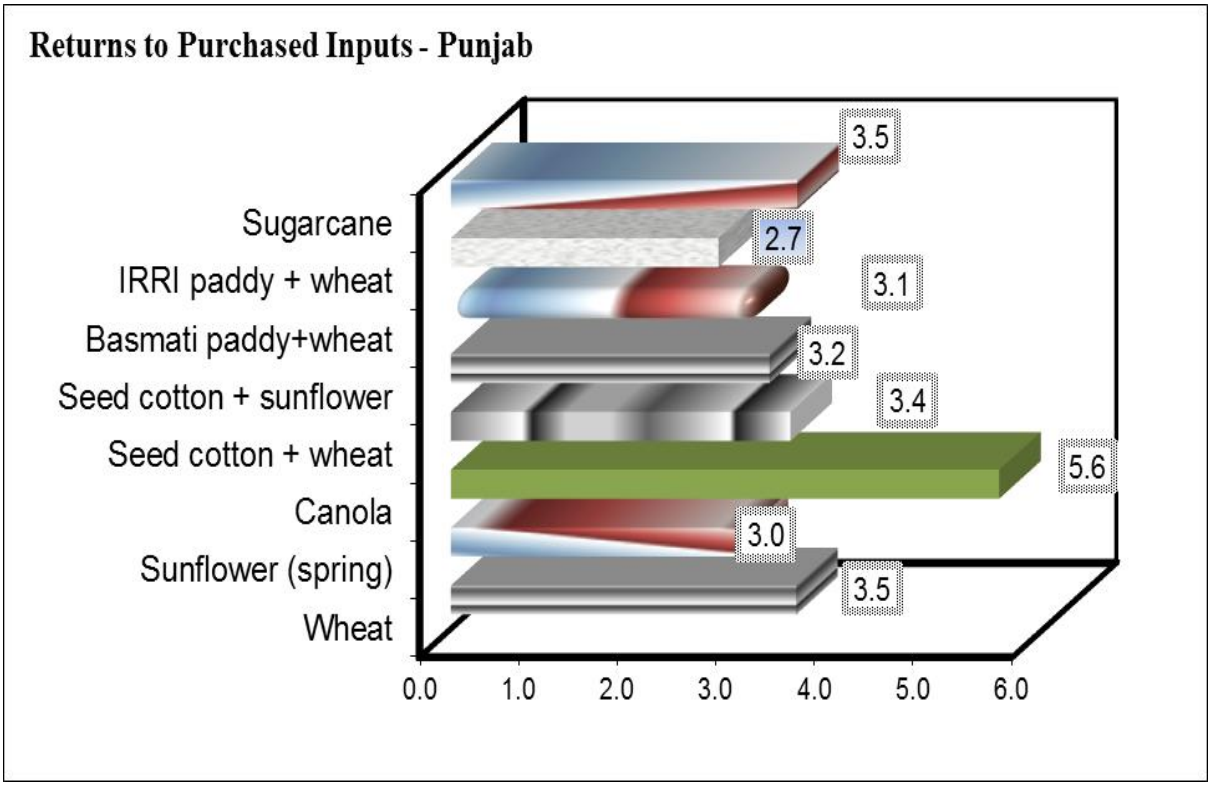
API SERIES NO.275

WHEAT POLICY ANALYSIS FOR 2020-21 CROP

AGRICULTURE POLICY INSTITUTE

MINISTRY OF NATIONAL FOOD SECURITY AND RESEARCH
GOVERNMENT OF PAKISTAN
ISLAMABAD

December 2020



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 several 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 uncontainable 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 analyses and producing of important reports concerning agriculture and food security.

(**Abdul Karim**)
Director General

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Table of Acronyms and Abbreviations

Acronym	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

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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 87 per cent of the area and contribute about 91.3 per cent in wheat production. While the share of Khyber Pakhtunkhwa and Balochistan is 13 per cent in area and 8.8 per cent in production.
- During the decade ending 2019-20, wheat production has been observed a sluggish growth of 0.6 per cent per annum, while area squeezed by 0.1 per cent.
- Wheat production from 2019-20 crop is reported at 25.37 million tonnes, showing 4.2 per cent higher than the production of 24.35 million tonnes in 2018-19.
- 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 116 kgs per annum, the domestic requirement of wheat for human consumption comes to 25.78 million tonnes for the year 2020-21.
- Assuming the per capita consumption at 115 kgs per annum, the domestic requirement for human consumption comes to 25.55 million tonnes.
- Including one million tonnes as food security reserve and 2.56 million tonnes for seed, feed and wastage, the total domestic requirement will range between 22.22 and 29.33 million tonnes. Adding the last year stocks, the surplus estimates at (-)2.89 to 4.00 million tonnes, respectively.

Domestic Prices

- Monthly average market prices of wheat for 2019-20 crop higher than the support price in Punjab and Sindh.
- The wholesale prices of wheat averaged at Rs 1518 per 40 kgs in the Punjab and Rs 1419 in Sindh during the post harvest season in major producing areas.

Cost of Production

- In Punjab, the cost of wheat cultivation for 2020-21 season is estimated at Rs 43,313 per acre including land rent.
- The cost of production at market / procurement centre level would be Rs 1587 per 40 kgs for 2020-21, which is higher by Rs 237.3 than the corresponding COP of Rs 1350 in 2019-20.
- In Sindh, the gross cost of wheat cultivation for 2020-21 crop is probable at Rs 45,556 per acre including land rent.
- The cost of production at market / procurement centre level would come to Rs 1539 per 40 kgs, showing increase of Rs.231.42 over the last year.

Economics of Wheat and Competing Crops

- Wheat crop has shown relatively lower performance during 2019-20 and farmers received a small margin over the cost of wheat production (5 %). In Punjab, Wheat crop has performed lower than sunflower in terms of output input ratio, however, better in terms of other criteria except crop duration, where Sunflower, has out-performed wheat. Canola crop has given better rewards over wheat and sunflower in terms of returns to overall investment and returns to purchased inputs.
- In Sindh, the returns to overall investment in wheat crop remained higher than oilseed crop sunflower but lower than canola during 2019-20. 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, sugarcane performed better than wheat crop combination with cotton in respect of input/output ratio, but lagged behind crop duration and irrigation water. IRRI combination, however, paid returns to the growers lower against the sugarcane.

Economics of Fertilizer Use

- The quantity of wheat needed to buy one nutrient tonne of Nitrogenous fertilizer has fluctuated from 1.29 to 2.90 tonnes during the decade of 2008 to 2020.
- During 2019-20, the parity ratio between market prices of Nitrogen and wheat was not in favour of wheat due to high prices of Nitrogen fertilizer and 2.27 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 2008 to 2020.
- During 2019-20, the parity ratio between market prices of Phosphatic and wheat purchasing power has worsend further and around 3.40 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 2019-20 have experienced an overall increase of 8 per cent, while the real support prices have decreased by (-17.37) per cent over the base year.

Nominal and Real Market Prices

- The nominal market prices of wheat have shown an overall increase of 22 per cent, against the base year, while the real market prices have shown, receded by (-7.5) per cent due to rise in CPI (30.33%).

World Production and Prices

- World wheat production estimated at 762 million tonnes in 2019-20 is higher than 4.10 million tonnes than the last year, while it is forecast at 762 million tonnes in 2020-21.
- The closing stocks at 261 million tonnes in 2018-19 and increase to 276 million tonnes in 2019-20 and are forecast at 288 million tonnes in 2020-21,an increase of 12 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.

- During 2020-21, international prices of US No. 2 HRW wheat have averaged at US $ 230 per tonne and that of SRW at US $ 238 per tonne.

Export/Import Parity Prices

- Based on the average Fob (gulf) price of US HRW and US SRW wheat during 2019-20, the export parity price works to Rs 1226 and 1239 per 40 kgs. The export parity price calculates to Rs 1271 and 1143 per 40 kgs, respectively on the basis of average fob price during 2017-18 to 2019-20. For 2020-21 (July-Sept), these prices are equivalent to Rs 1290 and 1341 for HRW and SRW, respectively.
- Based on the Fob price during 2020-21 (July-Sept), the import parity prices of US $ 2 HRW calculate to Rs 2042 per 40 kgs at Multan and Rs 1958 per 40 kgs at Karachi while for SRW, the prices worked out at Rs 2098 at Multan and Rs 2014 per 40 at Karachi. These prices were relatively lower during 2019-20.
- Based on the average Fob (gulf) price during 2017-18 to 2019-20, the import parity price of US $ HRW works to Rs 2021 per 40 kgs at Multan, while Rs 1937 per 40 kgs at 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 during last two years.
- 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 favourable prospects for wheat export from Pakistan.
- The DRCs in Punjab and Sindh under import scenario are less than one, except 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 indicates 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 25 per 40 kgs over the existing level of Rs 1400 per 40 kgs, the CPI would likely to rise by 0.0331 per cent.

- Likewise, the increase of Rs 100 per 40 kgs over the existing support price would bring additional expenditure of Rs 290 per capita per year or Rs 1810 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 2020-21 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 2019-20, if exported from Multan	1226	1239
	b)	Fob (gulf) average prices of US HRW & SRW wheat during 2017-18 to 2019-20, if exported from Multan	1271	1143
	c)	Fob (gulf) prices of US HRW & SRW wheat during 2020-21 (Jul-Sep), if exported from Multan	1290	1341
2.	**Import parity price on the basis of:**			
	a)	Fob (gulf) prices of US HRW & SRW wheat during 2019-20, if consumed at:		
		- Karachi	1888	1902
		- Multan	1972	1986
	b)	Fob (gulf) price of US HRW & SRW wheat during 2017-18 to 2019-20, if consumed at:		
		- Karachi	1937	1797
		- Multan	2021	1881
	c)	Fob (gulf) price of US HRW & SRW wheat during 2020-21 (July-Sep), if consumed at:		
		- Karachi	1958	2014
		- Multan	2042	2098
3.	**Monthly average wholesale market prices of wheat in major producing areas during the post-harvest period of 2019-20 crop:**			
		- Punjab	1518	-
		- Sindh	1419	-
4.	**Cost of production estimates at market/procurement centre level for 2020-21 crop:**			
		- Punjab	1587	
		- Sindh	1539	

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 2020-21 wheat crop:

Support Price

- The API 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 crop situation, stocks, consumption and production estimates of wheat, 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.
- PASSCO and Provincial Food Departments being the implementing agencies should make prior arrangements for wheat prourement and enter in the field well in time, especially in Sindh province where the harvesting starts early.

Improving Poductivity

- 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, herbicies, 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.
- The prices of ploughing tubewell irrigation/mechanical harvesting and threshing do not responed to diesel/petrol prices. Government should ensure that benefit of reduced prices of petroleum products should be trickled down at farm level.

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.

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WHEAT POLICY ANALYSIS FOR 2020-21 CROP

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1. INTRODUCTION

1. Wheat is one of the largest crops of the country and the staple diet. Wheat contributes about 8.7 per cent to the value added in agriculture and 1.7 per cent to the GDP[1]. The crop occupies around 39.54 per cent of total cropped area. It is generally cultivated on 8.7 million hectares with an annual average production of 25.0 million tonnes (2017 - 20) wheat production. About 88.1 per cent of wheat area is irrigated which accounts 94.0 per cent of the annual production. During certain years like 2010-11 and 2011-12, wheat was exported in high quantity. During 2019-20, wheat production target was 25.60 million tonnes fixed by the (FCA). However, the production got down by (-) 0.9 per cent yield by 2.0 per cent and area by (-) 2.8 per cent against the target.

2. Amongst the large 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 hectare[2]. 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 2.75 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 2019-20 and approved Rs 1400 per 40 kgs in February 2020.

4. Wheat procurement during 2019-20 was reported at 6.59 million tonnes, against the target of 8.25 million tonnes[3]. Procurement agencies have achieved 79.93 per cent of the target fixed by the

[1] Economic Survey of Pakistan, 2019-20.
[2] Food and Agriculture Organization.
[3] M/o National Food Security and Research.

government. Provincial food Departments collectively achieved 83.97 percent and 65.44 percent by PASSCO.

5. The price policy recommendations for 2020-21 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 Sindh during 24-29 July and in the Punjab, during 10-18 August,2020 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. Wheat being the staple and a major food security crop of 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.

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 below:

Table-1: Recommended Sowing and Harvesting Times of Wheat

Provinces		Times
Punjab		
i)	Southern	1st November to 30th December
ii)	Central	1st November to 15th December
iii)	Northern:	

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

Source: PARC, Islamabad.

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

10. In Sindh, wheat sowing commences from 1st November and goes up to 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 up to 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 end 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 2019-20 CROP

3.1. Provincial Shares in Area and Production

14. Based on average ending 2017-18 to 2019-20, the Punjab and Sindh contribute about 76.2 and 15.1 per cent in total wheat production while the shares of the KPK and Balochistan are around 5.1 and 3.7 per cent, respectively. The provincial shares of area and production are presented in Table-2 and depicted in Figures 1 and 2.

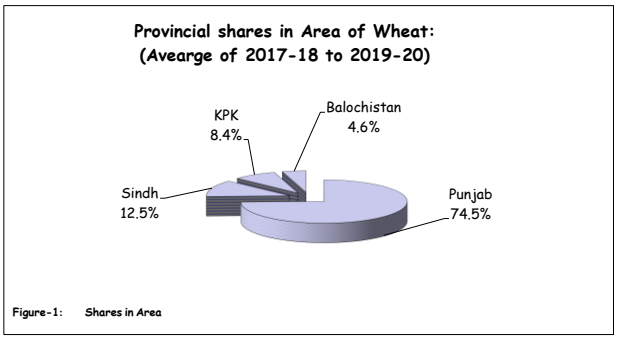


Figure-1: Shares in Area

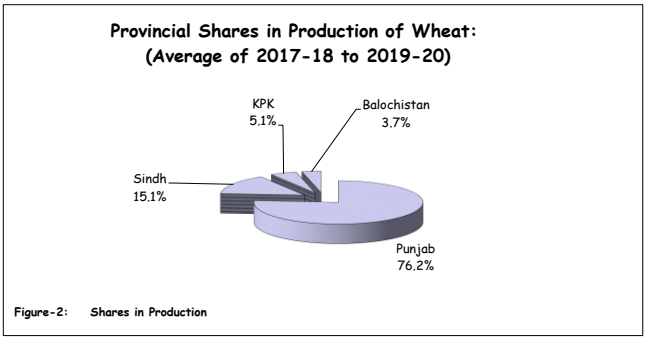


Figure-2: Shares in Production

15. Around 88.1 per cent of wheat acreage is cultivated under irrigated conditions which contribute 94.0 per cent of wheat production in the country.

Table-2: Average Share of different provinces in Area and Production of Wheat (2017-18 through 2019-20)

Item/ Province	Total	Pakistan	Punjab	Sindh	KP	Balochistan
	000 hect.	---------- **Per cent** ----------				
A. Area						
Total	**8759.9 (21646.7)**	**100.0**	**74.5**	**12.5**	**8.4**	**4.6**
Irrigated	7714.8 (19064)	88.1	67.5	12.1	4.0	4.5
Un-irrigated	1045.2 (2582.7)	11.9	7.0	0.4	4.4	0.1
B. Production	000 tonnes	---------- **Per cent** ----------				
Total	**24930.9**	**100.0**	**76.2**	**15.1**	**5.1**	**3.7**
Irrigated	23436.6	94.0	72.6	14.8	2.9	3.7
Un-irrigated	1494.3	6.0	3.5	0.3	2.2	0.0

Note: Figures in parentheses are thousand acres.

Source: Worked out from Annex-I.

3.2.Long-term Changes: 2009-10 to 2019-20

16. During the decade ending 2019-20, wheat production at country level has surged @ 0.6 per cent per annum owing to 0.8 per cent improvement in yield however 0.1 per cent decline in area. In the Punjab, wheat production has increased @ 0.6 per cent annually due to 0.9 per cent improvement in yield though 0.3 per cent acreage reduction. In Sindh, wheat production decreased @ 0.3 per cent per annum due to fall of yield by 0.4 per cent whether 0.2 per cent surged the area of the crop. Annual growth rate of wheat production in KPK and Balochistan remained 1.0 and 4.1 per cent respectively.

Table-3: Average Annual Growth Rate of Area, Yield and Production of Wheat during 2009-10 through 2019-20

Country/ Province	Area	Yield	Production
	---------- Per cent per annum ----------		
Pakistan	**-0.1**	**0.8**	**0.6**
Punjab	-0.3	0.9	0.6
Sindh	0.2	-0.4	-0.3
KPK	0.0	1.0	1.0
Balochistan	1.3	2.7	4.1

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: 2014-15 to 2019-20

17. The annual growth rate for the period 2014-15 to 2019-20 shows that in Pakistan wheat production has decreased @ 0.5 per cent solely due to 1.2 per cent decrease of area despite of yield increased @ 0.8 per cent 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: 2014-15 to 2019-20

Country/Province	Area	Yield	Production
	--------- Per cent per annum ---------		
Pakistan	**-1.2**	**0.8**	**-0.5**
Punjab	-1.5	0.9	-0.6
Sindh	-0.6	1.0	0.4
KPK	-0.5	-1.6	-2.1
Balochistan	1.7	0.0	1.7

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 2019-20 crop against 2018-19

18. Wheat production from 2019-20 crop is reported at 25.367 million tonnes at the country level, showing 4.2 per cent higher over 24.349 million tonnes in 2018-19 due to increase of 1.5 and 2.7 per cent in area and yield respectively. These statistics are produced in Table-5 that is depicted in figures 3 and 4.

Table-5: Area, Yield and Production of Wheat: 2018-19 and 2019-20 Crops

Country/ Province	Area		Changes	Yield per hectare		Changes	Production		Changes
	2018-19	2019-20		2018-19	2019-20		2018-19	2019-20	
	-- 000 hectares --		Per cent	-----Kgs ----		Per cent	-- 000 tonnes --		Per cent
Pakistan	**8677.8**	**8804.7**	**1.5**	**2806**	**2881**	**2.7**	**24349.0**	**25367.5**	**4.2**
Punjab	6495.9	6515.3	0.3	2829	2978	5.3	18377.2	19401.9	5.6
Sindh	1052.7	1134.2	7.7	3590	3396	-5.4	3778.9	3852.3	1.9
KP	739.6	727.3	-1.7	1795	1554	-13.4	1327.6	1130.3	-14.9
Balochistan	389.6	427.9	9.8	2221	2297	3.4	865.3	983.0	13.6

Source: Annex-IA.

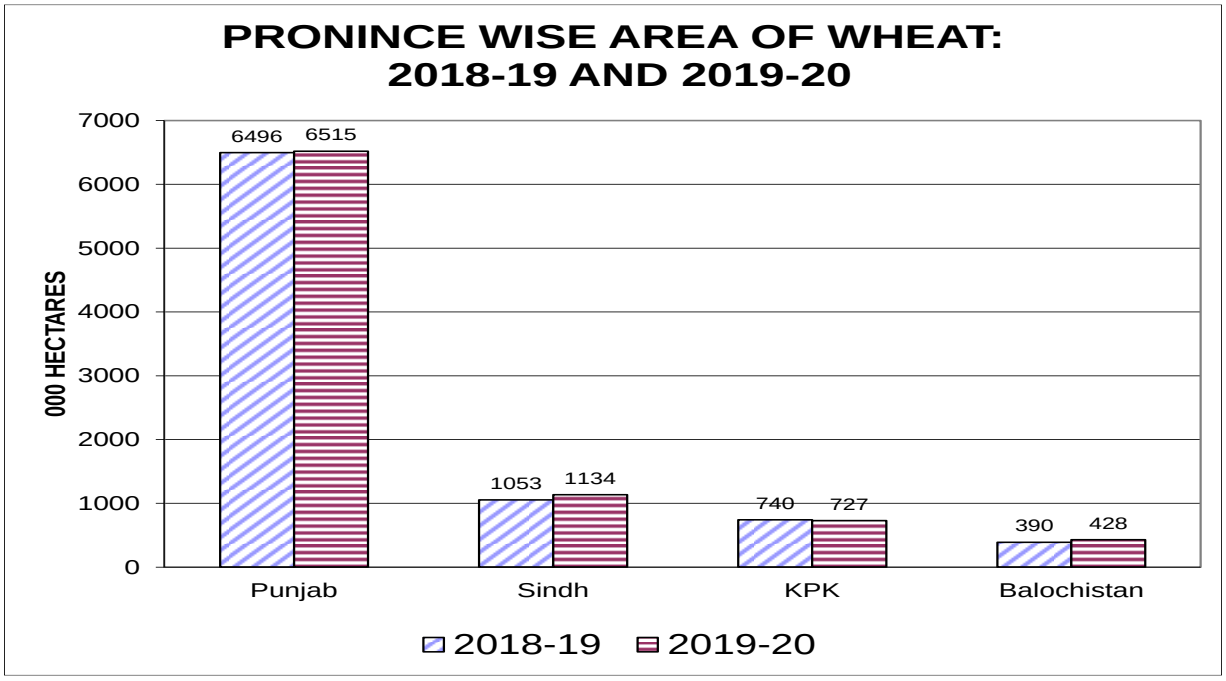


Figure-3: Figure shows province wise area of wheat in Hectres

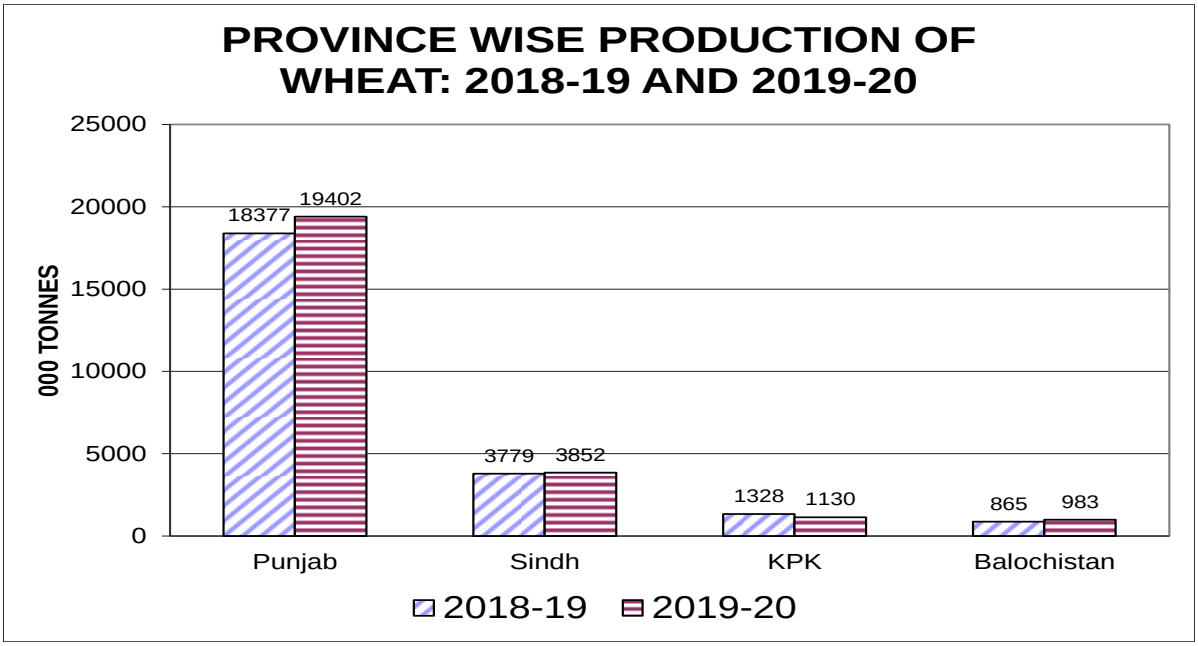


Figure-4: Figure shows province wise area of wheat in Tonnes

3.5.Important Wheat Producing Districts

19. The only Bahawalnagar district is 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 Rahim Yar Khan, Bahawalpur, Muzaffargarh, Jhang, Faisalabad, Vehari, Khanewal, Gujranwala, Sheikhupura, Rajanpur, Lodhran, D.G.Khan, Layyah, Multan, Okara, Sargodha, T.T.Singh. Hafizabad, Kasur, Sahiwal, Sialkot and Pakpattan. These 23 districts produce 62 per cent of total wheat production in Pakistan while their share in area is estimated at 56 per cent. Nankana Sahib, Mianwali, M.B.Din, Bakhar, Narowal, Chinniot, Attock and Gujrat from Punjab and Naushero Feroz, Khairpur, Ghotki, Sanghar, Shaheed Benazirabad and Dadu from Sindh, Nasirabad and Jaffarabad from Balochistan are other important wheat producing districts in the country. Different districts production shares are given in Annex-III.

3.6. Targets Vs Achievements: 2019-20 Crop

20. Wheat production target for 2019-20 crop was at 25.607 million tonnes from an evidence area of 9.062 million hectares by Federal Committee on Agriculture (FCA). However, production from the 2019-20 crop is reported at 25.368 million tonnes, declined by 0.9 per cent against the target. The production target could not be achieved due to reduction of 2.8 per cent in area. 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: 2019-20 Crop

Country/ Province	Area		Deviation from target	Yield per hectare		Deviation from target	Production		Deviation from target
	Targets	Achievements		Targets	Achievements		Targets	Achievements	
	000 ha		Percent	Kgs		Percent	000 tonnes	Percent	
Pakistan	**9062.0**	**8804.7**	**-2.8**	**2826**	**2881**	**2.0**	**25607.0**	**25367.5**	**-0.9**
Punjab	6560.0	6515.3	-0.7	2974	2978	0.1	19510.0	19401.9	-0.6
Sindh	1150.0	1134.2	-1.4	3304	3396	2.8	3800.0	3852.3	1.4
KP	802.0	727.3	-9.3	1698	1554	-8.5	1362.0	1130.3	-17.0
Balochistan	550.0	427.9	-22.2	1700	2297	35.1	935.0	983.0	5.1

Sources: 1. For targets: Minutes of the 14th meeting of FCA held on 08-07-2020 at Islamabad
2. For Achievements: Annex-II.

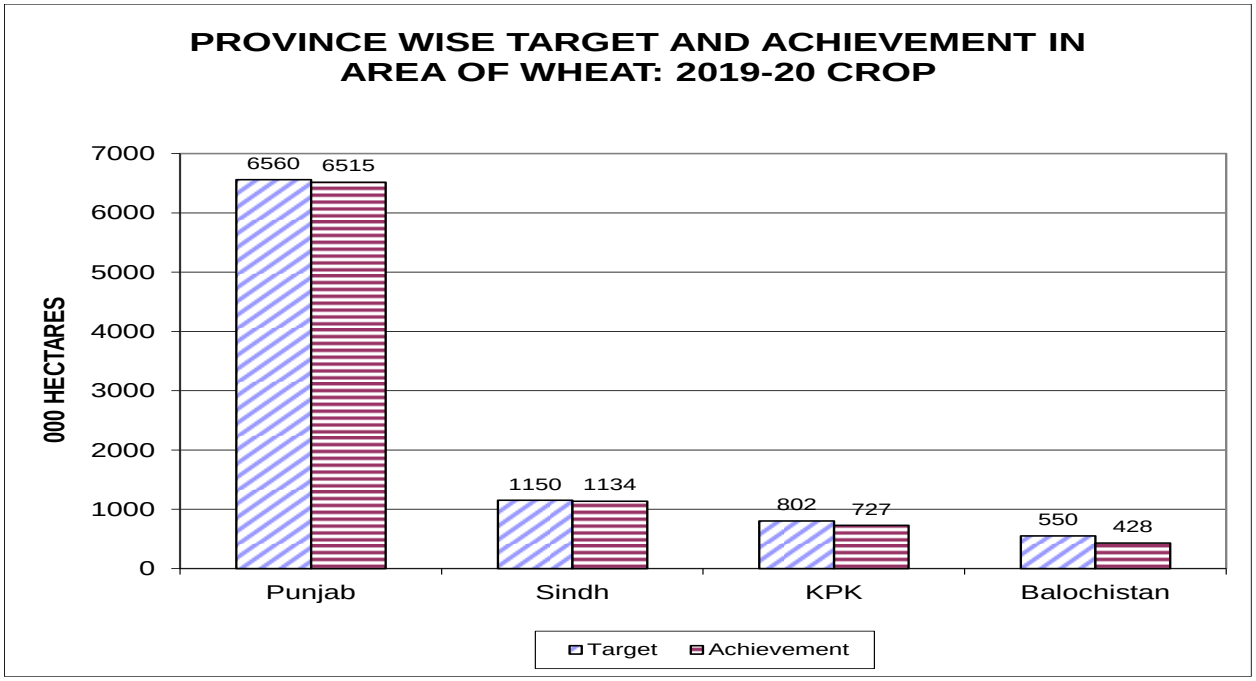


Figure-5.

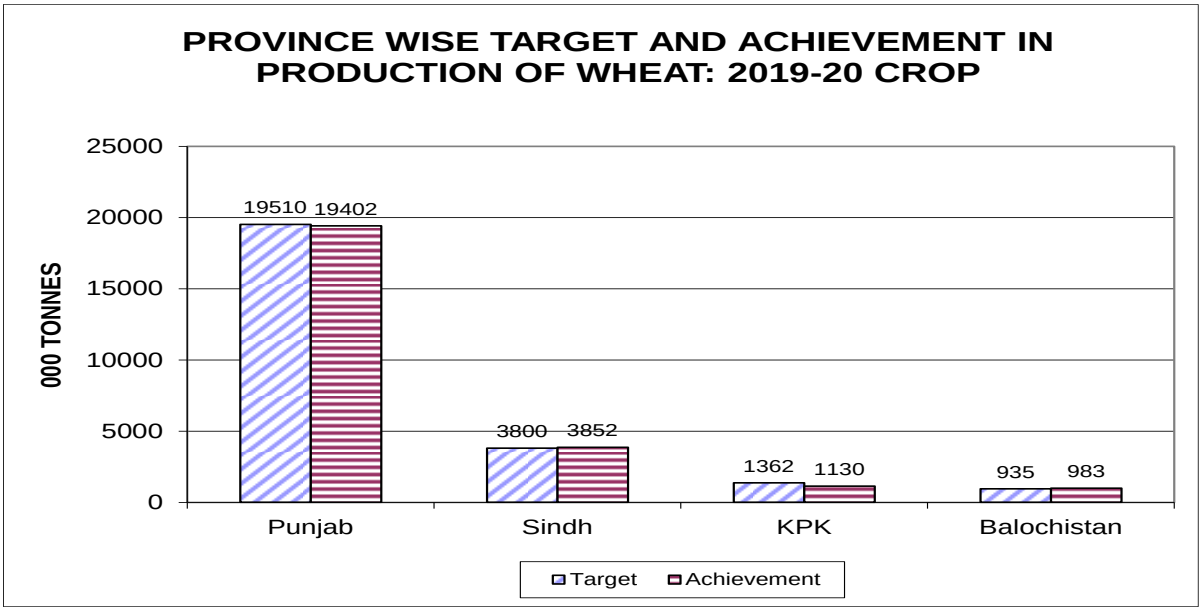


Figure-6

4. FACTORS CONSIDERED FOR PRICE POLICY ANALYSIS

21. Following major factors were considered for the analysis of the price policy of wheat 2020-21 crop:

- Domestic Demand, Supply, Stocks and Price Situation
- World Production, Consumption, Stocks and Trade Situation
- International Price
- Export or Import Parity Prices
- Cost of Production
- Comparative Economics of Competing Crops
- Nominal and Real Support and Market Prices
- Economic Efficiency of Wheat Production in Pakistan
- Producer Prices of Wheat in Selected Countries
- 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

4.1.1. Domestic Demand, Supply and Stocks

22. During 2019-20, the country has produced 25.46 million tons wheat. After adding the carryover stocks of 0.64 million tons as on May 1, 2020, total wheat supply in the country for 2020-21 consumption year would be 26.10 million tonnes. This supply may slightly increase if production of wheat in Azad

Kashmir and Gilgit Baltistan estimated at 0.13 million tonnes is added. Thus, total availability of wheat in the country would be 26.23 million tonnes.

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 116 kgs. 2. M/o National Food Security and Research is using 115 kgs per capita consumption.3. Pakistan Bureau of Statistics has reported in Household Integrated 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 2020-21 Wheat Year: (May-April)

S. No.	Item	Based on annual per capita Consumption on the basis of		
		M/o NFS&R	API	HIES PBS
		115 Kgs	116 Kgs	84 kgs
1.	Population (Million)	222.22	222.22	222.22
2.	Human consumption requirement (million tons)	25.55	25.78	18.66
3.	Allowance for seed, feed and wastage @ 10 per cent of total production of 2019-20 crop(million tons)	2.56	2.56	2.56
4.	Food Security reserves (million tons)	1.00	1.00	1.00
5.	Total requirements (million tons)	29.11	29.33	22.22
6.	Total supply (production + carry forwarded) (mil: tons)	26.22	26.22	26.23
7.	Surplus / Deficit(million tons)	-2.89	.-2.89	4.00

Source: Annex-IV.

24. API has calculated annual per capita availability of wheat requirement/ consumption for 2020-21 for the population of 222.20 million (including population of AJK area, Gilgit Baltistan and Afghan Refugees) by using above mentioned per capita requirements. According to balance sheet method it is estimated at 25.78 million tonnes. Accounting for seed, feed and wastage @ 10 per cent of production and strategic reserve of one million, gross domestic requirement for 2020-21 is estimated at to 29.3 million tonnes. However, this requirement would be 29.11 million tonnes if estimated at per capita availability of 115 Kgs per annum as suggested by M/o NSF&R and to 22.22 million tons of wheat is required for 2020-21,

if calculated on the basis of HIES data, 84 kgs per annum. Resultantly, the country has would shortfall (-)2.89 million tonnes respectively, if used the 116 and 115 kgs per capita consumption. However, if used the HIES data of 84 kgs per annum the, country will have 4.00 million tonnes surplus wheat.

4.1.2. Post-harvest prices

- **Punjab**

25. Monthly wholesale prices of wheat during the post-harvest months of 2019-20 crop in the major producing area markets of the Punjab and Sindh are presented in Table-8.

Table-8: Monthly Average Wholesale Prices of Wheat in Main Producing Area Markets of Punjab during Post-harvest Season of 2019-20 Crop

Markets	April	May	June	Average
	----------Rs per 40 kgs----------			
Faisalabad	1794	1450	1558	1601
Sargodha	1509	1396	1672	1526
Multan	1518	1429	1553	1500
Gujranwala	1465	1498	1629	1531
Okara	1400	1413	1578	1464
R. Y. Khan	1388	1462	1722	1524
Bahawalpur	1605	1427	1514	1515
D. G. Khan	1484	1425	1558	1489
Average	1520	1437	1598	1518

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

26. The statistics in Table-8 reveals that the monthly average wholesale prices of wheat in main producing areas of Punjab were much higher than the support price of Rs 1400 per 40 Kgs during the month of April to June 2020 except Raheem Yar Khan market in the month of April during post-harvest period. The seasonal average has ranged between Rs 1464 to Rs 1601 per 40 kgs which is above the support price of wheat.

- **Sindh**

27. In Sindh, the price of wheat ruled lower then support price of wheat during the post- harvest season of 2019-20 in the month of April to late starting of procurement by federal and provincial food departments. The lowest process was observed @ Rs 1330 in Larkana market during April 2020. In month of May 2020, the prices of wheat are at the level of support price or surpass support price of wheat. The seasonal average ranged between Rs 1390 per 40 kgs to Rs 1473 per 40 kgs.

Table-9: Monthly Average Wholesale Prices of Wheat in Main Producing Area Markets of Sindh during Post-harvest Season of 2019-20 Crop

Markets	April	May	June	Average
	----------Rs per 40 kgs----------			
Mirpur Khas	1385	1475	-	1430
Sanghar	1360	1450	-	1405
Hyderabad	1395	1550	-	1473
Nawabshah	1350	1450	-	1400
Larkana	1330	1450	-	1390
Sukkur	1385	1450	-	1418
Average	**1368**	**1471**	-	**1419**

Source: Director Agriculture Farms Major Crops, Sindh.

4.2. World Production, Consumption, Stocks and Trade Situation

28. The data on world production, consumption, stocks and trade situation from 2018-19 to 2020-21 are presented in Table-10.

Table-10: World Wheat Situation: 2018-19 to 2020-21

Items	2018-19	2019-20 (Estimated)	2020-21 (Forecast)
	……..Million tonnes…….		
Opening stocks	269	261	274
Production	732	762	762
Total Supply	1001	1023	1036
Consumption	740	747	750
Closing stocks	261	276	288
Trade	168	182	180

Source: Grain Market Report, International Grains Council, London, 23- 7- 2020

29. The world wheat production in 2019-20 is estimated at 762 million tonnes, 30 million tonnes or 4.10 per cent higher than that last year production of 732 million tonnes. Adding the opening stocks of 261 million tonnes, the world supply of wheat 2019-20 is estimated at 1023 million tonnes 6 million tons higher than the last year. Due to significantly increase in production during 2019-20, resultantly carryover stocks have been estimated to increase to 276 million tonnes as compared to 261 million tonnes last year's stock.

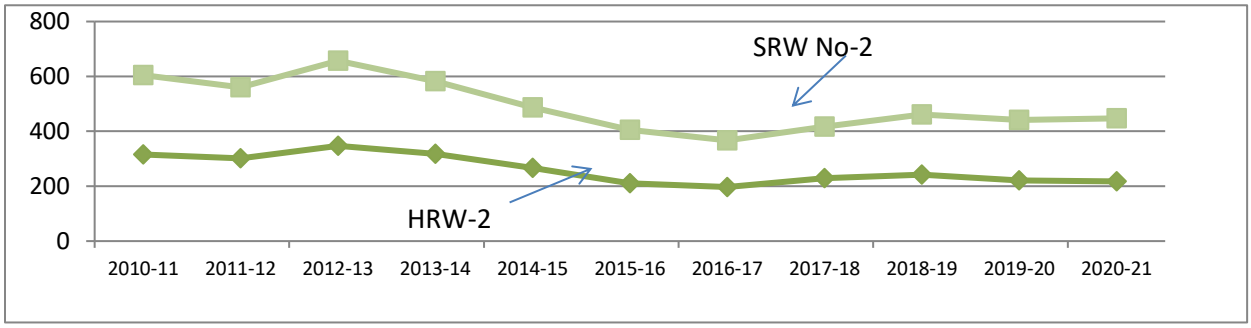
30. International Grains Council London reported that the global wheat production in 2020-21 is forecast remaining at same level of 762 million tonnes. Accounting for the opening stocks of 274 million tonnes, total supply would be at 1036 million tonnes against the consumption forecast of 750 million in 2020-21. Due to higher production forecast, the carryover stocks will be increased further significantly to 288 million tonnes, 12 million tonnes higher than last year stocks.

31. If the above mentioned forecast becomes true and carryover continuously piling up, the price of wheat in international market may remain stable with low volatility.

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) has also been used for the analysis.

33. Average Fob (Gulf) prices of US Hard Red Winter from 2010-11 to 2020-21 (Jul-Sept) are presented in Annex-V and reflected the graph below (Figure-7).



34. The prices averaged at US $ 316 per tonne during 2010-11 slightly declined in the next year and averaged at US $ 301 per tonne during 2011-12 but recovered sharply and averaged at US $ 347 per ton, the highest level of price during the period under review. The world prices of HRW wheat showed a decreasing trend next four years and dropped to US $ 197 per tonne in 2016-17, the lowest level of price during the period under review. The prices showed gradually upward trend and averaged at US $ 232 per tonne during 2018-19 but again drop to US$ 220 in 2019-20. In current season 2019-20, however, if increased by 4.5 per cent reached at US $ 230 per tonne in 2020-21.

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 historically used to remain lower than HRW during the period under review, surpassed price of the HRW during 2019-20 and 2020-21.

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-11 and 12, while the detail of these calculations may be seen at Annexes-VI and VII.

Table -11 Import Parity Price of Wheat on the Basis of US No 2 HRW and SRW Fob (Gulf) Price

Item	2020-21 Jul-Sept	During 2019-20	During 2017-18 to 2019-20
Fob Gulf price of HRW (US $ per tonne)	230	220	227
Import parity price per 40 kgs of wheat: i) if consumed at Multan ii) If consumed at Karachi	 2042 1958	 1972 1888	 2021 1937
Fob Gulf price of SRW (US $ per tonne)	238	222	207
Import parity price per 40 kgs of wheat: iii) if consumed at Multan iv) If consumed at Karachi	 2098 2014	 1986 1902	 1881 1797

Table-12: Export Parity Prices of Wheat on the Basis of No.2 HRW and SRW Fob (Gulf) Price

Item	2020-21 Jul-Sept	During 2019-20	During 2017-18 to 2019-20
Fob Gulf price of HRW assuming for FOB (Karachi) price (US $ per tonne)	230	220	227
Export parity price per 40 kgs at procurement centre	1290	1226	1271
Fob Gulf price of SRW assuming for FOB (Karachi) price (US $ per tonne)	238	222	207
Export parity price per 40 kgs at procurement centre	1341	3796	1143

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 2020-21 crop in the Punjab and Sindh have been estimated by adopting the input-output parameters used in the 2019-20 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 August 2020 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 29 July 2020 at Hyderabad, Sindh and August 25, 2020 at Islamabad. The details of the COP estimates for the Punjab and Sindh for 2019-20 and 2020-21 crops are presented at Annex-VIII and IX, respectively while the summary of these is presented in Table-13.

4.5.1. Average Farmers' Cost of Production of Wheat: 2019-20 and 2020-21 Crops

39. The cost of production estimates of wheat in the Punjab and Sindh for 2019-20 and 2020-21 crops are summarized and presented in Table-13.

Table-13: Average Farmers' Cost of Production of Wheat: 2019-20 and 2020-21 Crops

Items	Units	**2019-20 Crop**	**2020-21 crop**	**Increase/decrease in 2020-21 over 2019-20**
Punjab				
1. Cost of cultivation	Rs/acre	38803.2	43312.6	4509.5
2. Yield				
a) Yield in kgs	Kgs/acre	1183.4	1120.0	-63.4
b) Yield in maunds	40 kgs/acre	29.58	28.00	-1.6
3. Cost of production at farm level	Rs/40 kgs	1311.6	1546.9	235.3
4. Marketing cost	Rs/40 kgs	38	40	2
5. Cost of production at market/ procurement centre				
a) With land rent	Rs/40 kgs	1349.58	1586.88	237.3
b) Without land rent	Rs/40 kgs	842.6	988.7	146.1
Sindh				
1. Cost of cultivation	Rs/acre	39931.7	45555.7	5624
2. Yield				
a) Yield in kgs	Kgs/acre	1262.42	1220.0	-42.4
b) Yield in maunds	40 kgs/acre	31.6	30.5	-1.1
3. Cost of production at farm level	Rs/40 kgs	1265.2	1493.6	228.4
4. Marketing cost	Rs/40 kgs	42.0	45.0	3.0

5. Cost of production at market/ procurement centre				
a) With land rent	Rs/40 kgs	1307.24	1538.63	231.39
b) Without land rent	Rs/40 kgs	832.0	997.6	165.6

Source: Annex-VIII and IX.

❖ **Punjab**

40. The expected cost of cultivation of one acre of wheat in the Punjab during 2020-21 crop year is likely Rs 43313 including land rent (Table-13). The cost of producing wheat at farm gate is worked out at Rs 1547 per 40 kgs, provided that average yield is 1120 kgs per acre. Accounting for the marketing charges @ Rs 40 per 40 kgs, the market/procurement centre level cost of production comes out to Rs 1587, high by Rs 237 (17.6 %) than the corresponding cost of Rs 1350 in 2019-20.

❖ **Sindh**

41. Net cost of production per acre of wheat in Sindh during 2020-21 crop is likely to be Rs 45556, inclusive of land rent. Distributing this cost over the average yield of 1220 kgs per acre, the farm level cost of production comes to Rs 1494 per 40 kgs. Adding marketing cost @ Rs 45 per 40 kgs, the cost of producing and delivering 40 kgs wheat at market/procurement centre level would be Rs 1539, reflecting an increase of Rs 231.4 (17.7 %) over the last year's corresponding cost of production.

42. The increases in the cost of production of wheat for the 2020-21 crop in the Punjab and Sindh over the last year's cost are mainly attributed to the inclined hiring rates of fertilizers, harvesting & threshing, irrigation and ploughing. Moreover, the diminution in other inputs has also added substantially to the increase in cost of production of wheat for 2020-21 crop.

4.5.2. 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 2019-20 and 2020-21 crops along with percent changes therein is presented in Table-14.

❖ **Punjab**

44. The land rent, Fertilizer including FYM and Harvesting and threshing are the major component in gross cost of cultivation of wheat in the Punjab during 2020-21 crop year, accounting for 31, 16 and 16 per cent. The other ingredients are as: Seed and sowing operations (12%), Land preparation (9%) and Irrigation (7%), Others (6%) and Intercultural/weedicides (2%).

❖ **Sindh**

45. In Sindh, the land rent and fertilizer including FYM is also the major constituent in the total cost of cultivation during 2020-21 crop season, accounting for 30 and 17 per cent. The other components of the cost of cultivation are: Harvesting & threshing operations (14%), Land preparation (13%), Seed and sowing operations (12%), Irrigation and WCC (7%), Others (6%) and Plant protection/Interculture (2%).

Table-14: Cost of Major Farm Operations/Inputs of Wheat: 2019-20 and 2020-21 Crops

Operations/inputs	2019-20 crop	2020-21 crop	Share in increased/decrease cost
	---Rs/acre---		Per cent
Punjab			
1. Land preparation	5137(11)	4638(9)	-9.7
2. Seed and sowing operations	4178(9)	6409(12)	53.4
3. Intercultural/weedicides	900(2)	1200(2)	33.3
4. Irrigation	3452(7)	3974(7)	15.1
5. Fertilizer including FYM	8732(18)	8583(16)	-1.7
6. Harvesting and threshing etc	7649(16)	8434(16)	10.3
7. Land rent	15000(31)	16750(31)	11.7
8. Others	3255(7)	3325(6)	2.1
9. Total cost	**48303(100)**	**53313(100)**	**10.4**
Sindh			
1. Land preparation	6070(12)	6927(13)	14.1
2. Seed and sowing operations	4809(10)	6371(12)	26.7
3. Intercultural/weedicides	1088(2)	1179(2)	8.3
4. Irrigation	3324(7)	3644(7)	9.6
5. Fertilizer including FYM	8833(18)	9066(17)	-1.9
6. Harvesting and threshing etc	6427(13)	7385(14)	11.2
7. Land rent	15000(31)	16500(30)	8.3
8. Others	3434(7)	3538(6)	1.7
9. Total cost	**48932(100)**	**54556(100)**	

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. The economics of wheat and competing crops has been analyzed in terms of output and input prices received and paid by the growers during 2019-20 at farm level.

❖ **Punjab**

48. 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-15: Economics of Wheat and Competing Crops at Prices Realized by the Growers in the Punjab: 2019-20 Crops

Province / crops /crop combination	Output-input ratio	Revenue per:		
		Rupee of purchased inputs cost	Crop day	Acre-inch of water used
		.....Rupees.....		
Wheat	1.05	3.5	283	4243
Sunflower (spring)	1.08	3.0	309	2524
Canola	1.36	5.6	272	3765
Cotton + wheat	1.10	3.4	319	3941
Cotton + sunflower	1.11	3.2	330	3151
Basmati + wheat	0.93	3.1	288	1481
IRRI + wheat	1.04	2.7	328	1596
Sugarcane	1.20	3.5	353	2898

Source: Annex-X.

49. Wheat crop has shown relatively lower performance during 2019-20 and farmers received a small margin over the cost of wheat production (5 %). In Punjab, Wheat crop has performed lower than

sunflower in terms of Output input ratio, however, better in terms of other criteria except crop duration, where Sunflower, has out-performed wheat. Canola crop has given better rewards over wheat and sunflower in terms of returns to overall investment and returns to purchased inputs.

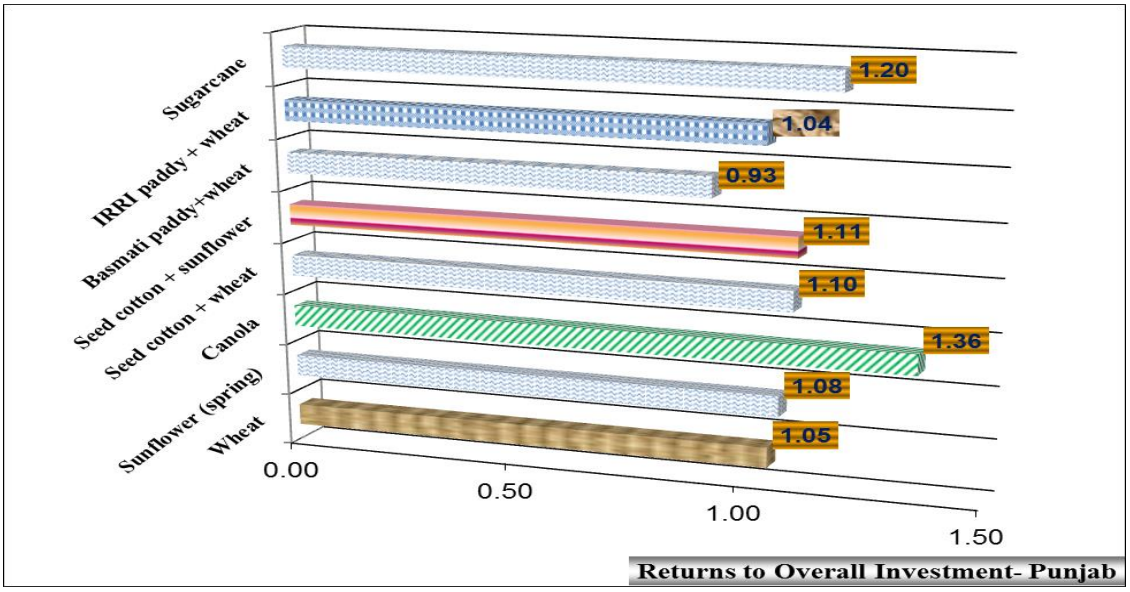


Fig -8 : Returns to Overall Investment in Punjab

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

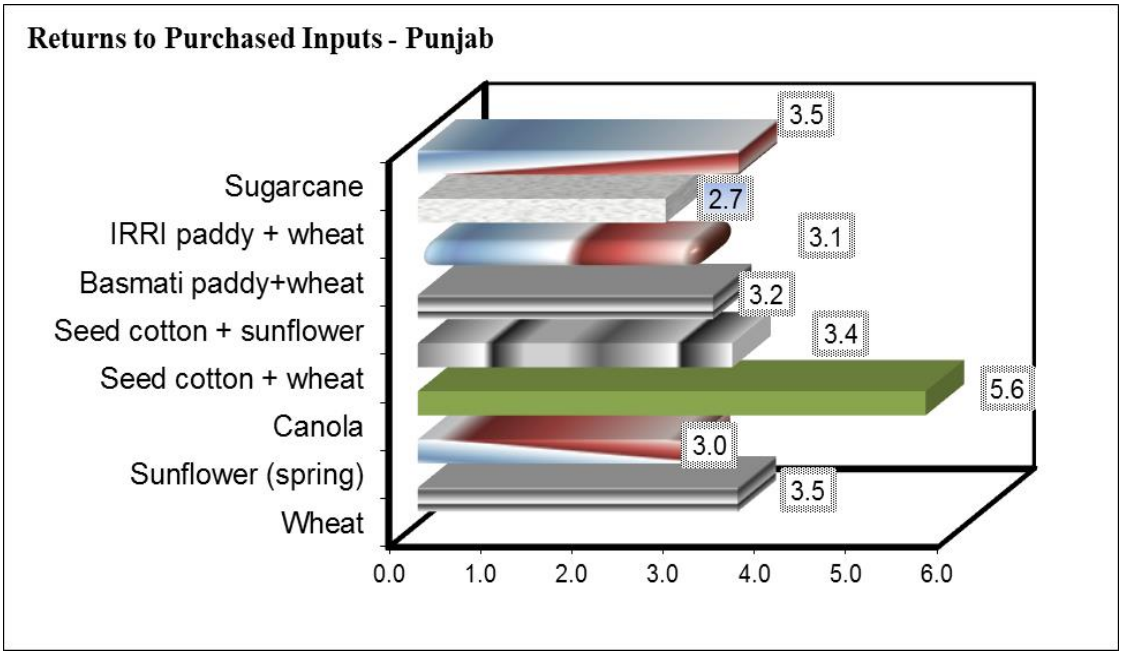


Fig-9 : Returns to Purchased inputs (Punjab)

51. Under the indirect competition scenario, wheat combinations with Rice varieties performed relatively lower in terms of returns to overall investment and other indicators. The sugarcane, on the other hand, did well as compared to rice combinations more specifically in terms of returns to overall investment and the purchased inputs. However, Sugarcane lagged cotton combinations with wheat and sunflower in the returns to irrigation water.

52. The economic position of cotton combinations remained better amongst all the crop combinations.

53. 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

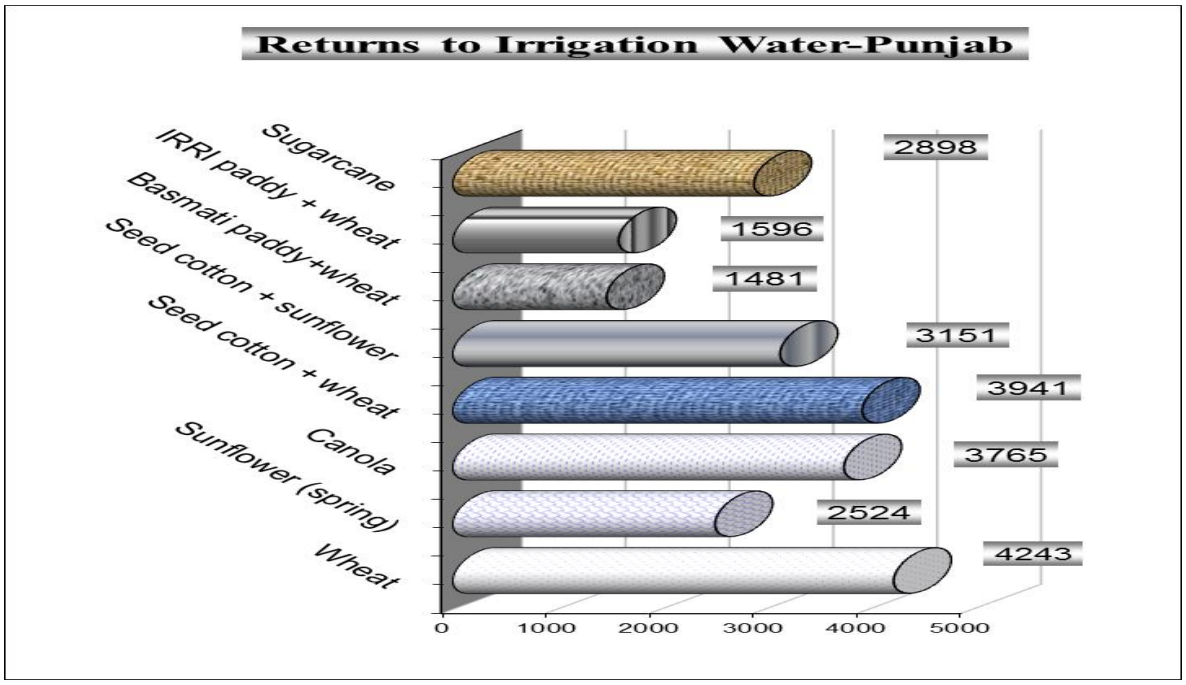


Fig-10 : Returns to Irrigation Water (Punjab)

- ***Sindh***

54. Economics of wheat and competing crops has been analyzed at prices realized by the growers in Sindh for crop season 2019-20 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:

55. In Sindh, the returns to overall investment in wheat crop remained higher than 'rabi' oilseed crop Sunflower but lower than canola during 2019-20. However, in respect of other economic indicators like crop days and irrigation water, wheat has performed better than the two oilseeds with big margin.

Amongst the oilseeds, Canola's position was better than Sunflower with respect to returns to overall investment and other remaining indicators except crop days.

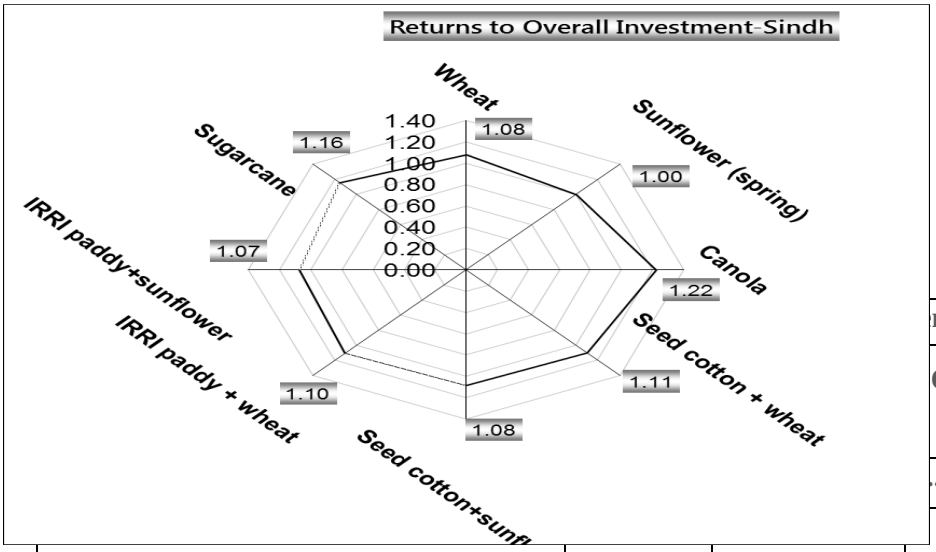


Fig-11 : Returns to Overall Investment in Sindh

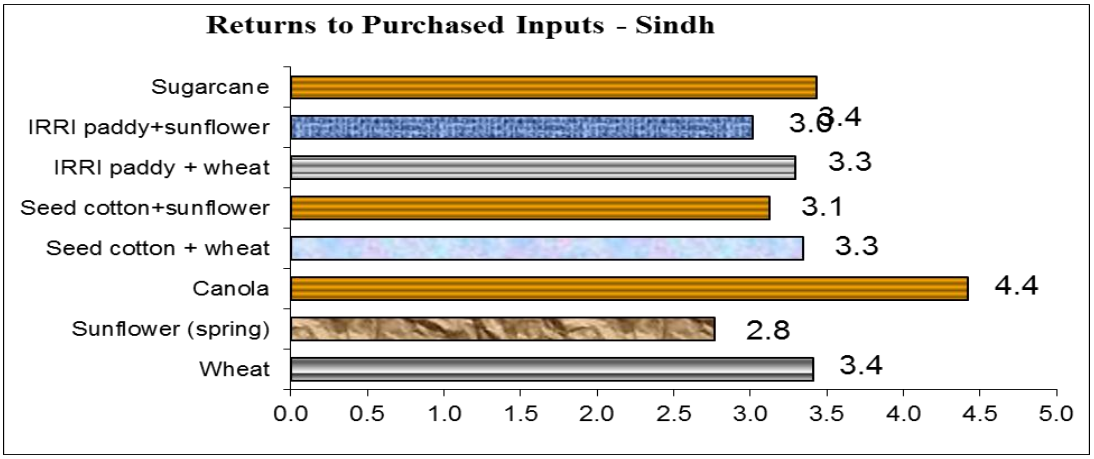
Source: Annex-X

			nue per:	
			Crop day	Acre-inch of water used
			.....	
Wheat	1.08	2.9	295	4432
Sunflower (spring)	1.00	2.8	216	1765
Canola	1.22	4.4	209	2892
Cotton + wheat	1.11	3.3	343	4798
Cotton + sunflower	1.08	3.1	309	3240
IRRI + wheat	1.10	3.3	314	1664
IRRI + Sunflower	1.07	3.0	274	1266
Sugarcane	1.16	3.4	261	1792

Table-16: Economics of Wheat and Competing Crops at Prices realized by the Growers in Sindh: 2019-20 Crops

56. The above results indicate that 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.

57. 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 entire economic criteria except purchased inputs wherein sugarcane showed better returns. Sugarcane performed better than wheat crop combination with cotton in respect of input/output ratio but lagged behind crop duration and irrigation water. Sugarcane, nevertheless, performed better than all the crop combinations in terms of returns to purchased inputs. Wheat combination with cotton and cotton + sunflower remained profitable in terms of irrigation water, over others. Cotton combinations show a wider difference over sugarcane in terms of returns to irrigation water. IRRI combinations, however, paid returns to the grower lower against the sugarcane in most of the economic criteria adopted in this analysis.



58. In summary, wheat's performance against competing crops has been presenting a mixed scenario, particularly gaining edge over oil-seed crop sunflower and also its combination with cotton over the sugarcane in terms of output-input ratio. Similarly, in terms of other economic indicators, wheat has been relatively better than sugarcane and other crop combinations, particularly sunflower in terms of returns to overall investment, purchased inputs and irrigation water.

59. This situation indicates that growers are getting a rewarding price for the crop. Although wheat production has decreased during 2019-20 mainly for climate factor and the current situation of stocks presents tight situation. The issue of implementation of support price and management of commodity need to be dealt by the federal and provincial governments in true spirit and with the objective of providing a floor to wheat growers. Non implementation of support price by Sindh has impacted on the grower community as well as the reserves position, which could not be affordable to allow repeating by any province or unit of Federation. Government's emphasis on crop diversification and to shift gradually to alternative options and other high value crops including oilseeds is pertinent to ensure stability in the food sector.

4.7.Nominal and Real Prices of Wheat

60. 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 2019-20 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

61. The analysis in terms of nominal and real support prices for the period 2015-16 to 2019-20 is presented in the Table-17.

62. The nominal support price of wheat was Rs 1300 per 40 kgs in 2015-16. A stagnant price of wheat in nominal terms i.e. Rs 1300 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. 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 2019-20 crop estimated at Rs 1074.19 per 40 kgs, showing a decline by (-17.37) per cent over the base year real price of Rs 1300 per 40 kgs.

Table-17: Nominal and Real Support Prices of Wheat in Punjab: 2015-16 to 2019-20

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	116.35	1300	1117.3
2019-20	130.33	1400	1074.19
Source: Pakistan Economic Survey: 2019-20			

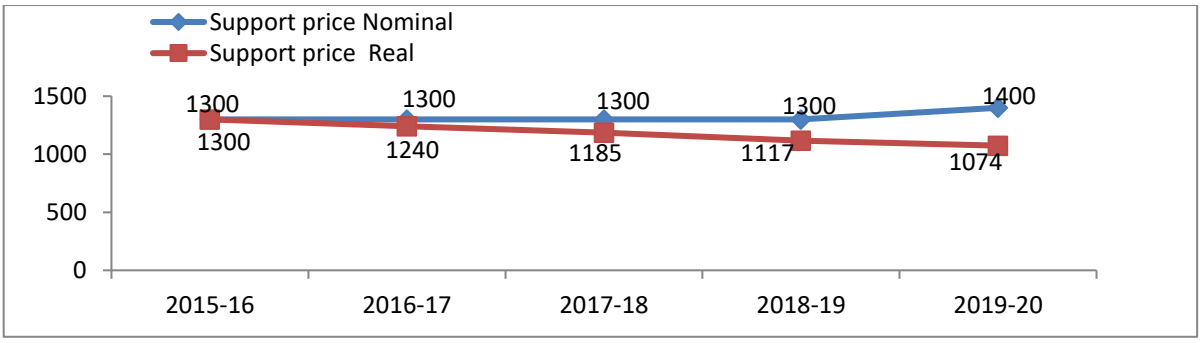


Fig-13: Nominal and Real Support Price of Wheat in Punjab.

63. It is illustrated in Fig-13, that real worth of the wheat crop in Punjab 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.

4.7.2. Market Prices of Wheat

64. The analysis in terms of real and nominal average market prices in Sindh for the period 2015-16 to 2019-20 is set out in the Table-18.

Table-18: Nominal and Real Market Prices of Wheat in Sindh: 2015-16 to 2019-20

Crop year	Consumer Price Index (CPI)	Market Prices	
		Nominal	Real
	2015-16=100	Rs/ per 40 Kgs	
1	2	3	4=(3/2)x100
2015-16	100.00	1206	1206.0
2016-17	104.81	1180	1126.4
2017-18	109.72	1190	1084.5
2018-19	116.35	1220	1048.5
2019-20	130.33	1468	1126.3

Sources: i) For CPI, Economic Survey of Pakistan: 2019-20. 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).

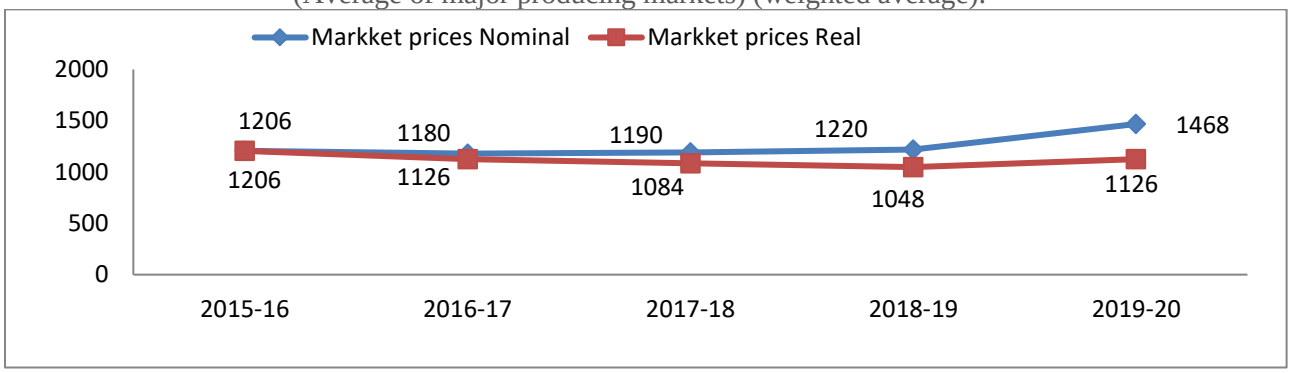


Fig.14: Nominal and Real Market Prices of Wheat in Sindh

65. 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 2019-20. However, the nominal market price took downward move during next two consecutive years. In 2019-20, the real value of wheat once again declined at 1126.37 per 40 kgs. The average nominal market price of wheat has evidenced 22% increase against the base year during the period under review. On the other hand, the real value has receded by (-7.5 per cent) mainly for the rise in CPI by 30.33% during this period.

66. The real market value of wheat remained below the nominal value during the entire period under study. As depicted in Fig-13, 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.

67. If the market prices had averaged at Rs 1825 per 40 kgs, the farmers would have gained the real purchasing power equivalent to the level of the support price of Rs 1400 announced for 2019-20 crop.

4.8. Economic Efficiency in Wheat Production in Pakistan

68. 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.

69. 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)

70. 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.

71. Nominal Protection Coefficients (NPCs) for wheat under import scenario are produced in Table-19. It is evident from the data in the referred table that NPC values for Punjab province remained less than one in 2014-16 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.

Table–19: Nominal and Effective Protection Coefficients for Wheat under Import Scenario

Year	NPC	EPC	NPC	EPC
	Punjab		Sindh	
2014-15	0.86	0.81	0.82	0.70
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

Table-20: Nominal and Effective Protection Coefficients for Wheat under Export Scenario

Year	NPC	EPC	NPC	EPC

	Punjab		Sindh	
2014-15	1.32	1.88	1.26	1.55
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

Table-21: DRC Coefficients for Wheat in Pakistan

Year	Under Import Scenario		Under Export Scenario	
	Punjab	Sindh	Punjab	Sindh
2014-15	0.83	0.76	1.93	1.68
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

72. Similarly, NPC numeric for Sindh province also remained less than one in 2014-16 and 2018-20 ranging between 0.75 and 1.12. The main reason is that the international price of wheat dropped during 2016-17 and 2017-18.

73. NPC values under export scenario remained greater than one during 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.

4.8.2. Effective Protection Coefficient (EPC)

74. Dissimilar to the NPC, the 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.

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

76. 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 per 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.

4.8.3. Domestic Resource Cost Coefficient (DRC)

77. 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-21. Detailed data on private and social profitability for the study period are produced in Annexes-XI to XII.

Table-22: Domestic Resource Cost Coefficient (DRC) for Wheat in Punjab and Sindh Provinces

Year	Under the import situation		Under the export situation	
	Punjab	Sindh	Punjab	Sindh
[1]	[2]	[3]	[4]	[5]
2013-14	0.58	0.51	1.15	0.96
2014-15	0.83	0.76	1.93	1.68
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

78. It is noticeable from data in the Table-22 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.

79. 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

80. 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 2017-18 to 2019-20 crop in main producing countries are given below:

81. The producer prices of wheat in China, remained higher than support price of wheat in Pakistan and all other countries, during the last 3 years. India is showing a continuous increase in MSP of wheat in both currencies' terms. In USA, the crop insurance pricing has increased to USD 185.20 per tonne last year; however, a minor decline at US$ 163.1 per tonne. In Pakistan, the Support Price remained stagnant during the period under review, mainly supported by big harvests, lower price of the commodity in the international markets and very low export of surplus stocks.

Table-23: Support Price of Wheat in Selected Countries

(Rs per 40 kgs)

Country	2017-18	2018-19	2019-20
Australia[1]	983	1358	1,417
China[2]	1,412	2014	2,001
India[3]	1,103	1615	1,725
USA[4]	817	1156	1,020
Brazil(5)	685	1040	1,379
Pakistan	1,300	1300	1,400

Notes:

[1] https://http://image.info.cargill.com/lib/

[2] https://www.fas.usda.gov/data/china-

[3] Ministry of Agriculture & Farmers Welfare, Government of India.

[4] https://www.ag360insurance.com/crop-insurance-pricing/

[5] https://www.cepea.esalq.usp.br/

a) Exchange Rate: $ 1 = PKR 156.2985, PES- 2019-20.

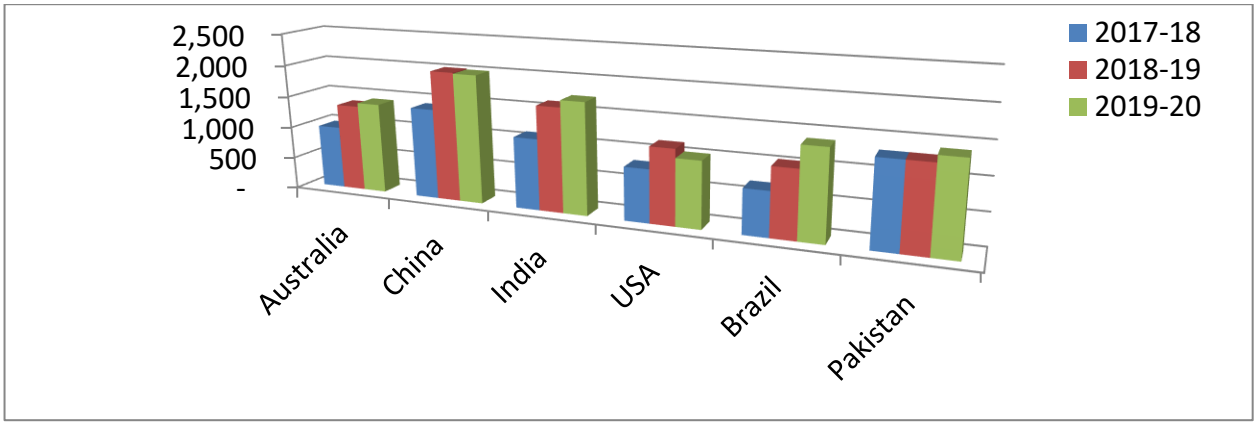


Fig-15: Support Price of Wheat in Selected Countries

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

82. 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-XIII, while a summary of the results is provided in Table-22. Major findings of the analysis are discussed as under:

4.10.1. Impact on CPI

83. 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 1400 per 40 kgs in 2019-20. 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.

84. It is evident from the Table-24 that increase of Rs 25 per 40 kgs over the existing support price of wheat is expected to raise the CPI by 0.0331 per cent, other things remaining the same. In case the support price of wheat is enhanced by Rs 50, Rs 100 and Rs 150 per 40 kgs, the CPI is likely to rise by 0.0242, 0.0064 and 0.0114 per cent, respectively.

Table-24: Impact of Increase in Wheat Prices on CPI and Average Household Expenditure

Support price	Wheat base price 344.37 PBS	Rise in CPI	Increase in annual expenses on the basis of average per capita wheat availability @ 116 kgs per year	
			Per person	Per household**
Rs per 40 kg	Rs per 10 kg	Per cent	---------- Rupees ----------	
*1400	350.0	-	-	-
1425	356.3	0.0331	**72**	**449**
1450	362.5	0.0242	**145**	**905**
1475	368.8	0.0153	**217**	**1354**
1500	375.0	0.0064	**290**	**1810**
1525	381.3	0.0025	**362**	**2259**
1550	387.5	0.0114	**435**	**2714**

Sources: 1.Pakistan Bureau of Statistics (PBS), Islamabad.
2.Annex-XIII
*Existing price for 2020-21 wheat crop.
**HH Size 6.24 as in HIES 2018-19
@ As Recommended by API.

Note: Impact of wheat price has been calculated by assuming incremental charges of Rs .25/- per 40 kg of July ,2020.

85. 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

86. According to the Household Integrated Economic Survey (HIES) 2018-19 by the PBS, the average household in Pakistan consists of 6.24 members. Taking the annual per capita consumption of wheat at 116 kgs and average household size of 6.24 members, the impact of selected increases in the support price of wheat on the average household expenditure has been estimated in Annex-XIII and summarized in Table-24.

87. According to the above analysis, every increase of Rs 25 in the support price of wheat over the existing level of Rs 1400 per 40 kgs in 2019-20 would increase the annual expenditure by Rs 72 per person and Rs 449 per average household, other factors remaining constant. While the monthly expenses on wheat consumption due to every increase of Rs 25 per 40 kgs in the support price of wheat would rise by Rs 5.83 per person and Rs 36.4 per household. Likewise, the increase of Rs 100 per 40 kgs over the existing

support price would bring additional expenditure of Rs 290 per capita per year and Rs 1810 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

88. Annual meeting of the API Committee on wheat was held on 25th August 2020. The meeting was presided by the D.G, API 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.

89. 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.

90. 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 Chaired advised to arrange a meeting/awareness workshops should be launched on regular basis by the provincial departments. 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

91. 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 favourable 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-25).

Table-25: Parity between Market Prices of Fertilizers and Wheat: 2008-09 to 2019-20

Year	Price of fertilizer		Market price of wheat	Units of wheat needed to buy one unit of fertilizer	
	N	P		N	P

	---------- Rupees per tonne----------			----- Units -----	
2008-09	30260	122290	23475	1.29	5.21
2009-10	34320	70240	22262	1.54	3.16
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

Sources: i) Directorates 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.

92. 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 2008-09 to 2019-20.

93. 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 1.29 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 1.29 in 2008-09 owing to hike in wheat prices as a result of global food crisis. However, the parity ratio jumped to the highest level of 2.90 in 2011-12 from 1.67 in 2010-11, 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 2.27 units of wheat were required to buy one unit of N fertilizer during 2019-20.

94. The parity ratio for P-wheat prices generally hovered around 5.21 until 2008-09. It declined to 3.16 in 2009-10. 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 2019-20 has relatively improved over the previous year as 3.40 units of wheat were required to buy one unit of P fertilizer, a change of (21 per cent) as compared to last year.

7. MAJOR WHEAT VARIETIES AND THEIR YIELD POTENTIAL

95. 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-XIV.

96. 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 certain by improve at the country level and resultantly production will boost further.

8. WHEAT YIELD AMONG COMPETING COUNTRIES

97. 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-26.

Table-26: 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 Of 30 Country Area	**200.60**	**92.91**
	Total World Area	**215.902**	100.00

98. 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-27: 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 Table 26 & 27: FAO Production Yearbook 2019

99. 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-27)

100. In terms of yield per hectare, Ireland with 9378.7 kgs, Netherlands 9378.1 kgs, Belgium 9336.4 kgs per hectare followed by United Kingdom8934.5. 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- XV)

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

101. During 2011-12 to 2019-20, wheat production has ranged between 23.34 to 26.61 million tonnes. Procurement has been in the range of 5.15 to 9.07 million tonnes. The wheat procurement by the public sector has varied from 16.00 to 38.86 per cent of the respective production. The average market prices during the period under review remained below the support price except 2013-14 and 2019-20 when the price surpassed the support price. The prices ranged between Rs 949 to Rs 1469 per 40 kgs during the period under review.

Table-28: Production, Procurement, Market and Support Prices of Wheat: 2010-11 to 2019-20

Crop year (May-April	Production	Procure-ment	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	613	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

- **Average of Punjab and Sindh**

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

Source: PASSCO and Provincial Food Departments.

10. WHEAT PROCUREMENT TARGETS AND ACHIEVEMENTS

102. The Federal Government fixed the wheat procurement target at 8250 thousand tonnes for 2019-20 crop to be implemented by the Provincial Food Departments and PASSCO. Agency-wise targets with their achievements in provinces are shown in Table-29.

Table-29: Procurement Targets and Achievements: 2019-20 Wheat Crop

Province/agency	Target	Achievement	Achievement as per cent of target
	----Million tonnes -----		Per cent
Pakistan	**8.250**	**6.594**	**79.93**
- Provincial Food Departments	6.450	5.416	83.97
- PASSCO	1.800	1.178	65.44
Punjab	**5.950**	**5.048**	**84.84**
- Food Department	4.500	4.081	90.69
- PASSCO	1.450	0.967	66.69
Sindh	**1.650**	**1.401**	**84.91**
- Food Department	1.400	1.233	88.07
- PASSCO	0.250	0.168	67.20

K.P	**0.450**	**0.019**	**4.22**
- Food Department	0.450	0.019	4.22
- PASSCO	-	-	-
Balochistan	**0.200**	**0.126**	63.00
- Food Department	0.100	0.083	83.00
- PASSCO	0.100	0.043	**43.00**

Source: PASSCO and respective provincial Food Departments.

103. The Table-29 reveals that procurement agencies have achieved 79.93 percent of the target fixed by the Government, Provincial Food Department, collectively achieved 83.97 per cent by the Food Departments and 65.44 per cent by PASSCO.

11. ACKNOWLEDGEMENT

104. The technical contribution and professional efforts of the following staff members are highly appreciated in completion of Wheat Policy Analysis Report for 2020-21 Crop:

Officers			
	1.	Mr. Hussain Ali Turi	Deputy Chief
	2.	Mr. Muhammad Amin	Deputy Chief
	3.	Syed Riaz Ali Shah	Assistant Chief
	4.	Ms Shagufta Tasleem	Assistant Chief **(Coordinator)**
Staff			
	5.	Mr. Hafeez Ahmed	Assistant Private Secretary **(Composed the Report)**
	6.	Mr. Muhammad Naeem	Machine Operator

Abdul Karim
Director General
API

Annex-I

AREA,YIELD AND PRODUCTION OF WHEAT : 2009-10 TO 2019-20

Year	Punjab	Sindh	KPK	Balochistan	Pakistan
AREA		**---------- Thousand hectares ----------**			
2009-10	6913.5	1092.3	758.3	367.5	9131.6
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
YIELD		**---------- kgs per hectare ----------**			
2009-10	2592	3390	1520	1459	2553
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	3396	1554	2297	2881
PRODUCTION		**---------- Thousand tonnes ----------**			
2009-10	17919.0	3703.1	1152.5	536.2	23310.8
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	3852.3	1130.3	983.0	25367.5

Sources:

1. For 2009-10 to 2017-18: Wheat Policy Analysis For 2018-19 Crop

2. For 2018-19: Wheat Policy Analysis For 2019-20 Crop

3. For 2019-20: Second estimate of Punjab, Sindh and Balochistan and Final estimate of KPK provided by provinces.

Annex-I A

AREA,YIELD AND PRODUCTION OF WHEAT : 2009-10 TO 2019-20

Year	Punjab	Sindh	KPK	Balochistan	Pakistan
AREA		**---------- Thousand acres ----------**			
2009-10	17083.9	2699.2	1873.8	908.1	22565.1
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
YIELD		**---------- kgs per acre ----------**			
2009-10	1049	1372	615	590	1033
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	1374	629	930	1166
PRODUCTION		**---------- Thousand tonnes ----------**			
2009-10	17919.0	3703.1	1152.5	536.2	23310.8
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	3852.3	1130.3	983.0	25367.5

Source:

1. For 2009-10 to 2017-18: Wheat Policy Analysis For 2018-19 Crop

2. For 2018-19: Wheat Policy Analysis For 2019-20 Crop

3. For 2019-20: Second estimate of Punjab, Sindh and Balochistan and Final estimate of KPK provided by provinces.

ANNEX-II

AREA, YIELD AND PRODUCTION OF WHEAT BY PROVINCE AND BY IRRIGATION: 2017-18 TO 2019-20

Country/ Province	Area				Yield per hectare				Production			
	2017-18	2018-19	2019-20	Change over last year	2017-18	2018-19	2019-20	Change over last year	2017-18	2018-19	2019-20	Change over last year
	000 ha				Kgs				000 tonnes			
IRRIGATED												
PAKISTAN	7802.3	7712.5	7629.5	-1.08	3043	2971	3100	4.33	23742.1	22916.2	23651.5	3.21
PUNJAB	6005.8	5950.8	5784.0	-2.80	3080	2952	3157	6.95	18498.40	17567.9	18262.9	3.96
SINDH	1050.8	1022.8	1101.7	7.71	3392	3634	3437	-5.43	3564.10	3717.1	3786.3	1.86
KPK	360.4	356.6	336.6	-5.61	2094	2163	1903	-12.02	754.60	771.4	640.6	-16.96
BALOCHISTAN	385.3	382.3	407.2	6.51	2401	2249	2362	5.01	925.00	859.8	961.7	11.85
UNIRRIGATED												
PAKISTAN	995.00	965.3	1175.2	21.74	1341	1484	1460	-1.63	1334.1	1432.8	1716.0	19.77
PUNJAB	554.00	545.1	731.3	34.16	1228	1485	1558	4.90	680.20	809.3	1139.0	40.74
SINDH	38.80	29.9	32.5	8.70	1943	2067	2031	-1.75	75.40	61.8	66.0	6.80
KPK	393.00	383.0	390.7	2.01	1446	1452	1253	-13.69	568.10	556.2	489.7	-11.96
BALOCHISTAN	9.20	7.3	20.7	183.56	1130	753	1029	36.57	10.40	5.5	21.3	287.27
TOTAL												
PAKISTAN	8797.3	8677.8	8804.7	1.46	2850	2806	2881	2.68	25076.2	24349.0	25367.5	4.18
PUNJAB	6559.8	6495.9	6515.3	0.30	2924	2829	2978	5.26	19178.6	18377.2	19401.9	5.58
SINDH	1089.6	1052.7	1134.2	7.74	3340	3590	3396	-5.38	3639.5	3778.9	3852.3	1.94
KPK	753.4	739.6	727.3	-1.66	1756	1795	1554	-13.42	1322.7	1327.6	1130.3	-14.86
BALOCHISTAN	394.5	389.6	427.9	9.83	2371	2221	2297	3.43	935.4	865.3	983.0	13.60

Sources:
1. **For 2009-10 to 2017-18: Wheat Policy Analysis For 2018-19 Crop**
2. **For 2018-19: Wheat Policy Analysis For 2019-20 Crop**
3. **For 2019-20: Second estimate of Punjab, Sindh and Balochistan and Final estimate of KPK provided by provinces.**

DISTRICT- WISE AREA, YIELD AND PRODUCTION OF WHEAT **ANNEX-III**
AVERAGE OF 2017-18 TO 2019-20

Area: 000 ha
Production: 000 tonnes
Yield: kgs/hectare

S.No	Province/ District/ Agency	Area	Production	Share in total production	Yield	S.No	Province/ District/ Agency	Area	Production	Share in total production	Yield
	PUNJAB						**KPK**				
1	Bahawalnagar	377.02	1264.99	5.07	3355.19	1	Swat	43.80	84.10	0.34	1920.09
2	R.Y.Khan	296.23	953.15	3.82	3217.66	2	Mardan	43.96	76.89	0.31	1749.15
3	Bahawalpur	290.29	924.72	3.71	3185.51	3	Swabi	41.32	76.13	0.31	1842.57
4	Muzaffargarh	281.12	876.84	3.52	3119.12	4	D.I.Khan	42.09	66.24	0.27	1573.75
5	Jhang	273.43	846.29	3.39	3095.12	5	Dir Lower	32.66	65.27	0.26	1998.15
6	Faisalabad	256.43	833.43	3.34	3250.10	6	Bannu	29.55	63.76	0.26	2157.92
7	Vehari	212.73	692.16	2.78	3253.76	7	Mansehra	32.39	63.37	0.25	1956.24
8	Khanewal	202.20	666.38	2.67	3295.60	8	Charsadda	28.45	62.70	0.25	2204.06
9	Gujranwala	221.09	660.20	2.65	2986.12	9	Shanlapar	28.53	60.28	0.24	2112.84
10	Sheikhupura	207.87	657.06	2.64	3160.96	10	Bunir	41.27	55.61	0.22	1347.33
11	Rajanpur	201.66	645.58	2.59	3201.28	11	Peshawar	27.60	54.32	0.22	1967.70
12	Lodhran	188.31	638.71	2.56	3391.85	12	Nowshera	19.16	46.23	0.19	2413.41
13	D.G.Khan	205.84	620.34	2.49	3013.65	13	Dir Uper	23.51	45.93	0.18	1953.54
14	Layyah	234.44	619.83	2.49	2643.81	14	Haripur	26.99	41.06	0.16	1521.08
15	Multan	181.03	586.11	2.35	3237.65	15	Abbottabad	22.28	40.28	0.16	1807.84
16	Okara	174.14	582.53	2.34	3345.09	16	Hangu	20.89	38.92	0.16	1862.68
17	Sargodha	201.12	540.52	2.17	2687.54	17	Tank	20.89	34.41	0.14	1646.92
18	T.T.Singh	154.72	528.49	2.12	3415.72	18	Chitral	17.00	33.25	0.13	1956.11
19	Hafizabad	157.15	489.40	1.96	3114.23	19	Kurram AG.	16.70	26.94	0.11	1613.05
20	Kasur	152.02	486.68	1.95	3201.33	20	Kohat	18.32	26.54	0.11	1448.27
21	Sahiwal	129.50	442.29	1.77	3415.44	21	Lakki Marwat	18.11	24.23	0.10	1337.78
22	Sialkot	172.53	439.92	1.76	2549.86	22	Malakand	17.58	23.96	0.10	1362.77
23	Pakpattan	117.76	419.25	1.68	3560.20	23	Karak	19.84	20.85	0.08	1051.15
24	Nankana Sahib	121.81	397.50	1.59	3263.37	24	Khyber AG.	18.59	20.23	0.08	1088.24
25	Mianwali	173.07	390.06	1.56	2253.82	25	Bajour AG.	23.53	18.50	0.07	786.13
26	M.B.Din	141.91	388.66	1.56	2738.85	26	Orakzai AG	10.00	15.33	0.06	1533.88
27	Bhakkar	166.32	385.32	1.55	2316.66	27	Battagram	8.46	14.82	0.06	1752.70
28	Narowal	129.23	302.02	1.21	2337.09	28	Kohistan	9.95	13.03	0.05	1308.90
29	Chiniot	100.49	300.56	1.21	2990.76	29	N.Waziristan	6.43	9.75	0.04	1515.60
30	Attock	167.94	280.26	1.12	1668.77	30	S.Waziristan	7.68	9.02	0.04	1173.46
31	Gujrat	150.13	275.85	1.11	1837.35	31	Mohmand AG.	6.16	8.00	0.03	1299.66
32	Khushab	104.68	198.95	0.80	1900.59	32	F.R.Peshawar	4.19	5.89	0.02	1405.32
33	Chakwal	130.17	184.99	0.74	1421.14	33	F.R.D.I.Khan	5.71	5.79	0.02	1013.95
34	Rawalpindi	119.65	182.48	0.73	1525.12	34	F.R.Bannu	4.22	5.71	0.02	1353.26
35	Lahore	49.64	162.05	0.65	3264.52	35	F.R.Kohat	2.24	2.87	0.01	1281.16
36	Jhelum	61.11	93.69	0.38	1533.26						
37	Islamabad	18.89	28.59	0.11	1513.83						
	Sub Total	**6523.68**	**18985.86**	**76.15**	**2910.30**		**Sub Total**	**740.07**	**1260.20**	**5.05**	**1702.81**
	SINDH						**BOLUCHISTAN**				
1	N.Feroze	103.12	389.61	1.56	3778.18	1	Nasirabad	81.25	219.17	0.88	2697.33
2	Khairpur	103.72	385.35	1.55	3715.28	2	Jaffarabad	72.76	198.67	0.80	2730.32
3	Ghotki	106.63	381.19	1.53	3575.04	3	Jhal Magsi	52.90	125.38	0.50	2370.01
4	Sanghar	102.05	345.13	1.38	3381.96	4	Khuzdar	46.33	94.28	0.38	2035.19
5	Sh. Benazirabad	86.50	343.84	1.38	3975.22	5	Dera Bughti	20.47	39.43	0.16	1926.10
6	Dadu	75.33	243.52	0.98	3232.78	6	Lasbela	13.34	27.20	0.11	2039.74
7	Larkana	51.43	180.60	0.72	3511.82	7	Awaran	14.49	27.12	0.11	1871.34
8	Sukkur	50.17	174.49	0.70	3477.97	8	Sibi	14.37	24.73	0.10	1720.25
9	Shadadkot	53.51	172.54	0.69	3224.40	9	Barkhan	10.17	19.38	0.08	1904.59
10	Matiari	40.14	167.91	0.67	4183.54	10	Loralai	8.56	18.81	0.08	2197.66
11	Mirpurkhas	48.53	160.46	0.64	3306.32	11	Kachhi	8.25	16.98	0.07	2059.42
12	Tando Allahyar	30.02	114.18	0.46	3803.74	12	Killa Saifullah	8.57	16.81	0.07	1961.53
13	Jamshoro	34.97	110.05	0.44	3147.26	13	Kharan	6.98	13.04	0.05	1868.90
14	Shikarpur	36.23	100.52	0.40	2774.45	14	Noushki	6.49	12.72	0.05	1958.43
15	Kashmore	35.48	99.44	0.40	2803.15	15	Chaghi	5.21	9.31	0.04	1785.80
16	Umerkot	27.23	82.19	0.33	3018.79	16	Kalat	4.28	8.99	0.04	2100.13
17	Jacobabad	32.43	79.04	0.32	2437.53	17	Panjgoor	3.77	7.16	0.03	1900.93
18	Badin	25.54	69.85	0.28	2735.27	18	Washuk	3.57	6.61	0.03	1853.07
19	Hyderabad	14.75	57.81	0.23	3919.08	19	Mastung	3.27	6.59	0.03	2014.77
20	Thatta	17.53	48.08	0.19	2743.21	20	Pishin	3.09	6.03	0.02	1953.07
21	Tando Muhammad	14.11	43.35	0.17	3071.54	21	Zhob	3.39	5.59	0.02	1649.39
22	Tharparkar	1.69	4.87	0.02	2876.72	22	Quetta	2.54	5.14	0.02	2023.23
23	Karachi	1.09	2.88	0.01	2635.89	23	Harnai	2.03	4.27	0.02	2109.92
						24	Turbat	2.10	4.08	0.02	1939.76
						25	Kohlu	2.04	3.72	0.01	1820.07
						26	K.Abdullah	1.58	2.98	0.01	1890.65
						27	Musa Khel	1.38	2.29	0.01	1657.81
						28	Sherani	0.55	1.02	0.00	1870.73
						29	Ziarat	0.21	0.39	0.00	1827.59
						30	Gwadar	0.00	0.00	0.00	#DIV/0!
	Sub Total	**1092.18**	**3756.91**	**15.07**	**3439.84**		**Sub Total**	**403.95**	**927.90**	**3.72**	**2297.07**
							Pak Total	**8759.88**	**24930.88**	**100.00**	**2846.03**

Notes:
1. Data have been arranged in decending 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 / Consumption year	2016-17 / 2017-18	2017-18 / 2018-19	2018-19 / 2019-20
1	Total Population (a)		209.54	213.78	217.99
			----------000 tonnes----------		
2	Opening stocks as on 1st May		4531	5942	3780
3	Production of Pakistan		26674	25510	25457
4	Production of AJ&K and GB (a)		133	128	127
5	Imports		0	0	0
6	Exports (wheat and wheat preparation)		1120	644	684
7	Closing stocks as on 30th April		3115	3779	636
8	Total availability		27103	27157	28044
9	Deduction for seed,feed and wastage @ 10 per cent of production		2681	2564	2558
10	Available for human consumption (item 8 minus item 9)		24423	24593	25486
			----------Kgs/ annum----------		
11	Per capita availability (item 10 divided by item 1)		117	115	117
12	Average per capita availability during 2017-18 to 2019-20			116	

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

Sources:
1. For carryover stocks: PASSCO and Provincial Food Departments.
2. For Population Economic Survey of Pakistan.
3. For Afghan reguges: Ministry of Kashmir Affairs and Northern Areas and States and Frontier Regions, 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		Exchange Rate
		--------US$ per tonne---------		US$/tonne	%age	
2010-11		316	289	27	9.34	85.5017
2011-12		301	259	42	16.22	89.2359
2012-13		347	310	37	11.94	96.7272
2013-14		318	265	53	20.00	102.8591
2014-15		266	221	45	20.36	101.2947
2015-16		211	194	17	8.76	104.2351
2016-17		197	170	27	15.88	104.6971
2017-18		230	188	42	22.34	109.8444
2018-19		232	210	22	10.48	136.0901
2019-20		220	222	-2	-0.90	157.3819
2020-21		**230**	**238**	**-7**	**-3.09**	
	Months					
	July	223	231	-8	-3.46	230
	August	224	235	-11	-4.68	232
	Sept	244	247			

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

S. No	Item	2020-21 (Jul-Sep		2019-20		2017-18 to 2019-20	
		HRW	SRW	HRW	SRW	HRW	SRW
		----------US $ per tonne----------					
1	Average Fob(Gulf) price	230.00	238.00	220.00	222.00	227.00	207.00
2	Freight charges from Gulf port to Karachi	45.00	45.00	45.00	45.00	45.00	45.00
3	Average c&f (Karachi) price in US $	275.00	283.00	265.00	267.00	272.00	252.00
		----------Rs per tonne----------					
4	Exchange rate	**166.50**	**166.50**	**166.50**	**166.50**	**166.50**	**166.50**
5	Average c&f (Karachi) price in Pak Rupees	45788	47120	44123	44456	45288	41958
6	Marine insurance charges @0.23% of c & F cost	105	108	101	102	104	97
7	Lc opening charges @0.4% of c&f cost.	183	188	176	178	181	168
8	Stevedoring, clearing, handling, wharfage, weight inland insurance, survey & pre-shipment charges and provision for unforeseen losses	963	967	959	960	962	954
9	TCP commission @ 2 % of c&f cost as per ECC	916	942	882	889	906	839
10	KIBOR @ 6.5 % for 3 months for 30 days	992	1021	956	963	981	909
11	**Landed cost (item 3 to 8) at Karachi**	48947	50346	47198	47548	48423	44924
12	Transport cost from Karachi to Multan	2800	2800	2800	2800	2800	2800
13	Expences from procurement center to Multan	700	700	700	700	700	700
14	Import parity price at procurement center level	**51047**	**52446**	**49298**	**49648**	**50523**	**47024**
15	Import parity prices of wheat	----------Rs per 40 kgs----------					
	i) If consumed at Multan	**2042**	**2098**	**1972**	**1986**	**2021**	**1881**
	ii) If consumed at Karachi	**1958**	**2014**	**1888**	**1902**	**1937**	**1797**

Note: Prices of September 2020 are uoto Septermber 15, 2020.

Sources:

i) For fob (Gulf) prices: International Grain Council, UK.

ii) For, incidential and transport charges from Karachi to Multan, Universal Cargo (private) Limited, Karachi.

iii) For expenses from procurement centre to Multan: PASSCO, Lahore.

Annex-VII

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

S.No	Item	2020-21 (Jul-Se		2019-20		2017-18 to 2019-20	
		HRW	SRW	HRW	SRW	HRW	SRW
		----------US $ per tonne----------					
1	Fob(Gulf) price assuming Fob (Karachi) price	230.00	238.00	220.00	222.00	227.00	207.00
2	Exchange rate	**166.50**	**166.50**	**166.50**	**166.50**	**166.50**	**166.50**
3	Fob(Gulf) price assuming Fob (Karachi) price in Pa	38295	39627	36630	36963	37796	34466
4	Incidental charges: (items i to xi)	6052	6105	5985	5999	6032	5899
	i) Expenses from procurement centre to Multan	700	700	700	700	700	700
	ii) Transport cost from Multan to Karachi including 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 ch	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	574	594	549	554	567	517
	viii Insurance charges at port 1 % for one month	32	33	31	31	31	29
	ix) Bank commission & charges 0.25 %	96	99	92	92	94	86
	x) KIBOR @ 6.5 % for 3 months for 30 days	830	859	794	801	819	747
	xi) Miscellaneous charges (Ghati, Wastage, Godo	250	250	250	250	250	250
5	Export parity price of wheat at procurement centre level(item 1- items 2)	32243	33522	30645	30964	31764	28567
		----------Rs per 40kgs----------					
6	Export parity price at procurement center level	1290	1341	1226	1239	1271	1143

Note: Prices of September 2020 are uoto Septermber 15, 2020.

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.

ANNEX-VIII

AVERAGE FARMER COST OF PRODUCTION ESTIMATES OF WHEAT IN PUNJAB: 2019-20 AND 2020-21 CROPS

S. No.	Operations / Inputs	Average No. of oprs/units/ acre	2019-20 crop		Average No. of oprs/units/ acre	2020-21 crop		Change in 2020-21 crop over 2019-20 crop
			Cost per unit	Cost per acre		Cost per unit	Cost per acre	
1	2	3	4	5 = 3 * 4	6	7	8=6*7	9=8-5
1	**Land preparation:**			……..…Rs……...…….				
	1.1 Rotavator/disc plough	1.250	1400.0	1750.0	0.500	2000.0	1000.0	-750.0
	1.2 Ploughing	2.696	700.0	1887.2	2.000	900.0	1800.0	-87.2
	1.4 Planking	2.000	350.0	700.0	2.000	450.0	900.0	200.0
	1.5 Laser Levelling	1.000	800.0	800.0	0.750	1250.0	937.5	137.5
2	**Seed and sowing operations:**							
	2.1 Seed used (kgs)	50.000	42.0	2100.0	50.000	75.0	3750.0	1650.0
	2.2 Labour for seed broadcasting (m.hrs)	1.455	62.5	90.9	1.455	75.0	109.1	18.2
	2.3 Ploughing in case of broadcasting	2.000	700.0	1400.0	2.000	900.0	1800.0	400.0
	2.4 Planking in case of broadcasting	1.000	350.0	350.0	1.000	450.0	450.0	100.0
3	**Bund making:**							
	3.1 Manual (m.hrs)	1.000	62.5	62.5	1.000	75.0	75.0	12.5
	3.2 tractor (hrs)	0.250	700.0	175.0	0.250	900.0	225.0	50.0
4	**Plant protection**							
	4.1 Weedicides	1.000	900.0	900.0	1.000	1200.0	1200.0	300.0
5	**Irrigation: * (Nos)**							
	5.1 Canal		-	53.3		-	53.3	0.0
	5.2 Private tubewell (Rs/ Irrigation)	3.696	700.0	2587.2	3.696	800.0	2956.8	369.6
	5.3 Mixed	0.230	700.0	161.0	0.230	800.0	184.0	23.0
6	Labour for irrigation and water course Cleaning (M.days)	1.300	500.0	650.0	1.300	600.0	780.0	130.0
7	**Farm Yard Manure (No. of Trolleys)**	0.250	2500.0	625.0	0.250	2600.0	650.0	25.0
8	**Fertilizers: (bags)**							
	8.1 DAP	1.000	3600.0	3600.0	1.000	3500.0	3500.0	-100.0
	8.2 Urea	2.000	1850.0	3700.0	2.000	1800.0	3600.0	-100.0
	8.3 NP	0.079	2600.0	205.4	0.079	2511.0	198.4	-7.0
	8.4 CAN	0.240	1400.0	336.0	0.240	1400.0	336.0	0.0
	8.5 Transport and application	3.319	80.0	265.5	3.319	90.0	298.7	33.2
9	Traded inputs cost (Rs./ acre)			22345.8			24750.5	
10	Mark up on investment on item 1 to 8 excluding item 5(1) @13 % per annum for 6 months			1564.2			1608.8	44.6
11	**Harvesting charges (40 kgs/acre)**	3.036	1239.0	3761.6	3.036	1350.0	4098.6	337.0
12	12.1 Threshing (Kgs/40 kgs)	2.407	1239.0	2982.3	2.407	1350.0	3249.5	267.2
	12.2 M.days	1.810	500.0	905.0	1.810	600.0	1086.0	181.0
13	**Land rent for 6 months**	0.500	30,000.0	15000.0	0.500	33,500.0	16750.0	1750.0
14	Average weighted land tax@Rs 200/acre/ annum	0.500	132.0	66.0	0.500	132.0	66.0	0.0
15	Management charges for 6 months	-		1625.0	-		1650.0	25.0
16	**Total cost per acre**	-		**48303.2**	-		**53312.6**	**5009.5**
17	Value of wheat bhoosa	-		9500.0	-		10000.0	500.0
18	**Net cultivation cost (item 15-16)**	-		38803.2	-		43312.6	4509.5
19	Yield per acre (kgs) #	-		**1183.4**	-		**1120.0**	-63.4
20	20.1. Cost of production at farm level:(Rs/40 kgs)			1311.6			1546.9	235.3
	20.2. Cost of production Excluding land rent			804.6			948.7	144.1
21	Marketing cost (Rs/40 kgs)	-		38.0	-		40.0	2.0
22	**Cost of production at market/procurement centre (Rs/40 kgs)**							
	22.1 Including land rent	-		**1349.58**	-		**1586.88**	237.3
	22.2 Excluding land rent	-		842.6	-		988.7	146.1

ANNEX-IX

AVERAGE FARMER COST OF PRODUCTION ESTIMATES OF WHEAT IN SINDH: 2019-20 AND 2020-21 CROPS

S. No.	Operations / Inputs	Average No. of oprs/units/ acre	2019-20 crop		2020-21 crop		Change in 2020-21 crop over 2019-20 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 plough	1.000	1500.0	1500.0	1800.0	1800.0	300.0
	1.2 Ploughing	3.000	1000.0	3000.0	1100.0	3300.0	300.0
	1.3 Ploughing & planking	0.070	1000.0	70.0	1100.0	77.0	7.0
	1.4 Planking	1.000	500.0	500.0	550.0	550.0	50.0
	1.4 Laser levelling	1.000	1000.0	1000.0	1200.0	1200.0	200.0
2	Seed and sowing operations:						
	2.1 Seed used (kgs)	55.403	55.0	3047.2	80.0	4432.2	1385.1
	2.2 Tractor drilling	0.037		0.0		0.0	0.0
	2.3 Labour for seed broadcasting (m.hour)	1.127	62.5	70.4	68.8	77.5	7.0
	2.4 Ploughing in case of broadcasting	1.000	1000.0	1000.0	1100.0	1100.0	100.0
	2.5 Planking in case of broadcasting	1.000	500.0	500.0	550.0	550.0	50.0
3	Bund making:						
	3.1 Manual (m.hour)	1.611	62.5	100.7	68.8	110.8	10.1
	3.2 tractor (hour)	0.091	1000.0	91.0	1100.0	100.1	9.1
4	Weedicides cost including appliaction cost	0.907	1200.0	1088.4	1300.0	1179.1	90.7
5	Irrigation: (Nos)						
	5.1 Canal	1.763		53.3		53.3	
	5.2 Private tubewell (RS/irrigation)	2.000	800.0	1600.0	800.0	1600.0	0.0
	5.3 Mixed	2.000	400.0	800.0	500.0	1000.0	200.0
	5.4 Lift Pump	0.551	400.0	220.4	500.0	275.5	55.1
6	Labour for irrigation and water course cleaning (M. day)	1.300	500.0	650.0	550.0	715.0	65.0
7	Farm Yard Manure (No. of Trolleys)	0.250	2800.0	700.0	3000.0	750.0	50.0
8	Fertilizer (bags)						
	8.1 DAP	1.000	3600.0	3600.0	3650.0	3650.0	50.0
	8.2 Urea	2.000	1850.0	3700.0	1875.0	3750.0	50.0
	8.3 NP	0.185	2600.0	481.0	2700.0	499.5	18.5
	8.4 CAN	0.020	1600.0	32.0	1625.0	32.5	0.5
	8.5 Transport and application	3.200	100.0	320.0	120.0	384.0	64.0
9	**Cost of Traded inputs**			24071.1		27133.2	3062.1
10	Mark up on investment on item 1 to 8 excluding item 5 (1) @13.0 % per annum for 6 months			1685.0		1763.7	78.7
11	Harvesting charges (40 kgs/acre)	2.250	1212.0	2727.0	1400.0	3150.0	423.0
12	12.1 Threshing @ 2.469 kgs/40 kgs	2.469	1212.0	2992.4	1400.0	3456.6	464.2
	12.2 M.days	1.415	500.0	707.5	550.0	778.3	70.8
13	Land rent for 6 months	0.500	30000.0	15000.0	33000.0	16500.0	1500.0
14	Land tax @ Rs 200/acre/annum for 6 months	0.500	200.0	100.0	200.0	100.0	0.0
15	Drainage cess			24.0		24.0	0.0
16	Management charges for 6 months			1624.7		1650.0	25.3
17	Total cost per acre	-		**48931.7**		**54555.7**	5624.0
18	Value of wheat bhoosa (Rs per acre)	-	200.0	9000.0	200.0	9000.0	0.0
19	Net cultivation cost (item 15-16)	-	-	39931.69		45555.68	5624.0
20	Yield per acre (kgs) #	-	-	**1262.42**		**1220.00**	-42.4
21	Cost of production at farm level: (Rs/40 kgs)			1265.2		1493.6	228.4
22	Marketing cost (Rs/40 kgs)	-	-	42.0		45.0	3.0
23	Cost of production at market/procurement centre (Rs/40 kgs)						
	23.1 Including land rent	-	-	**1307.24**		**1538.63**	231.4
	23.2 Exduding land rent	-	-	832.0		997.6	165.7

ANNEX-X

ECONOMICS OF WHEAT AND COMPETING CROPS AT PRICES REALIZED BY THE GROWERS: 2019-20 CROPS

S. No	Province/crops/ crop combination	Crop duration	Water used	Gross cost	Cost of purchased inputs	Gross revenue	Gross margin	Net income	Output-input ratio	Revenue per		
										Rupee of purchased inputs	Crop day	Acre inch of water used
		Days	inches	.....Rupees per acre.....					Ratio	.....Rupees.....		
	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	48303	14558	50919	36361	2616	1.05	3.5	283	4243
2	Seed Cotton	240	22	73136	24409	83089	58680	9953	1.14	3.4	346	3777
3	Basmati paddy	180	58	62874	31003	70743	39740	7868	1.13	2.3	393	1220
4	IRRI paddy	180	62	64826	29022	67198	38175	2371	1.04	2.3	373	1084
5	Sunflower (spring)	180	22	51601	18548	55538	36989	3937	1.08	3.0	309	2524
6	Canola	180	13	35999	8816	48945	40129	12946	1.36	5.6	272	3765
7	Seed cotton + wheat	420	34	121439	38968	134008	95040	12569	1.10	3.4	319	3941
8	Seed cotton + sunflower	420	44	124737	42957	138627	95669	13889	1.11	3.2	330	3151
9	Basmati paddy+wheat	360	70	111178	33730	103656	69926	-7522	0.93	3.1	288	1481
10	Basmati paddy+sunflower	360	80	114475	49551	126280	76729	11805	1.10	2.5	351	1579
11	IRRI paddy + wheat	360	74	113129	43581	118117	74536	4987	1.04	2.7	328	1596
12	IRRI paddy+sunflower	360	84	116427	47571	122735	75164	6308	1.05	2.6	341	1461
13	Sugarcane	394	48	116197	39651	139103	99452	22906	1.20	3.5	353	2898
	Sindh											
1	Wheat	180	12	49199	15595	53184	37589	3985	1.08	3.4	295	4432
2	Seed cotton	240	18	80876	27403	90757	63354	9881	1.12	3.3	378	5042
3	IRRI paddy	180	56	53211	18745	59950	41205	6739	1.13	3.2	333	1071
4	Sunflower (spring)	180	22	38783	14018	38824	24806	41	1.00	2.8	216	1765
5	Canola	180	13	30713	8510	37600	29090	6887	1.22	4.4	209	2892
6	Seed cotton + wheat	420	30	130075	42998	143941	100943	13866	1.11	3.3	343	4798
7	Seed cotton+sunflower	420	40	119659	41420	129581	88160	9922	1.08	3.1	309	3240
8	IRRI paddy + wheat	360	68	102410	34340	113134	78794	10724	1.10	3.3	314	1664
9	IRRI paddy+sunflower	360	78	91994	32762	98774	66011	6779	1.07	3.0	274	1266
10	Sugarcane	488	71	109973	37066	127210	90144	17236	1.16	3.4	261	1792

Notes for Annex – X

1.

The economic analysis presented in the above exercise is based on the input-output prices applicable for 2019-20 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, 2019-20 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 2019-20 crops. To incorporate the escalations in input prices, which occurred during the growing period of 2019-20 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 1400 per 40 kgs, as maintained by the government for 2019-20 crop, has 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 1950 and Rs 1350 per 40 kgs, respectively. While, the average price of IRRI paddy in Sindh is reported at Rs 1300 per 40 kgs.

4.3 The wholesale market prices of seed cotton during the post-harvest months of 2019-20 in the main producer area markets have averaged at Rs 3949 per 40 kgs in the Punjab and Rs 3634 Sindh.

4.4 The price of Sunflower crops has been reported hovering around Rs 3000/40 kgs and Rs 3050/40 kgs for Canola during 2019-20.

4.5 The average market prices of sugarcane as realized by the farmers are taken for the analysis i.e Rs 220 per 40 kgs in the Punjab and in Sindh. However, the prices notified by the provincial governments were lower i.e Rs 190 and 192, 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 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 38 in Punjab and Rs 42 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.

ANNEX- XI

ECONOMIC EFFICIENCY OF RESOURCE USE IN WHEAT PRODUCTION IN PUNJAB

POLICY ANALYSIS MATRIX (PAM)

Based on import parity prices

Description	Revenues	Traded cost	Domest Factor cost	Profits
		--------- Rupees per acre ---------		
2013-14				
Private Prices	39876	18586	17684	3606
Social Prices	46318	16209	17484	12625
Transfers	-6442	2377	199	-9019
2014-15				
Private Prices	38740	19312	20203	-775
Social Prices	40085	16171	19895	4020
Transfers	-1345	3142	308	-4795
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

XII
ANNEX-XIII

ECOI

Desc
2013-
Priva
Socia
Tran
2014-
Priva
Socia
Tran
2015-
Priva
Socia
Tran
2016-
Priva
Socia
Tran
2017-
Priva
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IMPACT OF INCREASE IN SUPPORT PRICE OF WHEAT ON AVERAGE HOUSEHOLD EXPENDITURE

Proposed support price	Expenditure on wheat at average per capita @ 116 kgs per year **		Rise in annual per capita expenditure	
	Person	Per household	Person	Per household
- Rs per 40 kgs	---------- Rupees per year ----------			
*1400	4060	25334	-	-
1425	4132	25784	72	449
1450	4205	26239	145	905
1475	4277	26688	217	1354
1500	4350	27144	290	1810
1525	4422	27593	362	2259
1550	4495	28049	435	2714

Note: Average size of household comprises of 6.24 members.

***Existing price for 2020-21 wheat crop.**

****Recommended by API.**

Source: PSLM household Integrated Survey (HIES) 2018-19, Pakistan Bureau 0f Statistics (PBS), Islamabad.

ANNEX-XIV

LIST OF WHEAT VARIETIES RELEASED ACROSS PAKISTAN

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
Source: Wheat Coordination Division, PARC, Islamabad.			

ANNEX-XV

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