisalabad	251.71	827.81	3.22	3288.73	6	Peshawar	34.81	73.04	0.28	2098.10	
7	Layyah	252.25	698.84	2.72	2770.39	7	Manselra	38.67	70.77	0.28	1829.87	
8	Khanewal	213.13	694.20	2.70	3257.18	8	Burir	48.67	64.94	0.25	1334.40	
9	Rajanpur	208.95	692.69	2.70	3315.15	9	Nowshera	25.60	62.36	0.24	2436.46	
10	D.G.Khan	223.52	691.20	2.69	3092.37	10	Hanipur	33.41	59.72	0.23	1787.36	
11	Gujranwala	223.52	668.91	2.60	2992.66	11	Dir Lower	28.88	55.30	0.22	1914.57	
12	Sheikhupura	206.66	656.17	2.55	3175.17	12	Dir Uper	23.81	42.74	0.17	1795.44	
13	Vehari	195.73	651.37	2.54	3327.92	13	Shangla	24.58	40.74	0.16	1657.27	
14	Lodhran	176.98	597.95	2.33	3378.71	14	Kurram AG.	23.09	39.43	0.15	1708.02	
15	Multan	173.07	571.53	2.23	3302.32	15	Malakand	25.83	33.92	0.13	1312.98	
16	Sargodha	205.84	567.56	2.21	2757.26	16	Kohat	22.29	30.19	0.12	1354.26	
17	Okara	157.42	558.71	2.18	3549.22	17	Bannu	13.46	29.61	0.12	2200.44	
18	T.T.Singh	152.43	525.07	2.04	3444.64	18	Bajour AG.	35.03	29.28	0.11	836.02	
19	Hafizabad	152.43	479.11	1.87	3143.24	19	Lakki Marwat	18.28	22.18	0.09	1213.52	
20	Kasur	143.39	474.59	1.85	3309.76	20	Abbottabad	14.04	22.18	0.09	1579.59	
21	Miariwali	191.41	463.32	1.80	2420.55	21	Tank	13.27	20.22	0.08	1524.10	
22	Bhakkar	175.09	434.49	1.69	2481.48	22	Khyber AG.	10.77	17.67	0.07	1641.65	
23	Narkana Sahib	125.05	429.10	1.67	3431.55	23	Chitral	8.21	16.30	0.06	1986.03	
24	Sahiwal	123.16	423.21	1.65	3436.26	24	Battagram	7.83	13.69	0.05	1748.59	
25	Sialkot	161.73	418.79	1.63	2589.41	25	Hangu	9.58	13.23	0.05	1381.37	
26	Pakpattan	110.34	399.89	1.56	3624.08	26	S.Waziristan	8.25	9.86	0.04	1195.09	
27	M.B.Din	135.43	378.29	1.47	2793.18	27	Mohmand AG.	7.18	9.22	0.04	1285.04	
28	Attock	185.21	325.53	1.27	1757.68	28	N.Waziristan	4.60	6.93	0.03	1508.41	
29	Chiniot	96.45	300.67	1.17	3117.51	29	SD Hassan Khel	4.36	5.89	0.02	1350.19	
30	Gujrat	149.87	287.26	1.12	1916.73	30	SD Bannu	4.28	5.89	0.02	1376.84	
31	Narowal	118.44	274.60	1.07	2318.51	31	Orakzai AG	3.83	5.02	0.02	1310.98	
32	Khushab	116.41	231.31	0.90	1986.94	32	Karak	12.54	4.31	0.02	343.71	
33	Chakwal	143.12	228.82	0.89	1598.76	33	SD Kohat	3.63	3.64	0.01	1004.41	
34	Rawalpindi	136.65	216.02	0.84	1580.84	34	Kohistan	1.73	3.16	0.01	1828.67	
35	Lahore	45.32	149.87	0.58	3306.76	35	SD D.I Khan	2.70	3.04	0.01	1123.40	
36	Jhelum	69.33	103.75	0.40	1496.39							
37	Islam abad	27.66	42.63	0.17	1541.52							
Sub Total		6585.73	19559.69	76.15	2970.01	Sub Total		742.88	1273.17	4.96	1713.83	
SINDH						BOLUCHISTAN						
1	N.Feroze	103.78	397.43	1.55	3829.56	1	Nasirabad	82.78	216.66	0.84	2617.42	
2	Sh.Benazirabad	89.21	377.32	1.47	4229.47	2	Jaffarabad	73.83	194.91	0.76	2640.03	
3	Khairpur	104.70	376.13	1.46	3592.49	3	Jhal Magsi	55.74	127.61	0.50	2289.49	
4	Ghotki	107.61	369.88	1.44	3437.31	4	Khuzdar	46.97	99.56	0.39	2119.79	
5	Sanghar	105.35	351.74	1.37	3338.70	5	Dera Bughti	22.23	44.79	0.17	2015.09	
6	Daadu	78.20	256.08	1.00	3274.80	6	Lasbela	15.65	35.63	0.14	2276.43	
7	Matiari	41.62	184.78	0.72	4439.95	7	Sibi	15.91	27.75	0.11	1743.91	
8	Larkana	52.58	184.31	0.72	3505.25	8	Awaran	14.90	26.85	0.10	1801.78	
9	Shadadkot	55.05	181.58	0.71	3298.68	9	Barkhan	11.47	22.22	0.09	1937.23	
10	Mirpurkhas	54.25	172.01	0.67	3170.81	10	Kachhi	8.57	18.12	0.07	2115.04	
11	Sukkur	50.74	165.33	0.64	3258.32	11	Loralai	8.63	17.74	0.07	2054.75	
12	Tando Allahyar	30.51	124.41	0.48	4078.09	12	Kharan	8.56	16.49	0.06	1926.50	
13	Jamshoro	37.50	115.58	0.45	3082.10	13	Killa Saifullah	7.95	15.90	0.06	1999.71	
14	Shikarpur	36.26	105.54	0.41	2910.51	14	Noushki	7.06	14.22	0.06	2015.78	
15	Umerkot	31.49	94.07	0.37	2987.80	15	Chaghi	6.18	9.62	0.04	1556.21	
16	Kashmore	36.40	93.90	0.37	2579.94	16	Koltu	4.28	9.59	0.04	2239.65	
17	Badin	29.08	87.77	0.34	3018.66	17	Kalat	4.05	8.91	0.03	2201.27	
18	Jacobabad	34.35	81.35	0.32	2368.23	18	Parjgoor	4.49	7.81	0.03	1739.86	
19	Hyderabad	15.74	64.26	0.25	4082.14	19	Zhob	4.27	7.45	0.03	1747.19	
20	Thatta	17.71	49.68	0.19	2805.46	20	Mastung	3.25	7.04	0.03	2164.53	
21	Tando Muhammad K.	14.61	48.07	0.19	3290.51	21	Washuk	3.81	6.75	0.03	1771.64	
22	Tharparkar	1.99	6.02	0.02	3022.77	22	Pishin	3.44	6.44	0.03	1871.12	
23	Karachi	1.10	2.83	0.01	2574.33	23	Quetta	2.58	5.39	0.02	2089.00	
						24	Harnai	2.32	4.72	0.02	2039.02	
						25	Turbat	2.12	4.55	0.02	2143.75	
						26	K.Abdullah	1.66	3.17	0.01	1910.19	
						27	Musa Khel	1.42	2.19	0.01	1540.81	
						28	Sherani	0.69	1.27	0.00	1826.44	
						29	Ziarat	0.34	0.59	0.00	1738.24	
Sub Total		1129.81	3890.07	15.14	3443.13	Sub Total		425.14	963.94	3.75	2267.35	
						Pak Total		8883.55	25686.86	100.00	2891.51	

Notes: 1. Data have been arranged in descending order of production.
2. Percentage shares are calculated on the basis of country total.

Annex-IV

PER CAPITA AVAILABILITY OF WHEAT:2017-18 to 2019-20 (MAY-APRIL)

S.No	Description	Production year	2017-18	2018-19	2019-20
		Consumption year	2018-19	2019-20	2020-21
1	Total Population (a)		214.09	218.31	222.49
			-----000 tonnes-----		
2	Opening stocks as on 1st May		5942	3780	636
3	Production of Pakistan		25076	24349	25228
4	Production of AJ&K and GB (a)		125	122	126
5	Imports		0	0	3612
6	Exports (wheat and wheat preparation)		684	48	0
7	Closing stocks as on 30th April		3779	636	731
8	Total availability		26680	27567	28871
9	Deduction for seed,feed and wastage @ 10 per cent of production		2520	2447	2535
10	Available for human consumption (item 8 minus item 9)		24160	25120	26336
			-----Kgs/ annum-----		
11	Per capita availability (item 10 divided by item 1)		113	115	118
12	Average per capita availability during 2018-19 to 2020-21			115	

- Notes:
- It includes the population of Pakistan, AJ&K, NAs and Afghan Refugees.
 - Due to non-availability of data, production of AJ&K and GB in the past has been estimated on the basis ratio between the production of Pakistan and that of AJ&K and GB

- Sources:
- For carryover stocks: PASSCO and Provincial Food Departments.
 - For Population Economic Survey of Pakistan.
 - For Afghan Refugees: Ministry of Kashmir Affairs and Northern Areas and Gilgit Baltistan Government of Pakistan, Islamabad.

ANNEX V

INTERNATIONAL PRICES OF US NO-2 HARD RED WINTER AND SDFT
RED WINTER WHEAT

2008-09 TO 2020-21

Year (July - June)	Month	HRW No-2	SRW No-2	Difference between HRW/SRW	
				US\$/tonne	%age
		-----US\$ per tonne-----			
2009-09		270	201	69	34.33
2009-10		209	185	24	12.97
2010-11		316	289	27	9.34
2011-12		301	259	42	16.22
2012-13		347	310	37	11.94
2013-14		318	265	53	20.00
2014-15		266	221	45	20.36
2015-16		211	194	17	8.76
2016-17		197	170	27	15.88
2017-18		230	188	42	22.34
2018-19		232	210	22	10.48
2019-20		220	222	-2	-0.90
2020-21		269	264	5	1.89
2021-22		230	238	-8	-3.36
	Months				
	July	230	238	-8	-3.36

Source: International Grains Council, London.

Annex-VI

IMPORT PARITY PRICES OF WHEAT ON THE BASIS OF US NO 2 HRW AND SRW (FOB GULF) QUOTED PRICE

		2021-22 (Jul-Sept)		2020-21		2018-19 to 2020-21	
		HRW	SRW	HRW	SRW	HRW	SRW
		-----US \$ per tonne-----					
1	Average Fob(Gulf) price	317.00	298.00	269.00	264.00	240.00	232.00
2	Freight charges from Gulf port to Karachi	70.00	70.00	70.00	70.00	70.00	70.00
3	Average c&f (Karachi) price in US \$	387.00	368.00	339.00	334.00	310.00	302.00
		-----Rs per tonne-----					
4	Exchange rate	168.50	168.50	168.50	168.50	168.50	168.50
5	Average c&f (Karachi) price in Pak Rupees	65210	62008	57122	56279	52235	50887
6	Marine insurance charges @0.2% of C & F cost	130	124	114	113	104	102
7	Lc opening charges @0.02% of c&f cost.	13	12	11	11	10	10
8	Stevedoring	1300	1300	1300	1300	1300	1300
9	Provision for unforeseen losses @ 0.5 of C&F cost	326	310	286	281	261	254
10	Survey, Lab Testing Charges, Weightment, wharfage \$ clearing and forwarding charges	37.42	37.42	37.42	37.42	37.42	37.42
11	TCP commission @ 0.75 % of c&f cost	489	465	428	422	392	382
12	KIBOR @7.61 % for 3 months for 30 days	414	393	362	357	331	323
13	Landed cost (item 3 to 8) at Karachi	69160	65830	60748	59871	55665	54263
14	Transport cost from Karachi to Multan	5000	5000	5000	5000	5000	5000
15	Expences from procurement center to Multan	700	700	700	700	700	700
16	Import parity price at procurement center level	73460	70130	65048	64171	59965	58563
17	Import parity prices of wheat	-----Rs per 40 kgs-----					
	i) If consumed at Multan	2938	2805	2602	2567	2399	2343
	ii) If consumed at Karachi	2766	2633	2430	2395	2227	2171

Sources:

- i) For fob (Gulf) prices: International Grain Council, UK.
- ii) For, incidental and transport charges from Karachi to Multan, Universal Cargo (private) Limited, Karachi.
- iii) For expenses from procurement centre to Multan: PASSCO, Lahore.

Annex-VII

IMPORT PARITY PRICES OF WHEAT ON THE BASIS OF FUTURE PRICE OF BLACK SEA

S. No	Item	Oct, 21	Nov,21	Dec,21
		-----US \$ per tonne-----		
1	Average Fob(Gulf) price	308.00	311.00	314.00
2	Freight charges from Gulf port to Karachi	54.00	54.00	54.00
3	Average c&f (Karachi) price in US \$	362.00	365.00	368.00
4	Exchange rate	168.50	168.50	168.50
5	Average c&f (Karachi) price in Pak Rupees	60997	61503	62008
6	Marine insurance charges @0.2% of C & F cost	122	123	124
7	Lc opening charges @0.02% of c&f cost.	12	12	12
8	Stevedoring	1300	1300	1300
9	Provision for unforeseen losses @ 0.5 of C&F cost	305	308	310
10	Survey, Lab Testing Charges, Weightment, wharfage \$ clearing and forwarding charges	37.42	37.42	37.42
11	TCP commission @ 0.75 % of c&f cost	457	461	465
12	KIBOR @7.61 % for 3 months for 30 days	387	390	393
13	Landed cost (item 3 to 8) at Karachi	64778	65304	65830
14	Transport cost from Karachi to Multan	5000	5000	5000
15	Expences from procurement center to Multan	700	700	700
16	Import parity price at procurement center level	69078	69604	70130
17	Import parity prices of wheat	-----Rs per 40 kgs-----		
	i) If consumed at Multan	2763	2784	2805
	ii) If consumed at Karachi	2591	2612	2633

Sources:

- i) For fob (Gulf) prices: International Grain Council, UK.
- ii) For, incidental and transport charges from Karachi to Multan, TCP and PASSCO.
- iii) For expenses from procurement centre to Multan: PASSCO, Lahore.

EXPORT PARITY PRICES OF WHEAT ESTIMATED FROM US NO 2 HRW (FOB GULF) QUOTED PRICE

S.No	Item	2021-22 (Jul-Sep)		2020-21		2018-19 to 2020-21	
		HRW	SRW	HRW	SRW	HRW	SRW
		-----US \$ per tonne-----					
1	Fob(Gulf) price assuming Fob (Karachi) price	317.00	298.00	269.00	264.00	240.00	232.00
2	Exchange rate	168.50	168.50	168.50	168.50	168.50	168.50
3	Fob(Gulf) price assuming Fob (Karachi) price in Pak Rupees	53415	50213	45327	44484	40440	39092
4	Incidental charges: (items i to xi)	6746	6612	6409	6374	6205	6149
	i) Expenses from procurement centre to Multan	700	700	700	700	700	700
	ii) Transport cost from Multan to Karachi including loading and unloading charges	1800	1800	1800	1800	1800	1800
	iii) Cleaning/grading	750	750	750	750	750	750
	iv) Bagging, spillage, loading, unloading & testing	850	850	850	850	850	850
	v) Wharfage, stevedoring, weightment and port charges	70	70	70	70	70	70
	vi) Pre shipment inspection charges	100	100	100	100	100	100
	vii) Export development surcharges @ 0.25% and Withholding tax @ Rs 1.25 of Fob price	801	753	680	667	607	586
	viii) Insurance charges at port 1 % for one month	45	42	38	37	34	33
	ix) Bank commission & charges 0.25 %	134	126	113	111	101	98
	x) KIBOR @ 7.61 % for 3 months for 30 days	339	318	287	282	256	248
	xi) Miscellaneous charges (Ghati, Wastage, Godown rent)	250	250	250	250	250	250
5	Export parity price of wheat at procurement centre level(item 1- items 2)	46669	43601	38918	38111	34235	32943
		-----Rs per 40kgs-----					
6	Export parity price at procurement center level	1867	1744	1557	1524	1369	1318

Sources: i) For fob (Gulf) International Grain Council
ii) Incidental charges: Garib and Sons (Pvt)Ltd
iii) For expenses from procurement centre and transport charges: PASSCO, Lahore.

**AVERAGE FARMER COST OF PRODUCTION ESTIMATES OF WHEAT IN PUNJAB:
2021-22 CROP**

S #	Operations / Inputs	Unit	Avg # of oprs/units/acre	2020-21 crop		2021-22 crop		Change in 2021-22 crop over 2020-21 crop	
				Cost per unit	Cost per acre	Cost per unit	Cost per acre		
1	2		3	4	5 = 3 * 4	6	7=3*6	8=7-5	
1	Land preparation:		Rs.....					
	1.1 Rotavator OR disc plough	# of operation/acre	0.500	2000.0	1000.0	2200.0	1,100	100.0	
	1.2 Ploughing	# of operation/acre	2.500	900.0	1800.0	1200.0	3,000	1200.0	
	1.4 Planking	# of operation/acre	0.500	450.0	900.0	1000.0	500	-400.0	
2	Seed and sowing operations:								
	2.1 Seed used	Kg/acre	50.000	75.0	3750.0	75.0	3,750	0.0	
	2.2 Labour for seed broadcasting	M.hr/acre	1.000	75.0	109.1	100.0	100	-9.1	
	2.2 Labour for DAP broadcasting	M.hr/acre	1.000			100.0	100		
	2.3 Ploughing after broadcasting	# of Operation/acre	1.000	900.0	1800.0	1200.0	1,200	-600.0	
	2.4 Planking after broadcasting	# of Operation/acre	0.500	450.0	450.0	1000.0	500	50.0	
3	Bund making:								
	3.1 Manual	m.hrs	1.000	75.0	75.0	100.0	100	25.0	
	3.2 tractor	Hrs	0.250	900.0	225.0	1200.0	300	75.0	
4	Plant protection:								
	4.1 Weedicides & application	# & application	1.000	1200.0	1300.0	1350	1,350	50.0	
5	Irrigation: (Nos)								
	5.2 Tubewell Irrigation	# of Irrigation	3.000	800.0	2956.8	875.0	2,625	-331.8	
	5.3 Mixed (Tubewell & Canal)	# of Irrigation	0.500	800.0	184.0	875.0	438	253.5	
6	Labour for irrigation and water course cleaning	M.days/acre	1.000	600.0	780.0	1000.0	1,000	220.0	
7	Farm Yard Manure	#of trolley	0.250	2600.0	650.0	3000.0	750	100.0	
8	Fertilizers:								
	8.1 DAP	Bags/acre	1.000	3500.0	3500.0	7036.0	7,036	3536.0	
	8.2 Urea	Bags/acre	2.000	1800.0	3600.0	1860.0	3,720	120.0	
	8.3 NP	Bags/acre	0.079	2511.0	198.4	4605.0	364	165.4	
	8.4 CAN	Bags/acre	0.240	1400.0	336.0	1631.0	391	55.4	
9	Transport and application	Rs./ acre	3.319	90.0	298.7	100.0	332	33.2	
9	Cost of Traded inputs	Rs./ acre			24750.5		28,656		
10	Mark up on investment on item 1 to 8 excluding item 5(1)	KIBOR+5% per annum for 6			1608.8		1,719	110.6	
11	Harvesting charges including labour	40 kgs/acre	2.500	1350.0	4098.6	1800.0	4,500	401.4	
12	Threshing including labour	40 kgs/acre	2.250	1350.0	3249.5	1800.0	4,050	800.6	
13	Land rent	For 6 months	0.500	33,500.0	16,750.0	40,000.0	20,000	3250.0	
14	Average weighted land tax	Rs/acre/ annum	0.500	132.0	66.0	132.0	66	0.0	
16	Total cost of cultivation	Rs/per acre	-		53,313		58,991	5678.3	
17	17.1 Value of wheat bhoosa	Rs/acre	-		10,000		8,980	-1020.4	
	17.2 Subsidy on DAP (1000*1.5*.6)		0.600			1,500	900		
18	Net cultivation cost (item 15-16)	Rs/acre	-		43,313		49,111	5798.7	
19	Yield	Kg/acre	-		1120.0		1200.0	80.0	
20	20.1. Cost of production at farm level:	Rs/40 kgs			1546.9		1637.0	90.2	
	20.2. Cost of production Excluding land rent	Rs/40 kgs			948.7		970.4	21.7	
21	Marketing cost	Rs/40 kgs	-		40.0		40.0	0.0	
22	Cost of production at market/procurement centre								
	22.1 Including land rent	Rs/40 kgs	-		<u>1,586.88</u>		<u>1677.0</u>	90.2	
	22.2 Excluding land rent	Rs/40 kgs	-		988.7		1010.4	21.7	

**AVERAGE FARMER COST OF PRODUCTION ESTIMATES OF WHEAT IN SINDH:
2021-22 CROP**

S. No.	Operations / Inputs	Unit	Average No. of oprs/units/acre	2020-21 crop		2021-22 crop		Change in 2021-22 crop over 2020-21 crop
				Cost per unit	Cost per acre	Cost per unit	Cost per acre	
1	2		3	4	5 = 3 * 4	6	7=3*6	8=7-5
1	Land preparation:				Rs.....		
	1.1 Rotavator/disc/5/3hari	# of opration/acre	1.000	1800.0	1800.0	2200.0	2200.0	400.0
	1.2 Ploughing	# of opration/acre	2.000	1100.0	3300.0	1200.0	2400.0	-900.0
	1.3 Planking	# of opration/acre	1.000	1100.0	1100.0	1100.0	1100.0	0.0
	1.4 Laser levelling	# of opration/acre	0.500	1200.0	1200.0	1300.0	650.0	-550.0
2	Seed and sowing operations:							
	2.1 Seed used	Kg/acre	55.000	80.0	4432.2	80.0	4400.0	-32.2
	2.2 Labour for seed broadcasting	M.hr/acre	1.000	68.8	77.5	100.0	100.0	22.5
	2.3 Ploughing in case of broadcasting	# of Operation/acre	1.000	1100.0	1100.0	1200.0	1200.0	100.0
	2.4 Planking in case of broadcasting	# of Operation/acre	1.000	550.0	550.0	800.0	800.0	250.0
3	Bund making:							
	3.1 Manual	m.hrs	1.000	68.8	110.8	100.0	100.0	-10.8
	3.2 tractor	Hrs	0.100	1100.0	100.1	1200.0	120.0	19.9
4	Weedicides & application		1.000	1300.0	1179.1	1300.0	1300.0	120.9
5	Irrigation: (Nos)							
	5.1 Canal				53.3		53.3	
	5.2 Tubewell	# of Irrigations	2.000	800.0	1600.0	850.0	1700.0	100.0
	5.3 Mixed	# of Irrigations	2.000	500.0	1000.0	600.0	1200.0	200.0
	5.4 Lift Pump	# of Irrigations	0.551	500.0	275.5	600.0	330.6	55.1
6	Labour for irrigation and water course cleaning	M.days/acre	1.000	550.0	715.0	800.0	800.0	85.0
7	Farm Yard Manure	#of trolley	0.250	3000.0	750.0	3200.0	800.0	50.0
8	Fertilizer (bags)							
	8.1 DAP	Bags/acre	1.000	3650.0	3650.0	7200.0	7200.0	3550.0
	8.2 Urea	Bags/acre	2.000	1875.0	3750.0	2000.0	4000.0	250.0
	8.3 NP	Bags/acre	0.100	2700.0	499.5	4550.0	455.0	-44.5
	Transport and application	Rs./ acre	3.200	120.0	384.0	125.0	400.0	16.0
9	Cost of Traded inputs	Rs./ acre			27133.2		31255.6	4122.4
10	Mark up on investment on item 1 to 8 excluding item 5(1)	KIBOR+5% per annum for 6 months			1608.8		1,875	266.6
11	Harvesting charges	40 kgs/acre	2.500	1400.0	3150.0	2000.0	5000.0	1850.0
12	Threshing	40 kgs/acre	2.250	1400.0	3456.6	2000.0	4500.0	1043.4
13	Land rent	For 6 months	0.500	33000.0	16500.0	40000.0	20000.0	3500.0
14	Land tax	Rs/acre/annum	0.500	200.0	100.0	200.0	100.0	0.0
15	Drainage cess	For 6 months			24.0		24.0	0.0
16	Total cost of Cultivation	Rs/acre	-		54555.7		62808.2	8252.6
17	17.1 Value of wheat bhoosa	Rs/acre	-	200.0	9000.0		9000.0	0.0
	17.2 Subsidy on DAP (1000*1.5*.6)	Rs/acre	-				900.0	900.0
18	Net cultivation cost (item 15-16)	Rs/acre	-		45555.68		52908.2	7352.6
19	Yield	Kg/acre	-		1220.00		1300.0	80.0
20	20.1. Cost of production at farm level:	Rs/40 kgs			1493.6		1627.9	134.3
	20.2. Cost of production Excluding land rent				952.6		1012.6	
21	Marketing cost	Rs/40 kgs	-		45.0		45.0	0.0
22	Cost of production at market/procurement centre							
23	23.1 Including land rent	Rs/40 kgs	-		1538.63		1672.9	134.3
	23.2 Excluding land rent	Rs/40 kgs	-		997.6		1057.6	59.9

ECONOMICS OF WHEAT AND COMPETING CROPS AT PRICES REALIZED BY THE GROWERS: 2020-21 CROPS												
S. No	Province/crops/ crop combination	Crop durati on	Water used	Gross cost	Cost of purchas ed inputs	Gross revenue	Gross margin	Net income	Output input ratio	Revenue per		
										Rupee of purchas ed inputs	Crop day	Acre inch of water used
		Days	Acre incheRupees per acre.....						RatioRupees.....	
1	2	3	4	5	6	7=6-5	8=6-4	9=6/4	10=6/5	11=6/2	12=6/3	
Punjab												
1	Wheat	180	12	53313	16857	60400	43543	7087	1.13	3.6	336	5033
2	Seed Cotton	240	22	76796	25962	89680	63718	12884	1.17	3.5	374	4076
3	Basmati paddy	180	58	63164	32362	72846	40484	9682	1.15	2.3	405	1256
4	IRRI paddy	180	62	64507	28885	65244	36359	736	1.01	2.3	362	1052
5	Sunflower (spring)	180	22	55703	19098	74250	55152	18547	1.33	3.9	413	3375
6	Canola	180	13	37740	9120	64350	55230	26610	1.71	7.1	358	4950
7	Seed cotton + wheat	420	34	130108	42820	150080	107260	19972	1.15	3.5	357	4414
8	Seed cotton + sunflower	420	44	132499	45061	163930	118869	31431	1.24	3.6	390	3726
9	Basmati paddy+wheat	360	70	116477	49219	133246	84027	16770	1.14	2.7	370	1904
10	Basmati paddy+sunflower	360	80	118867	51460	147096	95636	28229	1.24	2.9	409	1839
11	IRRI paddy + wheat	360	74	117820	45742	125644	79902	7824	1.07	2.7	349	1698
12	IRRI paddy+sunflower	360	84	120211	47983	139494	91511	19283	1.16	2.9	387	1661
13	Sugarcane	394	48	122786	39703	162050	122347	39264	1.32	4.1	411	3376
Sindh												
1	Wheat	180	12	54556	17571	70000	52429	15444	1.28	4.0	389	5833
2	Seed cotton	240	18	81210	28060	92422	64362	11212	1.14	3.3	385	5135
3	IRRI paddy	180	56	50593	19677	76250	56573	25657	1.51	3.9	424	1362
4	Sunflower (spring)	180	22	39958	14393	51909	37517	11951	1.30	3.6	288	2360
5	Canola	180	13	31460	8585	49438	40853	17977	1.57	5.8	275	3803
6	Seed cotton + wheat	420	30	135766	45631	162422	116791	26656	1.20	3.6	387	5414
7	Seed cotton+sunflower	420	40	121169	42453	144331	101879	23163	1.19	3.4	344	3608
8	IRRI paddy + wheat	360	68	105149	37249	146250	109001	41101	1.39	3.9	406	2151
9	IRRI paddy+sunflower	360	78	90551	34070	128159	94090	37608	1.42	3.8	356	1643
10	Sugarcane	488	71	116096	37238	152790	115552	36694	1.32	4.1	313	2152

Notes for Annex –XI

1. The economic analysis presented in the above exercise is based on the input-output prices applicable for 2020-21 crops.
2. The data regarding input-output parameters have been adopted from the API's price policy papers for sugarcane, seed cotton, rice paddy and wheat, 2020-21 crops. However, the relevant data for sunflower and canola were adopted from the last support price policy for non-traditional oilseeds 2000-01 crops, with necessary adjustments in input prices for updating costs and incomes for the 2020-21 crops. To incorporate the escalations in input prices, which occurred during the growing period of 2020-21 crops, some marginal revisions/updates have been incorporated.
3. Water use has been estimated from the number of irrigations as reported in the cost of production estimates of the respective crops assuming each irrigation of 3 inches and 'rauni' of 4 inches.
4. The following prices as realized by the growers for different crops are adopted for the analysis:
 - 4.1 The support price of Rs 1800 per 40 kgs, as maintained by the Punjab and Rs 2000 by Sindh for 2020-21 crop, have been adopted for the current analysis.
 - 4.2 The wholesale market prices of basmati paddy and IRRI paddy during the post- harvest period in major producer area markets have averaged at Rs 2000 and Rs 1300 per 40 kgs, respectively. While, the average price of IRRI paddy in Sindh is reported at Rs 1500 per 40 kgs.
 - 4.3 The wholesale market prices of seed cotton during the post-harvest months of 2020-21 in the main producer area markets have averaged at Rs 4524 per 40 kgs in the Punjab and Rs 4241 Sindh.
 - 4.4 The price of Sunflower crops has been reported hovering around Rs 4000/40 kgs and Rs 4000/40 kgs for Canola during 2020-21.
 - 4.5 The average market prices of sugarcane as realized by the farmers are taken for the analysis i.eRs 250 per 40 kgs in the Punjab and Sindh. However, the prices notified by the provincial governments were lower i.eRs 200 and 202, respectively for Punjab and Sindh.
5. The market prices have been adjusted for the marketing expenses to make them effective at the farm level. These expenses amount to Rs 18.5 per 40 kgs in Punjab and Sindh for sugarcane, Rs 40 for seed cotton in Punjab and Sindh, Rs 50 for rice paddy in Punjab and Sindh, and for wheat and oilseeds, Rs 40 in Punjab and Rs 45 in Sindh.
6. Gross income = (Yield per acre multiplied by price of principal produce at farm gate) plus (value of by-products per acre).
7. Cost of purchased inputs = Cost incurred on seed and related items, fertilizer, supplementary irrigation including

labour, canal water rate, pesticides and weedicides.

8. Gross margin = Gross income minus cost of purchased inputs.
9. Net income = Gross income minus gross cost.
10. Output-input ratio = Gross income divided by gross cost
11. Revenue per rupee of purchased inputs cost = Gross income divided by cost of purchased inputs
12. Revenue per crop day = Gross income divided by crop duration in days.
13. Revenue per acre-inch of water used = Gross income divided by irrigation water used in acre inches.

**ECONOMIC EFFICIENCY OF RESOURCE USE IN WHEAT PRODUCTION IN PUNJAB
POLICY ANALYSIS MATRIX (PAM)**

Based on Import parity prices and Export Parity Prices

Description	Revenues	Traded cost	Domest Factor cost	Profits
Import Parity Prices	----- Rupees per acre -----			
2015-16				
Private Prices	37355	17299	18941	1115
Social Prices	35266	16504	18815	-53
Transfers	2089	795	127	1167
2016-17				
Private Prices	43500	18454	23908	1138
Social Prices	33470	17417	23753	-7700
Transfers	10030	1038	154	8838
2017-18				
Private Prices	43500	16615	25399	1487
Social Prices	42423	15650	25494	1278
Transfers	1077	965	-96	208
2018-19				
Private Prices	46500	18355	26850	1295
Social Prices	53433	17117	26564	9752
Transfers	-6933	1238	286	-8456
2019-20				
Private Prices	50919	21328	27287	2303
Social Prices	67637	19613	27180	20843
Transfers	-16718	1715	107	-18540
2020-21				
Private Prices	60400	23619	30019	6762
Social Prices	66728	21566	25854	19308
Transfers	-6328	2053	4165	-12546
Export Parity Prices				
2015-16				
Private Prices	37355	17299	18941	1115
Social Prices	20446	16504	18815	-14872
Transfers	16909	795	127	15987
2016-17				
Private Prices	43500	18454	23908	1138
Social Prices	28356	17417	23753	-12814
Transfers	15144	1038	154	13952
2017-18				
Private Prices	43500	16615	25399	1487
Social Prices	29073	15650	25494	-12072
Transfers	14427	965	-96	13558
2018-19				
Private Prices	46500	18355	26850	1295
Social Prices	36333	17117	26564	-7348
Transfers	10167	1238	286	8644
2019-20				
Private Prices	50919	21328	27287	2303
Social Prices	45389	19613	27180	-1405
Transfers	5530	1715	107	3708
2020-21				
Private Prices	60400	23619	30019	6762
Social Prices	45532	21566	25854	-1888
Transfers	14868	2053	4165	8650

**ECONOMIC EFFICIENCY OF RESOURCE USE IN WHEAT PRODUCTION IN SINDH
POLICY ANALYSIS MATRIX (PAM)**

Based on Import parity prices and Export Parity Prices

Description	Revenues	Traded cost	Domest Factor cost	Profits
Import Parity Prices ----- Rupees per acre -----				
2015-16				
Private Prices	37028	18556	17355	1118
Social Prices	35419	16988	17316	1115
Transfers	1609	1568	39	3
2016-17				
Private Prices	40500	17474	19455	3572
Social Prices	33470	16015	19552	-2097
Transfers	7030	1459	-97	5668
2017-18				
Private Prices	40500	17936	20133	2432
Social Prices	36050	16490	20172	-612
Transfers	4450	1445	-39	3044
2018-19				
Private Prices	44813	20100	22531	2182
Social Prices	48014	18392	22823	6800
Transfers	-3202	1708	-292	-4618
2019-20				
Private Prices	53185	22733	26238	4214
Social Prices	60489	20693	26298	13498
Transfers	-7304	2039	-60	-9284
2020-21				
Private Prices	63900	25737	28855	9308
Social Prices	60329	23070	29032	8226
Transfers	3572	2666	-177	1082
Export Parity Prices				
2015-16				
Private Prices	37028	18556	17355	1118
Social Prices	20533	16988	17316	-13771
Transfers	16496	1568	39	14889
2016-17				
Private Prices	40500	17474	19455	3572
Social Prices	28356	16015	19552	-7211
Transfers	12144	1459	-97	10783
2017-18				
Private Prices	40500	17936	20133	2432
Social Prices	22700	16490	20172	-13962
Transfers	17800	1445	-39	16394
2018-19				
Private Prices	44813	20100	22531	2182
Social Prices	30558	18392	22823	-10657
Transfers	14254	1708	-292	12838
2019-20				
Private Prices	53185	22733	26238	4214
Social Prices	39407	20693	26298	-7584
Transfers	13778	2039	-60	11798
2020-21				
Private Prices	63900	25737	28855	9308
Social Prices	39802	23070	29032	-12300
Transfers	24098	2666	-177	21609

**IMPACT OF RISE IN SUPPORT PRICE OF WHEAT ON
AVERAGE HOUSEHOLD EXPENDITURE**

Proposed support price	Expenditure on wheat at average per capita @ 115kgs per year **		Rise in annual per capita expenditure	
	Person	Per household	Person	Per household
	Rs per 40 kgs		--- Rupees per year ----	
*1800	5175	32809	-	-
1850	5319	33722	144	913
1900	5462	34629	287	1820
1950	5606	35542	431	2733
2000	5750	36455	575	3646
2050	5894	37368	719	4559
2100	6037	38278	862	5469
<p>Note: Average size of household comprises of 6.34 members.</p> <p>*Existing price for 2021-22 wheat crop.</p> <p>** Recommended by API.</p> <p>Source: PSLM household Integrated Survey (HIES) 2018-19, Pakistan</p> <p align="center">Bureau Of Statistics (PBS), Islamabad.</p>				

LIST OF WHEAT VARIETIES RELEASED ACROSS PAKISTAN

Wheat Coordination Division, PARC, Islamabad.			
S. No.	Varieties Name	Year of Release	Yield Potential (Kgs/ha)
1	AARI-11	2010	6000-6500
2	Tijaban-2010	2010	5500-6500
3	NIA-Amber	2010	6000
4	NIA-Sunehri	2010	6500
5	Janbaz	2010	5500-6000
6	Atta-Habib	2010	6000-6500
7	Amin-2008	2010	6000-6500
8	Siren	2010	6000-6500
9	KT-2009	2010	5000-5500
10	Kohat-2010	2010	5000
11	Millat-11	2011	6000-6500
12	AARI-11	2011	6000-6500
13	Punjab-11	2011	6500-7000
14	NARC-2011	2011	6000-6500
15	AAS-11	2011	6000-6500
16	Dharabi-11	2011	5500-6000
17	Pakistan 13	2013	6000
18	Shahkar-CCRI	2013	5500
19	Pirabak-2013	2013	6000
20	NIFA Lama	2013	5000
21	Benazir 13	2013	7500-8000
22	Galaxy	2013	6500-7000

WHEAT VARIETIES DEVELOPED BY WHEAT PROGRAM- NARC					
S. No.	Variety	Yield Potential (Kg/ha)	Salient features	Adaptability	Recommended by
1	Markaz - 2019	6800	<ul style="list-style-type: none"> · Resistance to yellow rust, leaf rust and stem rust race Ug99. · High protein content (15 %) and test weight (78.7 kg/hl) · Medium maturing wheat variety 	Punjab Rainfed	Punjab Seed Council - 2019
2	Borlaug - 2016	7000	<ul style="list-style-type: none"> · APR to all three rusts particularly to stem rust race Ug99. · Better adaptability for late sowing. · Medium maturing wheat variety 	Punjab Irrigated area	Punjab Seed Council - 2016
3	Zincol - 2016	6500	<ul style="list-style-type: none"> · High Zn content (35 ppm) in grain · Resistance to yellow rust, leaf rust and stem rust race Ug99. · Better adaptability for late sowing · Protein content – 12% · Medium maturing wheat variety. 	Punjab & KP - Irrigated area	Punjab Seed Council, 2016 KP Seed Council - 2016

4	Pakistan - 2013	7000	<ul style="list-style-type: none"> · Resistant to leaf rust, yellow rust & stem rust race of Ug99 · Protein content (12%) · Medium maturing wheat variety 	Punjab Rainfed	Punjab Seed Council, 2013
5	NARC-2011	6500	<ul style="list-style-type: none"> · Resistance to yellow, stem and leaf rust and stem rust race Ug99. · Better adaptability to Southern Punjab and Sind province. · Protein content (12.31%) · Medium maturing wheat variety. 	Punjab Irrigated area	Punjab Seed Council 2011
6	NARC-2009	5200	<ul style="list-style-type: none"> · Resistance to yellow and leaf rust · Protein content (2.28%) · Medium maturing wheat variety 	Punjab Rainfed	Punjab Seed Council 2009

WHEAT RESEARCH INSTITUTE, FAISALABAD				
Sr. No.	Varieties	Year of Release	Sowing Time	Yield Potential (Maund/Acre)
1	Akbar 2019	2019	1st November-10th December	76
2	Anaj 2017	2017	1st November-10th December	76
3	Ujala 2016	2016	1st November-20th December	68
4	Galaxy 2013	2013	1st November-10th December	80
5	AARI 2011	2011	1st November-10th December	67
6	Punjab 2011	2011	1st November-10th December	70
7	Millat 2011	2011	1st November-10th December	64
8	Lasani 2008	2008	1st November-10th December	62
9	FSD. 08	2008	1st November-10th December	68

BARANI AGRICULTURAL RESEARCH INSTITUTE, CHAKWAL						
Sr. No.	Varieties	Year of Release	Sowing Time	Yield Potential (Maund/Acre)	Recommended Areas	Salient Features
1	Chakwal-50	2008	20th October-20th November	105.13	Barani areas of Punjab	<ul style="list-style-type: none"> • Disease Resistant • High Tillering • High Yielding • Lodging Resistant • Excellent

						Chapati Making Quality
2	Bars-09	2009	20th October-20th November	48.53	Barani areas of Punjab	<ul style="list-style-type: none"> • Disease Tolerant • High Yielding
3	Dharabi-11	2011	20th October-20th November	60.32	Barani areas of Punjab	<ul style="list-style-type: none"> • Tall variety • Ug-99 Race Resistant • High Yielding • White Grain
4	Ehsan 16	2016	20th October-20th November	74.94	Barani areas of Punjab	<ul style="list-style-type: none"> • Disease Tolerant • High Yielding • Drought Tolerant
5	Fateh Jang 16	2016	20th October-20th November	75.12	Barani areas of Punjab	<ul style="list-style-type: none"> • Disease Tolerant • High Yielding • Drought Tolerant • Reddish Grain
6	Barani-17	2017	20th October-20th November	75.35	Barani areas of Punjab	<ul style="list-style-type: none"> • Disease Tolerant • High Yielding • Drought Tolerant • High Protein

Annex-XVI

**YIELD PER HECTARE OF MAJOR WHEAT PRODUCING COUNTRIES IN THE
WORLD:2019 CROP**

S.No.	Country	Yield / Hactare in kgs	S.No.	Country	Yield per Hectare in kgs
1	Ireland	9378.70	32	Serbia	4389.00
2	Netherlands	9378.10	33	Poland	4303.49
3	Belgium	9336.38	34	Lithuania	4291.16
4	United Kingdom	8934.47	35	Ukraine	4156.63
5	New Zealand	8846.49	36	Albania	4067.99
6	Denmark	8095.73	37	Oman	3849.84
7	France	7742.76	38	Italy	3840.94
8	Sweden	7405.48	39	Bosnia and Herzegovina	3839.18
9	Germany	7396.36	40	Republic of Korea	3750.00
10	Zambia	6687.66	41	Uruguay	3667.34
11	Egypt	6378.85	42	India	3533.44
12	Chile	6285.98	43	North Macedonia	3484.77
13	Luxembourg	6157.19	44	United States of America	3474.79
14	Saudi Arabia	6068.25	45	Canada	3350.17
15	Switzerland	5751.44	46	Belarus	3326.84
16	Norway	5738.72	47	Republic of Moldova	3259.59
17	Austria	5737.16	48	Argentina	3215.98
18	Czechia	5732.52	49	Kuwait	3200.00
19	China, mainland	5629.85	50	Lebanon	3170.73
20	Croatia	5611.39	51	Tajikistan	3170.50
21	Mexico	5530.82	52	Azerbaijan	3155.46
22	Hungary	5294.90	53	Spain	3146.30
23	Bulgaria	5272.16	54	Bangladesh	3078.00
24	Slovenia	5230.45	55	Namibia	3050.00
25	Estonia	5069.95	56	Ethiopia	2970.47
26	Japan	4900.76	57	Nepal	2848.99
27	Latvia	4812.26	58	South Africa	2842.59
28	Slovakia	4766.56	59	Niger	2837.37
29	Romania	4748.78	60	Montenegro	2818.18
30	Uzbekistan	4649.26	61	Iraq	2814.38
31	Finland	4626.42	62	Pakistan	2805.92
World Average					3546.84

Source: FAO Production Year Book 2019