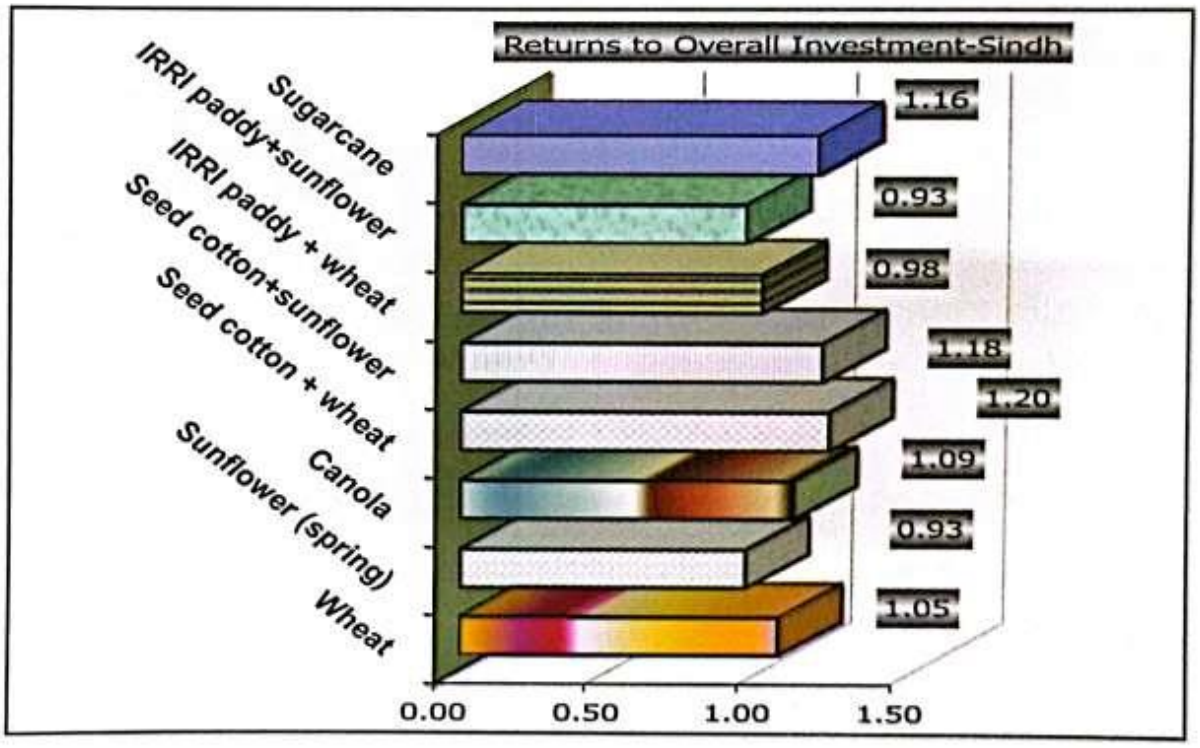
API SERIES NO. 272

WHEAT POLICY ANALYSIS FOR 2019-20 CROP



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

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

WHEAT POLICY ANALYSIS FOR 2019-20 CROP

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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 87.0 per cent of the area and contribute about 91.1 per cent in wheat production. While the share of Khyber Pakhtunkhwa and Balochistan is 13 per cent in area and 8.9 per cent in production.
- During the years ending 2018-19 wheat production has increased modestly @ 0.7 per cent per annum.
- Wheat production from 2018-19 crop is estimated at 24.35 million tonnes, showing 2.9 per cent decline over the production of 25.08 million tonnes in 2017-18.
- Since 2010, 22 high yielding wheat varieties have been developed by Research Institutes in Punjab for the irrigated and rainfed areas with an estimated yield potential of 7500-8000 kgs per hectare.

Domestic Requirements

- Based on 3-year average per capita availability of 113 kgs per annum, the domestic requirement of wheat for human consumption comes to 25.24 million tonnes for the year 2018-19.
- Assuming the per capita consumption at 100 kgs per annum, the domestic requirement for human consumption comes to 22.34 million tonnes.
- Including one million tonnes as food security reserve and 2.54 million tonnes for seed, feed and wastage, the total domestic requirement will range between 25.88 and 28.79 million tonnes. Adding the last year stocks, the surplus estimates at 0.44 to 3.34 million tonnes, respectively.

Domestic Prices

- Monthly average market prices of wheat for 2018-19 crop remained below the support price, in Punjab and Sindh.
- The wholesale prices of wheat averaged at Rs 1280 per 40 kgs in the Punjab and Rs 1161 in Sindh during the post harvest season in major producing areas.

Cost of Production

- In Punjab, the cost of wheat cultivation for 2019-20 season is estimated at Rs 48,303 per acre including land rent.

- The cost of production at market / procurement centre level would be Rs 1349.6 per 40 kgs, 2019-20, which is higher by Rs 65 than the corresponding COP Rs 1284 in 2018-19.
- In Sindh, the gross cost of wheat cultivation for 2019-20 crop is probable at Rs 49,146 per acre including land rent.
- The cost of production at market/procurement centre level would come to Rs 1314 per 40 kgs, showing increase of Rs.44 over the last year.

Economics of Wheat and Competing Crops

- Wheat farming in Punjab is relatively logging behin oilseed crops during 2018-19. Wheat performed at par with the sunflower during 2018-19 in terms of certain economic criteria except crop duration. However, sunflower out-performed wheat in crop duration while canola has given better rewards over wheat and sunflower in terms of returns to overall investment and purchased inputs.
- In Sindh, wheat has performed better than the sunflower with a big margin. However, canaolas position is better than the sunflower with repect to overall investment and other indicators.
- In case of indirect competition, sugarcane performed lower than the wheat crop combinations with cotton in respect of returns to overall investment, crop duration and irrigation water in Punjab and Sindh.
- However, cotton combinations with wheat and sunflower are observed proftable in terms of irrigation water over others. IRRI combinations in Sindh paid returns to the growers lower against the sugarcane in terms of various economic criteria.

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 2019.
- During 2018-19, the parity ratio between market prices of Nitrogen and wheat was not in favour of wheat due to high prices of Nitrogen fertilizer and 2.41 units of wheat were required to buy one unit of Nitrogenous fertilizer.
- The quantity of wheat needed to buy one nutrient tonne of Phosphatic fertilizer has fluctuated between 1.16 to 6.26 tonnes during 2008-18.
- During 2018-19, the parity ratio between market prices of Phosphatic and wheat purchasing power has changed in disfavour of wheat 2.81 units of wheat could purchase one unit of P fertilizer.

Nominal and Real Support Prices

- The nominal support prices of wheat during 2007-08 to 2018-19 have experienced, overall increase of 108 per cent, .while the real support prices have decreased by (-13.3) per cent over the base year.

Nominal and Real Market Prices

- The nominal market prices of wheat have shown an overall increase of 82 per cent, while the real market prices have shown, receded by (-24) per cent due to rise in CPI (14%).

World Production and Prices

- World wheat production estimated at 733 million tonnes in 2018-19 is lower by 31 million tonnes than the last year while it is forecast at 764 million tonnes in 2019-20.
- The closing stocks at 270 million tonnes in 2017-18 deteriorate to 265 million tonnes in 2018-19 and are forecast at 271 million tonnes in 2019-20,an increase of 6 million tonnes.
- 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 of US $ 197 per tonne in 2016-17, however, showed upward trend and reached at US $ 257 per tonne in 2018-19.
- During this month of 2019-20, international prices of US No. 2 HRW wheat have averaged at US $ 211 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 1055 and 1079 per 40 kgs. The export parity price calculates to Rs 1325 and 1061 per 40 kgs, respectively on the basis of average fob price during 2018-19.
- Based on the Fob price during 2019-20 (July-Aug), the export parity prices of US $ 2 HRW calculate to Rs 1893 per 40 kgs at Multan and Rs 1809 per 40 kgs at Karachi as compared to SRW the prices calculate to Rs 1920 at Multan and Rs 1836 per 40 at Karachi.
- The correspoding prices for 2018-19 are worked out respectively at Rs 2203 and 2119 per 40 kgs wheras the SRW worked out at 1900 and 1816 per 40 kgs.

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 less than one in 2013-16 to 2018-19 in Punjab and Sindh.
- The EPCs little bit increase during the entire period 2017-18 because Government gave subsidy to fertilizer which is significantly reduced the input cost.
- Under export scenario, the NPC values are either close and greater than one, this mean that domestic input prices and open market prices of wheat do not offer favourable prospects for wheat export from Pakistan.
- The DRC indicates the opportunity cost of domestic resources employed per unit of value added in production of a commodity.

- The DRCs are substantially less than one except 2015-16 during the period, indicating a Pakistan Comparative Advantage in domestic wheat production rather than to import. While under export scenario, DRCs coefficients do not indicates Comparative Advantage being greater than one; this 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 59th 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, but now this gap in yield can be narrowed through adoption of optimal technology.
- Support price of wheat in India during 2015-16 to 2017-18 was considerably lower as compared to Pakistan, through providing huge subsidies on farm inputs.
- During 2017-18 wheat support price was 1735/quantal = PKR 1548/40 kgs which has been increased to IR = 1840/quantal = PKR = 1641/ 40 kgs showig a considerable increase over Pakistan support price despite the lower COP of IR=1339/quantal = PKR 1194/40 kgs.

Impact of Support Price on CPI and Household Expenditure

- In case the support price of wheat is enhanced by Rs 100 per 40 kgs over the existing level of Rs 1300 per 40 kgs, the CPI would likely to rise by 0.014 per cent.
- Likewise, the increases of Rs 100 per 40 kgs over the existing support price would bring additional expenditure of Rs 300 per capita per year or Rs 1578 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 2019-20 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 2018-19, if exported from Multan	1325	1061
	b) Fob (gulf) average prices of US HRW & SRW wheat during 2016-17 to 2018-19, if exported from Multan	1155	932
	c) Fob (gulf) prices of US HRW & SRW wheat during 2018-19 (Jul-Aug), if exported from Multan	1055	1079
2.	**Import parity price on the basis of:**		
	a) Fob (gulf) prices of US HRW & SRW wheat during 2018-19, if consumed at:		
	- Karachi	2119	1816
	- Multan	2203	1900
	b) Fob (gulf) price of US HRW & SRW wheat during 2016-17 to 2018-19, if consumed at:		
	- Karachi	1924	1668
	- Multan	2008	1752
	c) Fob (gulf) price of US HRW & SRW wheat during 2019-20 (July-Aug), if consumed at:		
	- Karachi	1809	1836
	- Multan	1893	1920
3.	**Monthly average wholesale market prices of wheat in major producing areas during the post-harvest period of 2018-19 crop:**		
	- Punjab	1280	-
	- Sindh	1161	-
4.	**Cost of production estimates at market/procurement centre level for 2019-20 crop:**		
	- Punjab	1350	-
	- Sindh	1314	-

- **Recommendations**

In view of the field information, consultation with the stakeholders in the API Committee meeting on Wheat and analysis of relevant factors, following recommendations are made regarding the support price, improving productivity and marketing of 2019-20 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 in the economy.
- In view of the existing crop situation, stocks, consumption and production estimates of wheat, the Government domesticcally may like to consider 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 policy of encouraging the role of private sector in wheat marketing needs to be further strengthened.
- This price 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 may be designated as the implementing agencies for the procurement of wheat at the support price announced by the government.
- PASSCO and Provincial Food Departments should make prior arrangements for wheat prourement and enter in the field well in time especially in Sindh province where the harvesting starts early.
- Some export oriented zone may be designated for which public sector procurement should be ensured for disposal off /export of such stock from the country.

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.
- A strategic reserve of One 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 2019-20 CROP

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INTRODUCTION

Wheat is one of the largest crops of the country and the staple diet. Wheat contributes about 8.9 per cent to the value added in agriculture and 1.6 per cent to the GDP[1]. The crop occupies around 39.54 per cent of total cropped area. It is generally cultivated on 8.8 million hectares with an annual average production of 25.37 million tonnes (2016 - 19) wheat production. About 88.7 per cent of wheat area is irrigated which accounts 94.6 per cent of the annual production. During certain years like 2010-11 and 2011-12, wheat was exported in high quantity. During 2018-19, wheat production target was 25.57 million tonnes fixed by the (FCA). However, the production got down by 4.8 per cent yield by 3.1 per cent and area by1.8 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. 59th 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 6 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 alongwith 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 NFS & R on the Support Price Policy of Wheat for 2018-19 and retained at Rs 1300 per 40 kgs.

4. Wheat procurement during 2018-19 was reported at 4.034 million tonnes, against the target of 6.25 million tonnes[3]. Procurement agencies have achieved 98.18 per cent of the target fixed by the government.

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[1] Economic Survey of Pakistan, 2018-19.
[2] Food and Agriculture Organization.
[3] M/o National Food Security and Research.

5. The price policy recommendations for 2019-20 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 and the Punjab during third week of July, 2018 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-1.

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 upto the end of December.

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

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

13. Normally in Pakistan, wheat harvesting starts from 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 2018-19 CROP

3.1 Provincial Shares in Area and Production

14. Based on average ending 2016 to 2019, the Punjab and Sindh contribute about 76.2 and 14.9 per cent in total wheat production while the shares of the KPK and Balochistan are around 5.3 and 3.6 per cent, respectively. The provincial shares of area and production are presented in Table-2 and depicted in Figures 1 & 2, respectively.

15. Around 88.7 per cent of wheat acreage is cultivated under irrigated conditions which contribute 94.6 per cent of wheat production in the country.

Table-2: Average Share of different provinces in Area and Production of Wheat (2016-17 through 2018-19)

Item/ Province	Total	Pakistan	Punjab	Sindh	KPK	Balochistan
	000 hect.	**---------- Per cent ----------**				
A. Area						
Total	**8815.8 (21784.8)**	**100.0**	**74.5**	**12.5**	**8.5**	**4.5**
Irrigated	7820.3 (19324.7)	88.7	68.2	12.1	4.1	4.4
Un-irrigated	995.5 (2460.1)	11.3	6.4	0.4	4.4	0.1
B. Production	000 tonnes	**---------- Per cent ----------**				
Total	**25366.3**	**100.0**	**76.2**	**14.9**	**5.3**	**3.6**
Irrigated	23985.6	94.6	73.4	14.6	3.0	3.6
Un-irrigated	1380.7	5.4	2.9	0.3	2.2	0.0

Note: Figures in parentheses are thousand acres.
Source: Worked out from Annex-I & II.

3.2 Long-term Changes: 2008-09 to 2018-19

16. During the decade ending 2018-19, wheat production at country level has surged @ 0.7 per cent per annum owing to 0.8 per cent improvement in yield and 0.1 per cent contraction in area. In the Punjab, wheat production has increased @ 0.6 per cent annually due to 0.9 per cent improvement in yield and also 0.3 per cent acreage reduction. In Sindh, wheat production increased slightly @ 0.04 per cent per annum due to enhancement of area by 0.4 percent and however 1.8 percent shriveling of yield of the crop. Annual growth rate of wheat production in KPK and Balochistan remained 1.8 to 2.9 percent.

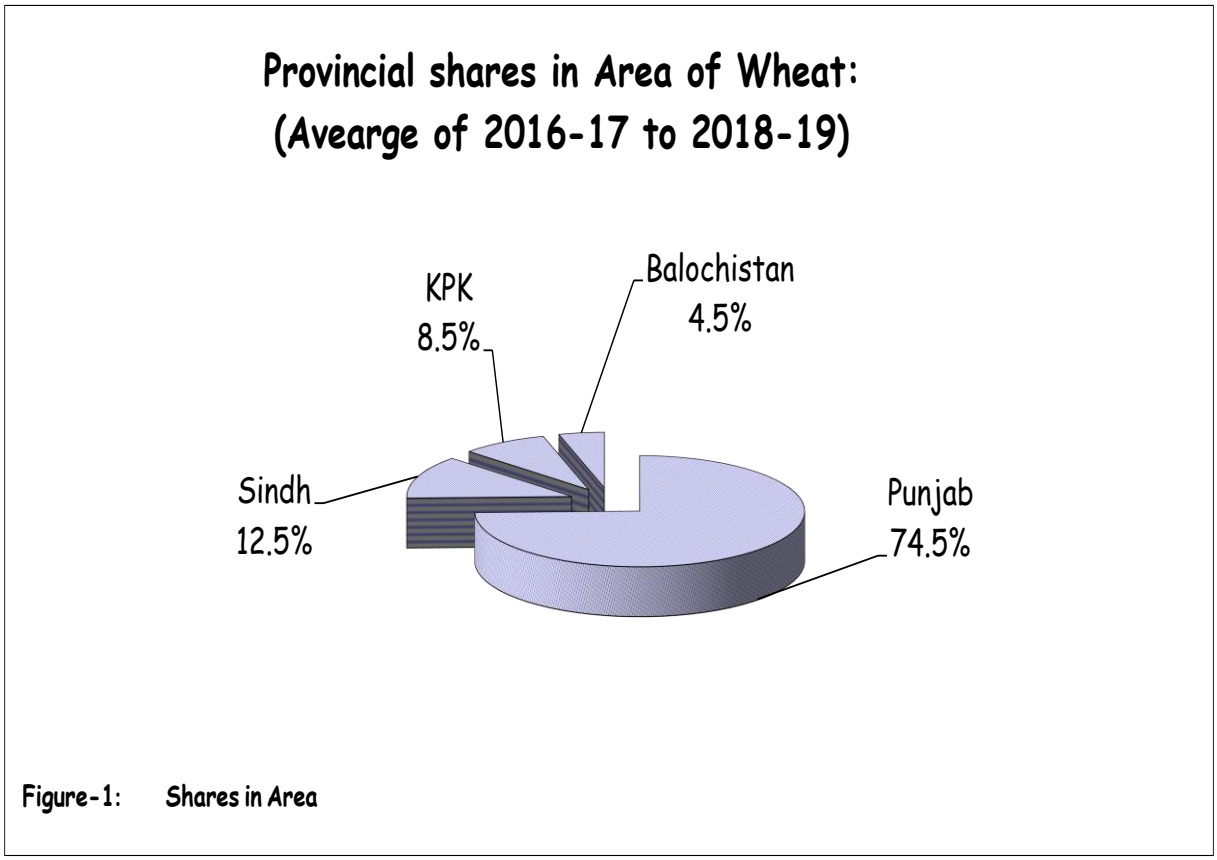

Figure-1: Shares in Area

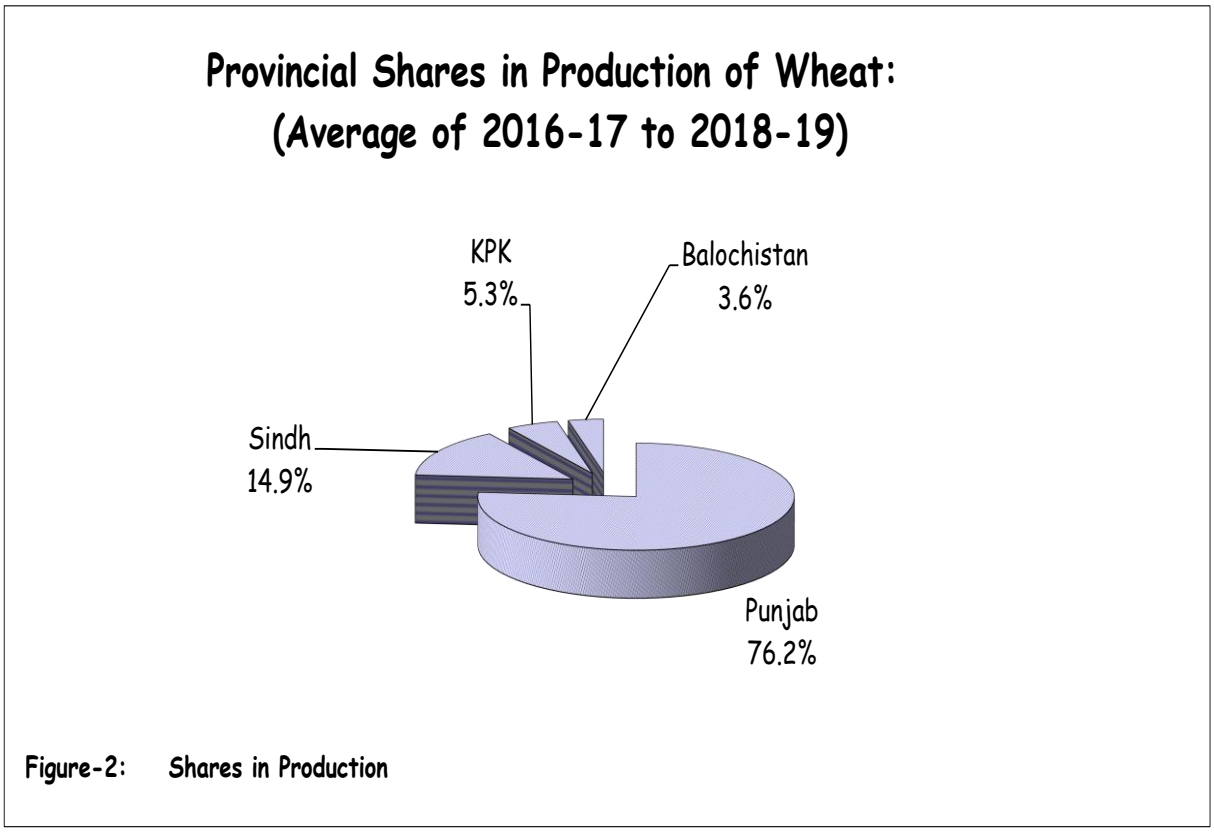

Figure-2: Shares in Production

Table-3: Average Annual Growth Rate of Area, Yield and Production of Wheat during 2008-09 through 2018-19

Country/ Province	Area	Yield	Production
	---------- Per cent per annum ----------		
Pakistan	**-0.1**	**0.8**	**0.7**
Punjab	-0.3	0.9	0.6
Sindh	0.4	-0.3	0.04
KPK	0.0	1.8	1.8
Balochistan	0.5	2.4	2.9

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: 2013-14 to 2018-19

17. The annual growth rate for the period 2013-14 to 2018-19 shows that in Pakistan wheat production has decreased @ 0.8 per cent solely due to 1.3 percent reduction of area however yield had increased 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: 2013-14 to 2018-19

Country/Province	Area	Yield	Production
	--------- Per cent per annum ---------		
Pakistan	**-1.3**	**0.5**	**-0.8**
Punjab	-1.5	0.6	-0.9
Sindh	-1.0	0.2	-0.8
KPK	-0.5	0.5	0.0
Balochistan	-0.1	0.7	0.6

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 2018-19 Crop against 2017-18 (Short Term Changes)

18. Wheat production from 2018-19 crop is reported at 24.349 million tonnes at the country level, showing 2.9 per cent inferior over 25.076 million tonnes in 2017-18 due to decrease of 1.6 percent in yield and 1.4 percent in area. These statistics are produced in Table-5.

Table-5: Area, Yield and Production of Wheat: 2017-18 and 2018-19 Crops

Country/ Province	Area		Changes	Yield per hectare		Changes	Production		Changes
	2017-18	2018-19		2017-18	2018-19		2017-18	2018-19	
	-- 000 hectares --		Per cent	-----Kgs ----		Per cent	-- 000 tonnes --		Per cent
Pakistan	**8797.3**	**8677.8**	**-1.4**	**2850**	**2806**	**-1.6**	**25076.2**	**24349.0**	**-2.9**
Punjab	6559.8	6495.9	-1.0	2924	2829	-3.2	19178.6	18377.2	-4.2
Sindh	1089.6	1052.7	-3.4	3340	3590	7.5	3639.5	3778.9	3.8
KPK	753.4	739.6	-1.8	1756	1795	2.2	1322.7	1327.6	0.4
Balochistan	394.5	389.6	-1.2	2371	2221	-6.3	935.4	865.3	-7.5

Source: Annex-I.

3.5 Important Wheat Producing Districts

19. The Bahawalnagar district is on the top in wheat production in Pakistan. If produces more than one million tonne of wheat per annum. Districts producing more than 500 thousand tonnes per annum are R.Y.Khan, Bahawalpur, Muzaffargarh, Jhang, Faisalabad, Vehari, Lodhran, Khanewal, Sheikhupura, Okara, Gujranwala, Layyah, Multan, Rajanpur, T.T.Singh. D.G.Khan, Sargodha, Hafizabad, Sialkot and Kasur. These 21 districts produce 58 per cent of total wheat production in Pakistan while their share in area is estimated at 53 per cent. Sahiwal, Pakpattan, Bhakhar, Nankana Sahib, Mianwali, M.B.Din, Chinniot and Narowal from Punjab and Naushero Feroz, Khairpur, Sanghar, Ghotki from Sindh, Swat from KPK, 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: 2018-19 Crop

20. Wheat production target for 2018-19 crop was at 25.572 million tonnes from an evidence area of 8.833 million hectares by Federal Committee on Agriculture (FCA). However, production from the 2018-19 crop is reported at 24.349 million tonnes under letdown of yield target by 3.1 percent and by 1.8 percent against the target. Provincial details on area, yield and production may be seen in Table-6 which is depicted in Figures 3 and 4.

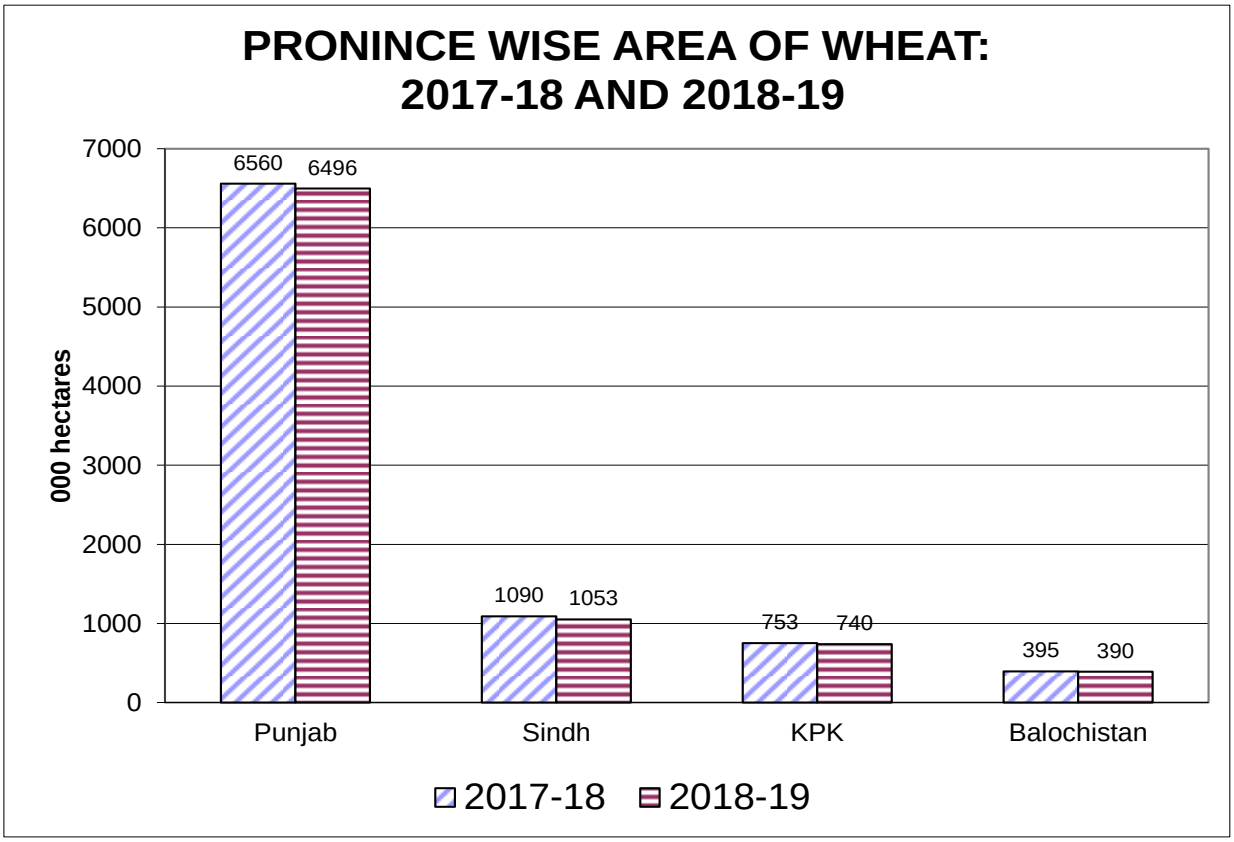

Figure-3

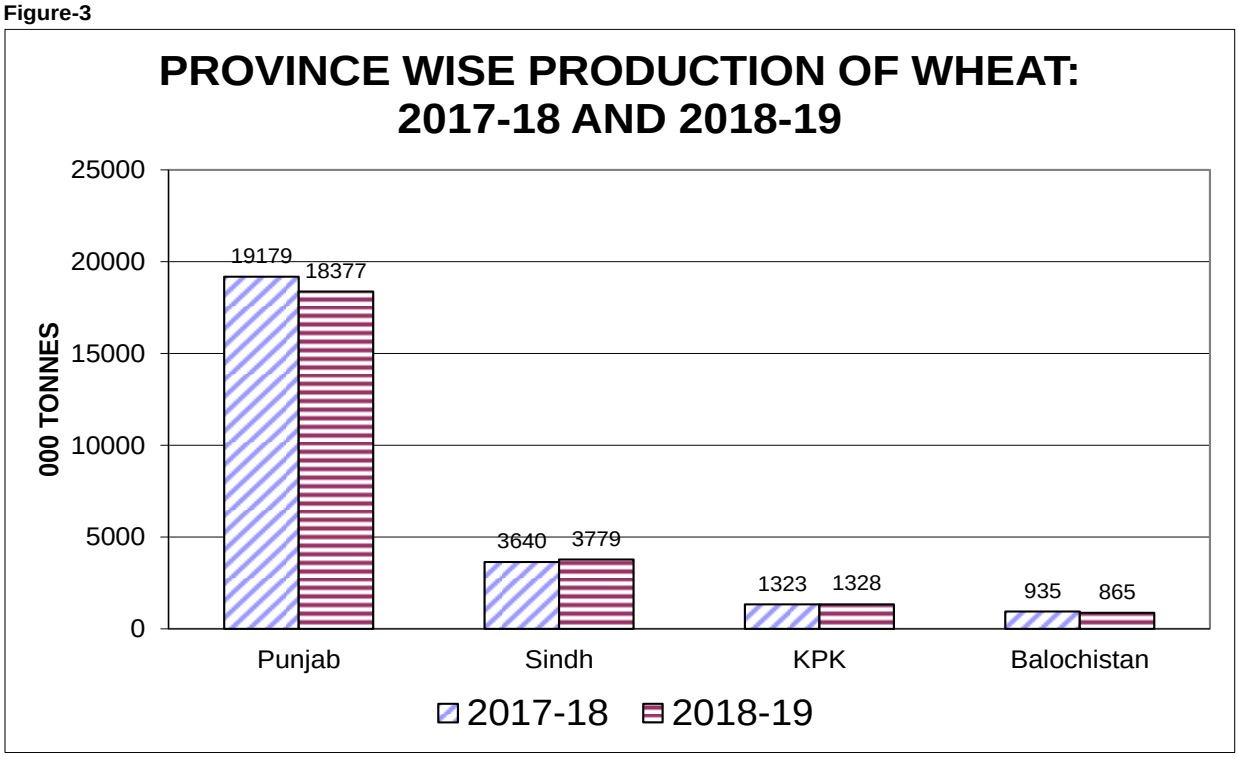

Figure-4

Table-6: Targets Vs Achievements in Area, Yield and Production of Wheat: 2018-19 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	**8833.4**	**8677.8**	**-1.8**	**2895**	**2806**	**-3.1**	**25572.0**	**24349.0**	**-4.8**
Punjab	6515.0	6495.9	-0.3	2995	2829	-5.5	19510.0	18377.2	-5.8
Sindh	1150.0	1052.7	-8.5	3304	3590	8.6	3800.0	3778.9	-0.6
KPK	768.4	739.6	-3.7	1773	1795	1.3	1362.0	1327.6	-2.5
Balochistan	400.0	389.6	-2.6	2250	2221	-1.3	900.0	865.3	-3.9

Sources: 1. For targets: Minutes of the meeting of FCA held on 17-04-2019 at Islamabad
2. For Achievements: Annex-I.

4. FACTORS CONSIDERED FOR PRICE POLICY ANALYSIS

21. Following major factors were considered for the analysis of the price policy of wheat 2019-10 crop:

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

4.1 Domestic Demand, Supply, Stocks and Price Situation

- Domestic Demand, Supply and Stocks

22. According to second estimate, the country has produced 25.20 million tonnes wheat during 2018-19. After adding the carryover stocks of 3.78 million tonnes as on May 1, 2019, total wheat supply in the country for 2019-20 consumption year becomes 28.97 million tones. This supply may slightly increase if production of wheat in Azad Kashmir and Gilgit Baltistan estimated at 0.25 million tonnes is added. Thus total availability of wheat in the country would be 289.23 million tonnes.

23. National requirement of wheat has been worked out on the basis of balance sheet method 113 per annum and 100 kgs as presented by M/o National Food Security and Research. According to API balance sheet method, annual per capita availability of wheat requirement for human consumption for 2019-20 for the population of 223.39 million (including population Northern area, Gilgit Biltistan and Afghan Refugees) is estimated at 25.24 million tonnes. Accounting for export, seed, feed and wastage @ 10 per cent of production and strategic reserve of one million, gross domestic requirement for 2019-20 is estimated at to 28.79 million tonnes. However, this requirement would be 25.88 million tonnes if estimated at per capita availability of 100 Kgs per annum as suggested by M/o NSF&R. Resultantly, the country have 0.44 million tonne surplus wheat available as per 113 kgs consumption whereas it would be 3.34 million tonne if used the 100 kgs per capita consumption. The calculations are presented in Table -7.

Table-7: Domestic Requirements of Wheat for 2019-20 Wheat Year: (May-April)

S. No.	Item	Based on annual per capita Consumption on the basis of	
		M/o NFS&R	API
		100 Kgs	113 Kgs
1.	Population (Million)	223.39	223.39
2.	Human consumption requirement (Million tonnes)	22.34	25.24
3.	Allowance for seed, feed and wastage @ 10 per cent of total production of 2018-19 crop(Million tonnes)	2.43	2.43
4.	Food Security reserves (Million tonnes)	1.00	1.00
5.	**Total requirements (Million tonnes)**	**25.77**	**28.79**
6.	**Total supply (production + carry forwarded)** (Million tonnne)	**29.23**	**29.23**
7.	Surplus/ Deficit(Million tonnes)	3.34	0.44

Source: Annex-IV.

- **Post harvest prices**

24. Monthly wholesale prices of wheat during the post-harvest months of 2018-19 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 2018-19 Crop

Markets	April	May	June	Average
	----------Rs per 40 kgs----------			
Faisalabad	1290	1297	1265	1284
Sargodha	1292	1256	1295	1281
Multan	1274	1307	1338	1306
Gujranwala	1307	1300	1325	1311
Okara	1179	1275	1335	1263
R. Y. Khan	1196	1285	1306	1262
Bahawalpur	1260	1259	1260	1260
D. G. Khan	1275	1275	1275	1275
Average	1259	1282	1300	1280

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

Table-9: Monthly Average Wholesale Prices of Wheat in Main Producing Area Markets of Sindh during Post-harvest Season of 2018-19 Crop

Markets	April	May	June	Average
	----------Rs per 40 kgs----------			
Mirpur Khas	1200	1174	1195	**1190**
Sanghar	1167	1143	1165	**1158**
Hyderabad	1198	1163	1150	**1170**
Nawabshah	1210	1138	1135	**1161**
N.S.Feroze	-	1160	1165	**1163**
Khairpur	-	1220	1208	**1214**
Sukkur	-	1160	1165	**1163**
Average	**1158**	**1158**	**1168**	**1161**

Source: Director Agriculture Farms Major Crops, Sindh.

25. The statistics in Table-8 reveals that the monthly average wholesale prices of wheat in main producing areas of Punjab were below the support price of Rs 1300 per 40 Kgs during the month of April to June 2019 except Multan Guranwala and Okara Markets. The price were slightly above

the support price during post-harvest season in Guranwala market. In Multan market, prices surpass the support price during May and June and Orkara market, price were above the support price during month of June only. The seasonal average has ranged between Rs 1260 to Rs 1306 per 40 kgs.

26. In Sindh, Table-9, the price of wheat ruled lower the support price of wheat during the post- harvest season of 2018-19 (April to June). The lowest process were observed @ Rs 1138 in Nawbshah market during month of May, 2019 and the highest price Rs 1220 per kgs were witnessed in Khyerpur market during month of May, 2019. The seasonal average ranged between Rs 1161 per 40 kgs to Rs 1214 per 40 kgs.

4.2 World Production, Consumption, Stocks and Trade Situation

27. The data on world production, consumption, stocks and trade situation from 2017-18 to 2019-20 are presented in Table-10.

Table-10: World Wheat Situation: 2017-18 to 2019-20

Items	2017-18	2018-19 (Estimated)	2019-20 (Forecast)
	……..Million tonnes…….		
Opening stocks	248	270	265
Production	761	733	764
Total Supply	1009	1003	1029
Consumption	739	738	758
Closing stocks	270	265	271
Trade	176	170	172

Source: Grain Market Report, International Grains Council, London, August 29, 2019 GMR No 502

28. The world wheat production in 2018-19 is estimated at 733 million tonnes, 28 million tonns or 3.68 per cent lower than that last year production of 761 million tonnes. Adding the opening stocks of 270 million tonnes, the world supply of wheat in 2018-19 is estimated at 1003 million tones 6 million tonnes lower than the last year. Due to significantly less production during 2018-19, carryover stocks have been estimated decrease to 265 million tonnes as compared to 270 million tonnes last year's stock.

29. According to the International Grains Council London, report of August 29, 2019, the global wheat production in 2019-20 is forecast to decrease to 764 million tonnes. Accounting for the opening stocks of 265 million tonnes, total supply is anticipated at 1029 million tonnes against the consumption forecast of 758 million tonnes in 2019-20. Due to higher production forecast, the carryover stocks will be decreased to 271 million tonnes, 6 million tonnes higher than last year stocks.

30. If the above mentioned forecast become true, the price of wheat in international market may firm at same level.

4.3 International Prices of Wheat

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

32. Average Fob (Gulf) prices of US Hard Red Winter from 2008-09 to 2019-20 (Jul-Aug) are presented in Annex-V. The prices of US Hard Red Winter showed a volatile pattern during the period under review.

33. The prices averaged at US $ 209 per tonne during 2009-10 but increased sharply in the next year to US $ 316 per tone with a slump in 2011-12 at $ 301, the prices increased sharply during 2012-13 and averaged at US $ 347 per tonne, the highest level of price during the period under review. The world prices of wheat showed a decreasing trend and averaged at US $ 197 per tonne in 2016-17, the lowest level of price during the period under review. The prices showed again an upward trend and averaged at US $ 257 per tonne during 2018-19. In current season 2019-20 (July-Aug), the price is showing a downward trend and averaged at $ 211 per tonne.

34. The price of Soft Red Winter has followed an almost similar pattern as of HRW during the period under review. However, the price of SRW which were lower than HRW during the period under review is observed surpassing the HRW Price in 2019-20.

4.4 Export and Import Parity Prices

35. The export and import 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.

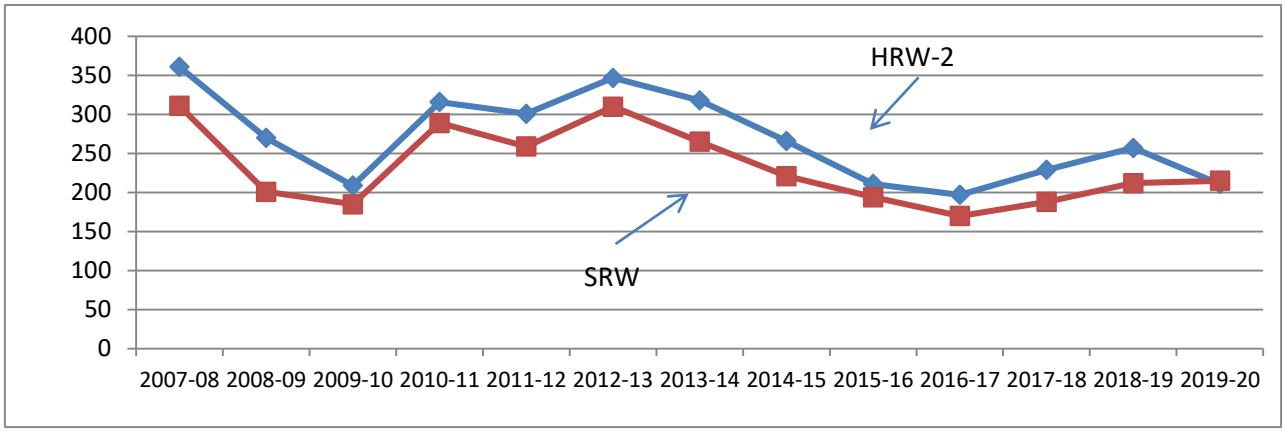

Fig-5: Export and Import fob (Gulf) prices of US No 2 HRW and SRW wheat

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

Item	2019-20 Jul-Aug	During 2018-19	During 2016-17 to 2018-19
Fob Gulf price of HRW assuming for FOB (Karachi) price (US $ per tonne)	211	257	228
Export parity price per 40 kgs at procurement centre	1055	1325	1155
Fob Gulf price of SRW assuming for FOB (Karachi) price (US $ per tonne)	215	212	190
Export parity price per 40 kgs at procurement centre	1079	1061	932

Table -12 Import Parity Price of Wheat on the Basis of US No 2 HRW and SRW fob (Gulf) Price

Item	2019-20 Jul-Aug	During 2018-19	During 2016-17 to 2018-19
Fob Gulf price of HRW (US $ per tonne)	211	257	228
Import parity price per 40 kgs of wheat:			
i) if consumed at Multan	1893	2203	2008
ii) If consumed at Karachi	1809	2119	1924
Fob Gulf price of SRW (US $ per tonne)	215	212	190
Import parity price per 40 kgs of wheat:			
iii) if consumed at Multan	1920	1900	1752
iv) If consumed at Karachi	1836	1816	1668

4.5 Cost of Production of Wheat

36. In formulating indicative price proposals for field crops, cost of production (COP) is one of the primary parameters. However, empirical estimation of COP of some crops involves a number of conceptual and practical difficulties. These difficulties in general arise from large number of growers with diverse farming systems which involve substantial variation in agro-climatic conditions, cropping pattern, input usage, farm technologies adapted and cultural practices resulting in varying crop yields and cost of production.

37. Cost of production of wheat for 2019-20 crop in Punjab and Sindh has been estimated by adopting input-output parameters used in 2018-19 Wheat Policy Analysis Report alongwith the latest input prices and custom hire rates of cultural operations which were collected through mini field survey of API held during July 2019 in major wheat growing areas of the Punjab and Sindh. These input prices and custom hire rates were complemented with the information provided by representatives of Provincial Governments and Farmer Associations in API committee meeting on wheat held on August 19, 2019 at Islamabad. Details of the COP estimates for Punjab and Sindh for 2018-19 and 2019-20 crops are presented at Annex-VIII and Annex-IX while summary of these is presented in Table-13.

4.5.1 Average Farmer Cost of Production of Wheat: 2018-19 and 2019-20 Crops

38. Cost of production estimates of wheat in Punjab and Sindh for 2018-19 and 2019-20 crops are summarized and presented in Table-13.

- **Punjab**

39. Expected cost of cultivation per acre of wheat in Punjab during 2019-20 is likely to be Rs 48303 including land rent (Table12). Cost of producing wheat at the farm gate is worked out at Rs 1312 per 40 kgs, provided that average yield is 1183 kgs per acre. Accounting for the marketing charges @ Rs 38 per 40 kg, market/procurement centre level cost of production comes to Rs 1350, high by Rs 66 (5.1%) than the corresponding cost of Rs 1284 in 2018-19.

- **Sindh**

40. Total cost of production per acre of wheat in Sindh during 2019-20 crop is likely to be Rs 49146 (inclusive land rent). Distributing this cost over average yield of 1262.4 kgs per acre, farm level cost of production comes to Rs 1272 per 40 kgs. Adding marketing cost @ Rs 42 per 40 kg, cost of producing and delivering 40 kg wheat at market/procurement centre level comes to Rs 1314, which reflects an increase of Rs 44 (3.5%) over the last year corresponding cost of production.

Table-13: Average Farmer Cost of Production of Wheat: 2018-19 versus 2019-20 Crop

Items	Units	2018-19 Crop	2019-20 crop	Increase/ decrease in 2019-20 over 2018-19
Punjab				
1. Total cost of cultivation	Rs/acre	44431	48303	3872
2. Yield	0Kgs/acre	1200	1183	17
3. Cost of production at farm level	Rs/40 kgs	1246	1312	66
4. Marketing cost	Rs/40 kgs	38	38	0
5. Cost of production at market/ procurement centre level				
a) With land rent	Rs/40 kgs	1284	1350	66
b) Without land rent	Rs/40 kgs	784	843	59
Sindh				
1. Total cost of cultivation	Rs/acre	42614	49146	6532
2. Yield	Kg/acre	1225	1262.4	37.4
3. Cost of production at farm level	Rs/40 kgs	1228	1272	44
4. Marketing cost	Rs/40 kgs	42	42	0
5. Cost of production at market/ procurement centre level				
a) With land rent	Rs/40 kgs	1270	1314	44
b) Without land rent	Rs/40 kgs	862	839	-23

Source: Annex-VIII and IX.

41. Increase in cost of production of wheat for 2019-20 crop in Punjab and Sindh over the last year costs are mainly attributed to change in price of fertilizer, hiring rates of ploughing, irrigation and harvesting & threshing etc.

4.5.2 Cost of major farm inputs and operations

42. Cost of major operations and farm inputs in total cost of cultivation of wheat in the Punjab and Sindh during 2018-19 and 2019-20 crops along with percent change therein is presented in Table-14.

- **Punjab**

43. Land rent and Fertilizer including FYM are major components in gross cost of cultivation of wheat in Punjab during 2019-20 crop year, accounting for 31% and 18%. Other inputs constitute as following: Harvesting and threshing (16%), Land preparation (11%) and seed/ sowing operations (9% each), Irrigation (7%), other costs (7%) and Inter-culture and weedicides (2%).

- **Sindh**

44. In Sindh, land rent and fertilizer (including FYM) are again major constituents of total cost of cultivation for 2019-20 crop, These account for 31% and 18% respectively. Other components of cost of cultivation are: Land preparation and harvesting & threshing operations (13%) each, Seed and sowing operations (10%), other costs (7%), Irrigation (7%) and Inter-culture/weedicides (2%).

Table-14: Cost of Major Farm Operations/Inputs of Wheat: 2018-19 and 2019-20 Crops

Operations/inputs	2018-19 crop	2019-20 crop	Share in increased/decrease cost
	---Rs/acre---		Per cent
Punjab			
1. Land preparation	4418 (10)	5137 (11)	7.0
2. Seed and sowing operations	3773 (8)	4178 (9)	1.9
3. Inter-culture/weedicides	700 (2)	900 (2)	18.3
4. Irrigation	2729 (6)	3452 (7)	16.3
5. Fertilizer including FYM	7622 (17)	8732 (18)	5.4
6. Harvesting and threshing etc	7256 (16)	7649 (16)	-3.0
7. Land rent	15000 (34)	15000 (31)	-8.0
8. Others	2935 (7)	3255 (7)	2.0
9. Total cost	**44431(100)**	**48303(100)**	
Sindh			
1. Land preparation	5788 (14)	6320 (13)	-5.3
2. Seed and sowing operations	4372 (10)	4809 (10)	-4.6
3. Inter-culture/weedicides	726 (2)	1088 (2)	30.1
4. Irrigation	2375 (6)	3324 (7)	21.4
5. Fertilizer including FYM	7765 (18)	8836 (18)	-1.3
6. Harvesting and threshing etc	6229 (15)	6370 (13)	-11.3
7. Land rent	12500 (29)	15000 (31)	4.0
8. Others	2859 (7)	3451 (7)	4.7
9. Total cost	**42613(100)**	**49146(100)**	

Source: -Annex-VIII & IX

Notes:

- Rounding of figures may result in slight deviation
- Others include mark-up, management charges, land tax and drainage Cess
- Figures in parenthesis are percent shares in total cost of cultivation

4.6 Comparative Economics of Wheat and Competing Crops

45. 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.

.46. 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.

.47. The economics of wheat and competing crops has been analyzed in terms of output and input prices received and paid by the growers during 2018-19 at farm level.

a) 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: 2018-19 Crops

Province / crops /crop combination	Output-input ratio	Revenue per:		
		Rupee of purchased inputs cost	Crop day	Acre-inch of water used
		.....Rupees.....		
Wheat	1.07	3.9	258	3875
Sunflower (spring)	1.07	3.3	267	2188
Canola	1.21	5.8	222	3078
Cotton + wheat	1.21	3.9	309	3814
Cotton + sunflower	1.21	3.7	313	2984
Basmati + wheat	0.98	3.1	288	1481
IRRI + wheat	0.93	2.5	277	1346
Sugarcane	1.16	4.9	260	2133

Source: Annex-X

49. Wheat crop has shown relatively lower performance during 2018-19 and farmers received a small margin over the cost of wheat production (7 %). In Punjab, Wheat has performed at par with the sunflower in terms of Output input ratio, however, better in terms of other criteria except crop duration, where Sunflower, however, has out-performed wheat. Canola has given better rewards over wheat and sunflower in terms of returns to overall investment returns to purchased inputs.

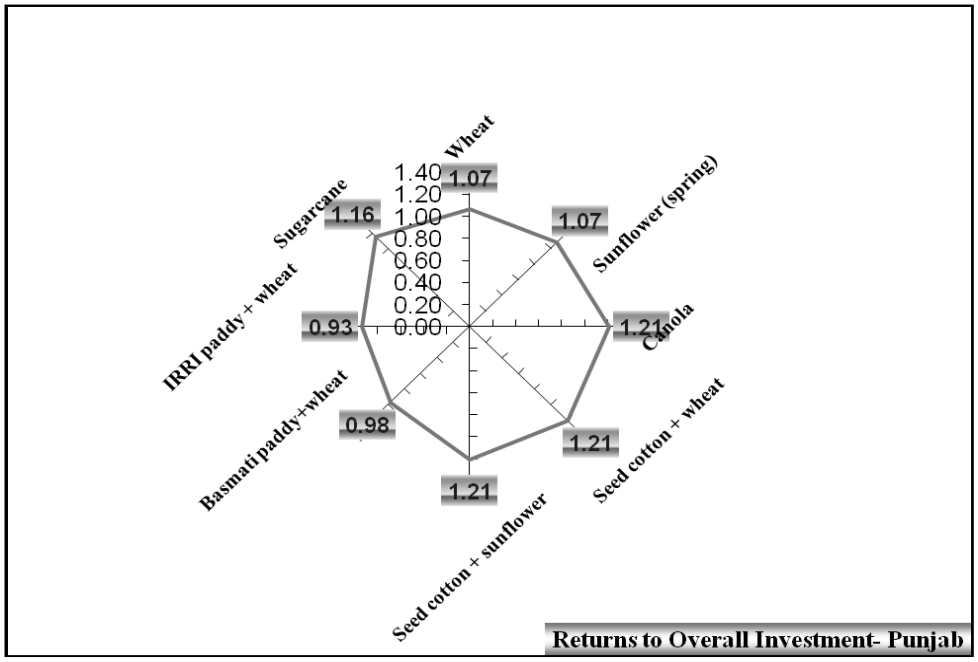

Fig -6 : Returns to Overall Investment in Punjab

50. Canola crop has been out-competed 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.

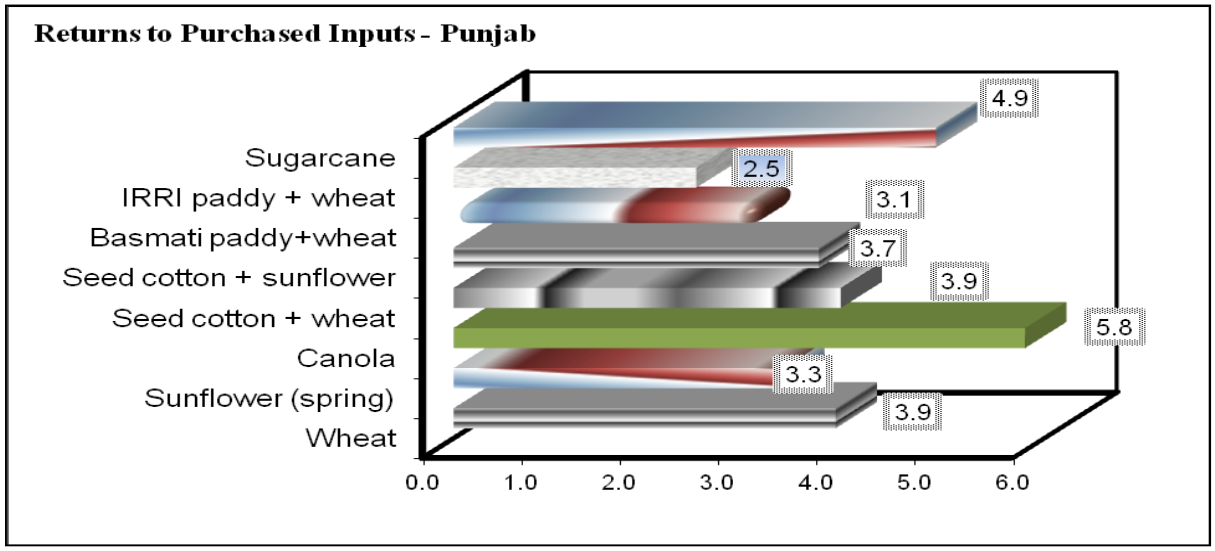

Fig-7 : Returns to Purchased inputs (Punjab)

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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 behind cotton combinations with wheat and sunflower in the returns to crop duration and irrigation water.

.52. The IRRI + wheat combination was out-competed by sugarcane in terms of all the economic indicators except crop duration. In terms of returns to irrigation water, the economic position of cotton combinations remained better amongst all the crop combinations.

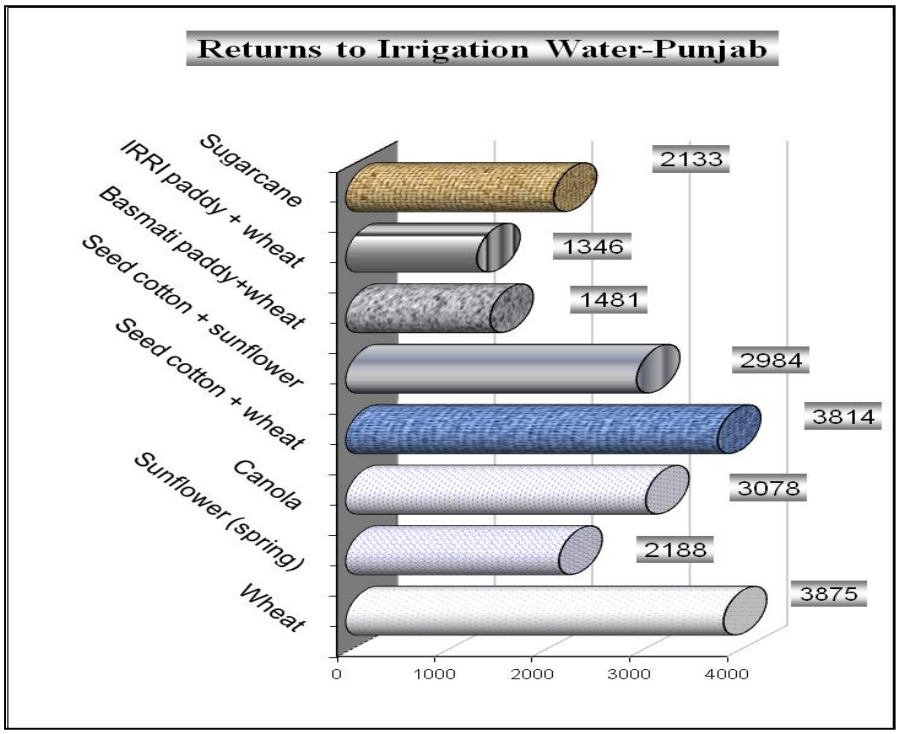


Fig- 8: Returns to Irrigation Water (Punjab)

. 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

b) Sindh

.53. Economics of wheat and competing crops has been analyzed at prices realized by the growers in Sindh for crop season 2018-19 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:

.54. In Sindh, the returns to overall investment in wheat crop remained higher than 'rabi' oilseed crop Sunflower but marginally lower than canola during 2018-19. However, in respect of other economic indicators like purchased inputs 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.

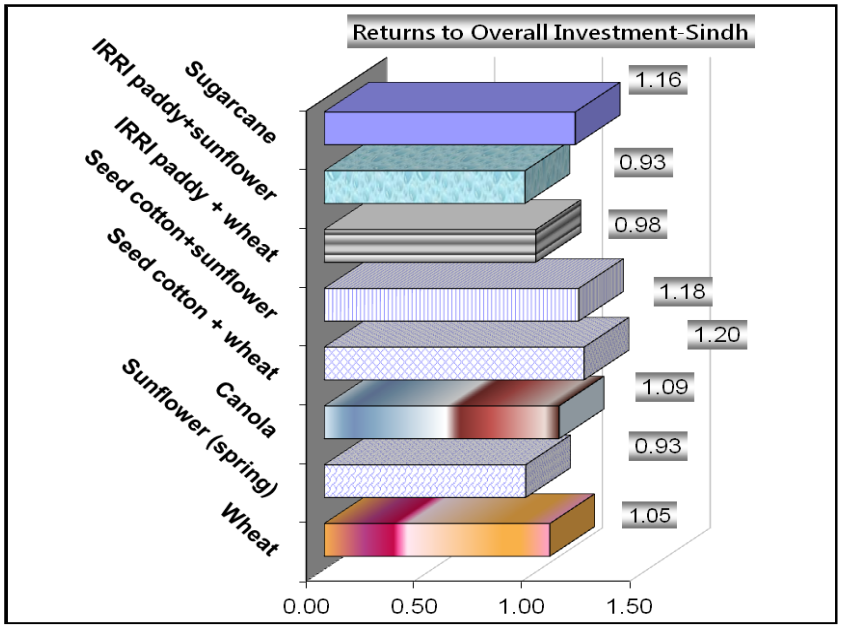
Table-16: Economics of Wheat and Competing Crops at Prices realized by the Growers in Sindh: 2018-19 Crops

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	249	3734
Sunflower (spring)	0.93	3.0	180	1474
Canola	1.09	4.5	171	2363
Cotton + wheat	1.20	3.7	323	4525
Cotton + sunflower	1.18	3.6	294	3084
IRRI + wheat	0.98	2.9	259	1369
IRRI + Sunflower	0.93	2.7	224	1035
Sugarcane	1.16	4.2	256	1761

Source: Annex-

.55. 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.

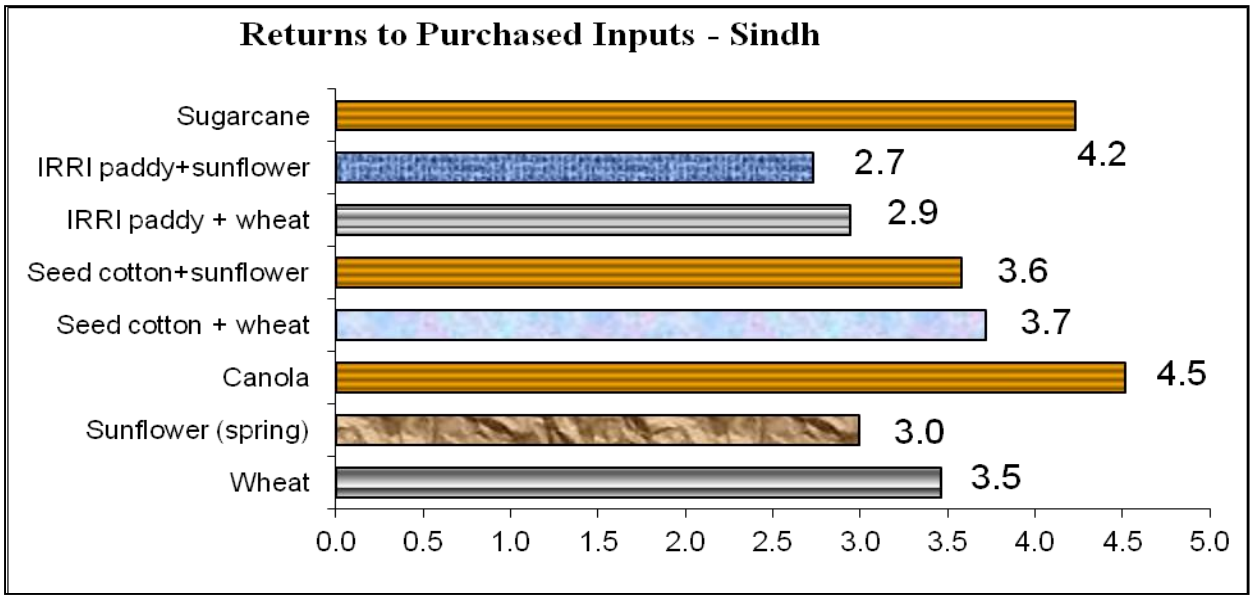
Fig-9: Returns to Overall Investment in Sindh



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 lower than wheat crop combination with cotton in respect of returns to overall investment, 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.

Fig-10 : Returns to Purchased Inputs in Sindh



56. 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.

57. This situation indicates that growers are getting a rewarding price for the crop. Although wheat production has decreased during 2018-19 mainly for climate factor, however, the current situation of stocks presents a comfortable situation. The issue of implementation of support price needs 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 sector.

4.7 Nominal and Real Prices of Wheat

58. 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 2007-08 to 2018-19 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

59. The analysis in terms of nominal and real support prices for the period 2007-08 to 2018-19 is presented in the Table-17.

60. The nominal support price of wheat was Rs 625 per 40 kgs in 2007-08. An increased price of wheat in nominal terms i.e. Rs 950 remained constant consecutively in the three years 2008-09 – 2010-11. In 2011-12, nominal price increased to Rs 1050 per 40 kgs while for following two years it stagnated at Rs 1200 per 40 kgs, which however, increased to Rs 1300 in 2018-19 and its consecutively constant in the following three years 2016-17 and 20148-19. Change in CPI during this period was evidenced high i.e. 13.66 per cent in 2010-11, 11 % in 2011-12 and 7.36 per cent in 2012-13 over the previous year. This 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-12). The real support price of wheat for 2018-19 crop estimated at Rs 541.66 per 40 kgs, is showing a decline by (-13.33) per cent over the base year real price of Rs 625 per 40 kgs.

Table-17: Nominal and Real Support Prices of Wheat: 2007-08 to 2018-19

Year	Consumer Price Index (CPI)	Support Prices	
		Nominal	Real
	2007-08=100	Rs/40 Kgs	
1	2	3	4=(3/2)x100
2007-08	100.00	625	625.00
2008-09	117.03	950	811.76
2009-10	128.85	950	737.29
2010-11	146.45	950	648.68
2011-12	162.57	1050	645.88
2012-13	174.53	1200	687.56
2013-14	189.70	1200	632.58
2014-15	198.69	1300	654.28
2015-16	203.25	1300	639.60
2016-17	212.16	1300	612.75
2017-18	219.01	1300	593.17
2018-19	240.00	1300	541.66
Source: Pakistan Economic Survey: 2017-18			

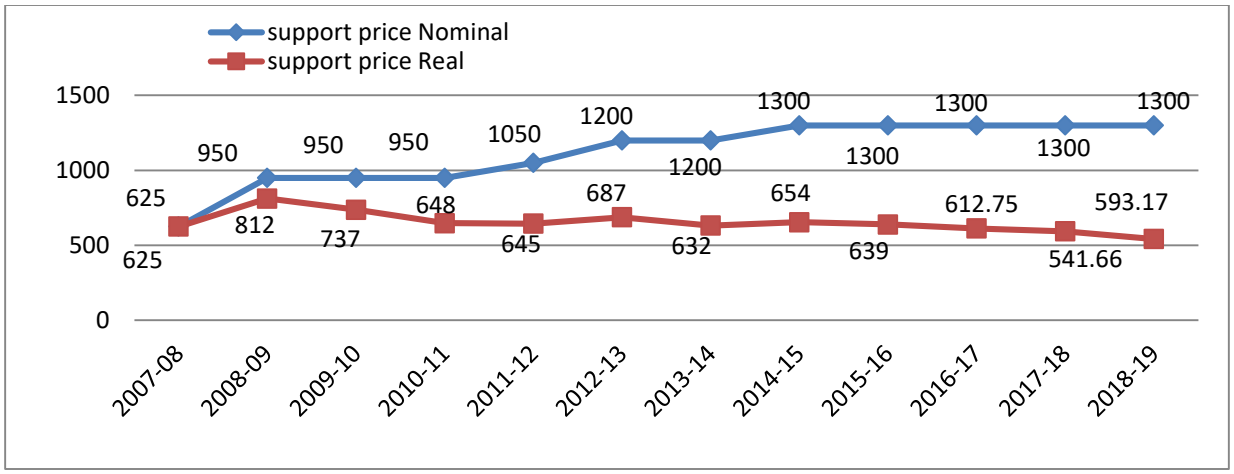


Fig-11: Nominal and real support price of wheat.

61. It is illustrated in Fig-12, that real worth of the wheat crop is on continuous decline since 2008-09. The depth of the issue of this deterioration is observed day by day which is alarming for future food security of the country.

4.7.2 Market Prices of Wheat

62. The analysis in terms of real and nominal average market prices for the period 2007-08 to 2018-19 is set out in the Table-18.

Table-18: Nominal and Real Market Prices of Wheat: 2007-08 to 2018-19

Crop year	Consumer Price Index (CPI)	Market Prices	
		Nominal	Real
	2007-08=100	Rs/ per 40 Kgs	
1	2	3	4=(3/2)x100
2007-08	100.00	671	671.00
2008-09	117.03	924	789.54
2009-10	128.85	894	693.83
2010-11	146.45	919	627.52
2011-12	162.57	984	605.28
2012-13	174.53	1183	677.82
2013-14	189.58	1250	659.35
2014-15	198.69	1181	594.39
2015-16	203.25	1206	593.30
2016-17	212.16	1180	556.118
2017-18	219.01	1190	543.35
2018-19	240.00	1220	508.33

Sources: i) For CPI, Economic Survey of Pakistan: 2017-18. 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) (weightage average).

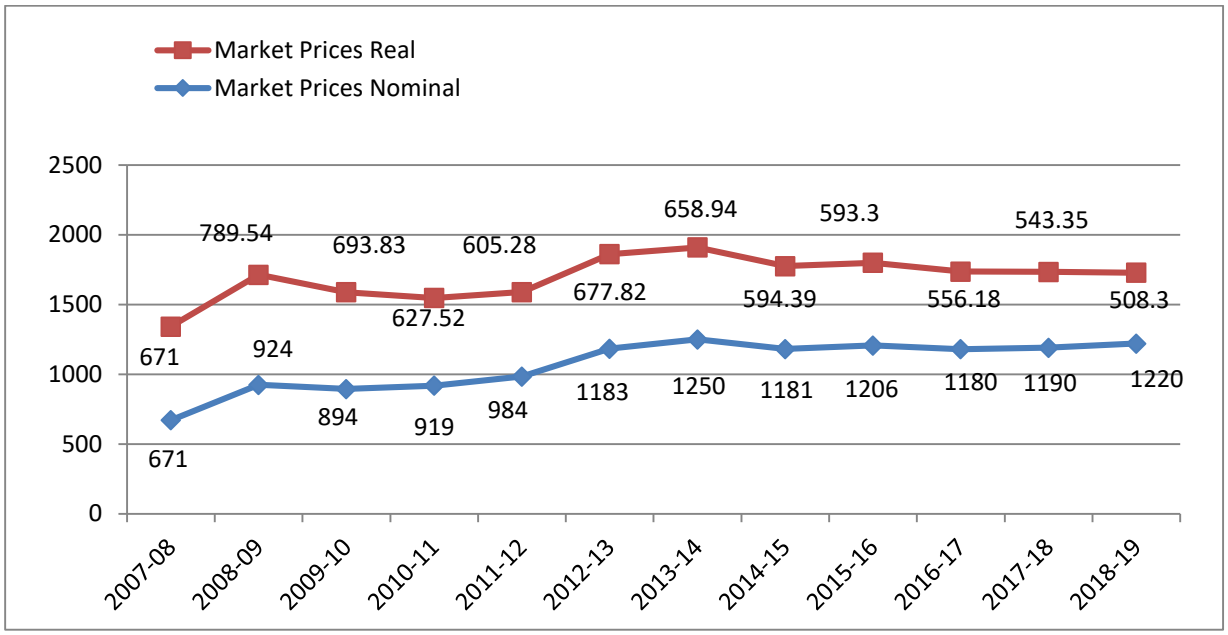


Fig.12: Nominal and real market prices of wheat

63. 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 2007-08. After 2008-09, the market price could not gain an identical value as of support price and remained below at Rs 894 per 40 kgs in 2009-10. However, the nominal price took an upward move with gradual increase during next four years. In 2018-19, the nominal and real value of wheat once again declined. The average nominal market price of wheat has evidenced 82% increase against the base year during the period under review. On the other hand, the real value has receded by (-24 per cent) mainly for the rise in CPI by 240.00% during this period.

64. 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.

65. If the market prices had averaged at Rs 1258 per 40 kgs, the farmers would have retained the real purchasing power equivalent to 2018-19 level.

4.8 Economic Efficiency in Wheat Production

66. 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.

67. 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)

68. 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.

69. Nominal Protection Coefficients (NPCs) for wheat under import scenario are produced in Table-. It is evident from the data in the referred table that NPC values for Punjab province remained less than one in 2013-16 and 2018-19 the period under analysis. It ranged between 0.76 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	
2013-14	0.76	0.71	0.77	0.67
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

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

Year	NPC	EPC	NPC	EPC
	Punjab		Sindh	
2013-14	1.14	1.39	1.15	1.25
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

Table – 21: DRC Coefficients for Wheat in Pakistan

Year	Under Import Scenario		Under Export Scenario	
	Punjab	Sindh	Punjab	Sindh
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

70. Similarly NPC numerics for Sindh province also remained less than one in 2013-16 and 2018-19. It ranged between 0.77 and 1.12. It's also main reason is that international price of wheat dropped during 2016-17 and 2017-18.

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

4.8.2 Effective Protection Coefficient (EPC)

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

73. Table-19 and Table-20 present EPC estimates for wheat. Under 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).

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

4.8.3 Domestic Resource Cost Coefficient (DRC)

75. 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 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 opportunity cost of non-tradable inputs as well as the social value of output. Based on cost of production of average farmer and import prices of wheat, DRC for Punjab and Sindh are estimated and produced in Table-**.** 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 import situation**		**Under export situation**	
[1]	Punjab [2]	Sindh [3]	Punjab [4]	Sindh [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

76. It is noticeable from data in the Table-22 that under import scenario Domestic Resource Cost Coefficients (DRCs) are substantially less than one which indicate 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. There-fore, it would be an economic suggestion to invest in wheat production at home rather to import.

77. 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

78. 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 price is observed continuously declining from US $ 232.2/ton in 2016-17 to 229.7 next year and 217.6/ton in 2018-19. In Brazil, however, the trend is upward.

79. In China, the price in US $ is though sliding downward however, in Pak Rupees equivalent, it is moving upward. India is showing a continuous increase in MSP of wheat, in both currency terms. In USA, the Crop Insurance Pricing has increased to USD 190/ton last year; however, a minor decline at US$ 185/ton in 2019. Depreciation in value of PKR against US$ has pushed the price to 1156/40kgs. 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

Country	2016-17		2017-18		2018-19	
	$/Ton	Rs/40 Kgs	$/Ton	Rs/40 Kgs	$/Ton	Rs/40 Kgs
Australia[4]	232.20	972.4	229.70	983.4	217.6	1358
Brazil	159.26	667.0	160.03	685.2	166.67	1040
China[5]	344.00	1,440.6	329.89	1,412.4	322.80	2014
India[6]	239.13	1,001.4	257.60	1,102.9	258.82	1615
USA[7]	153.54	643.0	190.90	817.3	185.20	1156
Pakistan	310.43	1,300.0	303.64	1,300.0	208.33	1300

Notes:

a) For Australia, AWB Harvest Pool.
b) For Brazil, Reference Price of bread-type wheat was set at BRL 36.17 (USD 10) per 60 kg bag, down nearly 3 per cent from BRL 37.26 (USD 10.34) last year in the South Region.
c) For China, minimum purchasing price (2019) for wheat is 2,240 yuan a tonne.
d) For India, 1,840.000 INR/Quintal.
e) For US, Crop Insurance Pricing for 2019 @ $4.63 Harvest Price.
f) Exchange Rate: $ 1 = PKR 156

1. https://www.reuters.com/article/china-wheat/update-1-china-cuts-2019-minimum-purchase-price-for-wheat-for-second-year-idUSL4N1XR2QD
2. Ministry of Agriculture & Farmers Welfare, Government of India.
3. https://www.ag360insurance.com/crop-insurance-pricing/
4. https://www.awb.com.au/doc/1432147561879/harvest-pool-18_19_aug_sa_vic_wa.pdf

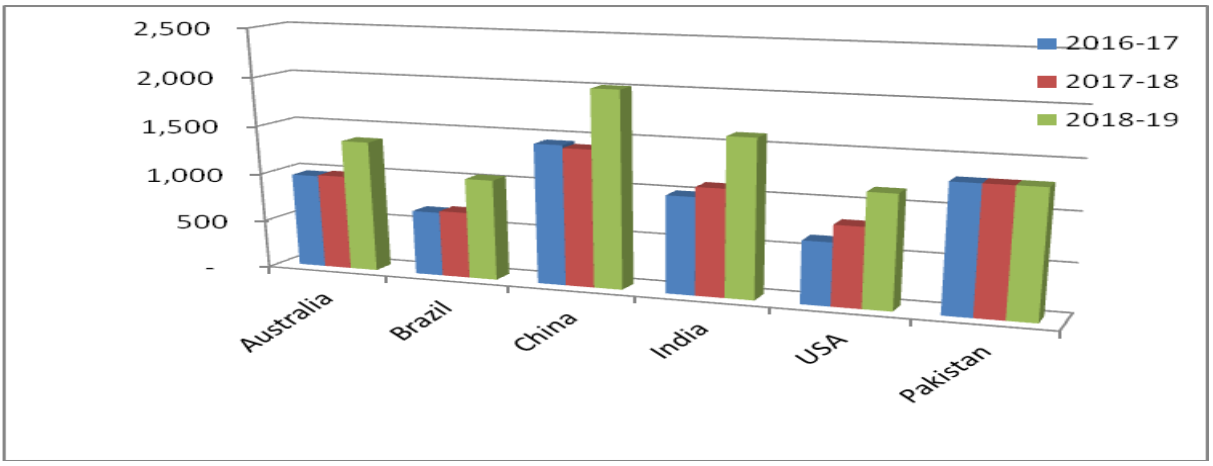


Fig-13: Support Price of Wheat in Selected Countries

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

80. 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

81. 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 1300 per 40 kgs in 2018-19. 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.

82. 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 0.56 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 0.61,071 and 0.8.1 per cent, respectively.

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

Wheat price	Conntribution of wheat and wheat flour in overall CPI inflation	Increase in annual expenses on the basis of average per capita wheat availability @ 100 kgs per year	
		Per person	Per household**
Rs per 40 kg	Per cent	---------- Rupees ----------	
1300*	-	-	-
1325	0.56	62	392
1350	0.61	125	789
1375	0.66	187	1180
1400	0.71	250	1578
1425	0.76	312	1969
1450	0.81	375	2367

Sources: 1. Pakistan Bureau of Statistics (PBS), Islamabad.
2. Annex-XIV.
* Existing price for 2019-20 wheat crop.
** HH size 6.31as on HIES 2015-16
$ As recommended by M/o NFS&R.

Note: Impact of wheat price has been calculated by assuming incremental changes of Rs.25/- per 40 of November, 2019.

83. 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

84. According to the Household Integrated Economic Survey (HIES) 2016-17 by the PBS, the average household in Pakistan consists of 6.31 members. Taking the annual per capita consumption of wheat at 100 kgs and average household size of 6.31 members, the impact of selected increases in the support price of wheat on the average household expenditure has been estimated in Annex-XIV and summarized in Table-24.

85. According to the above analysis, every increase of Rs 25 in the support price of wheat over the existing level of Rs 1300 per 40 kgs in 2018-19 would increase the annual expenditure by Rs 62 per person and Rs 392 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 5.20 per person and Rs 32.81 per household. Likewise, the increase of Rs 100 per 40 kgs over the existing support price would bring additional expenditure of Rs 250 per capita per year and Rs 1578 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

86. Annual meeting of the API Committee on wheat was held on 19th August 2019. The meeting was presided by the Senior Joint Secretary, M/o NFS&R/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.

87. 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.

88. 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

89. 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 2018-19

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

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.

90. 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 2018-19.

91. 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 2.79 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 for the appreciated market prices of wheat, the position gradually improved in the following five years as compared with the previous year and 2.41 units of wheat were required to buy one unit of N fertilizer during 2018-19.

92. The parity ratio for P-wheat prices generally hovered around 5.21 uptil 2008-09. It declined to 3.11 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 2018-19 has relatively improved over the previous year as 2.81 units of wheat were required to buy one unit of P fertilizer, a change of (142 per cent).

7. MAJOR WHEAT VARIETIES AND THEIR YIELD POTENTIAL

93. 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 23 wheat varieties have been evolved since 2010 onwards by the wheat research institutions at country level. The list of these varieties describing year of release and yield potential is given at Annex-XV.

94. 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

95. Wheat, the most popular cereal crop of world covers the acreage that no other cereal crop can ever get. Global wheat during 2018 occupied an area of around 214.742 million hectares with a total production of 734.91 million tonnes. The world top 30 producing countries contribute 92.99 per cent of total area and 91.61 per cent of total production as narrated in the following Table-26.

Table-26: Wheat Area in Major Producing Countries of the World 2018 Crop

S.No.	Country	Area in (000)	per cent share in

		hectares	world area
1	India	29.580	13.77
2	Russian Federation	26.472	12.33
3	China, mainland	24.266	11.30
4	United States of America	16.028	7.46
5	Kazakhstan	11.354	5.29
6	Australia	10.919	5.08
7	Canada	9.881	4.60
8	**Pakistan**	**8.797**	**4.10**
9	Turkey	7.289	3.39
10	Iran (Islamic Republic of)	6.700	3.12
11	Ukraine	6.620	3.08
12	Argentina	5.822	2.71
13	France	5.232	2.44
14	Germany	3.036	1.41
15	Morocco	2.843	1.32
16	Poland	2.417	1.13
17	Romania	2.112	0.98
18	Algeria	2.087	0.97
19	Spain	2.064	0.96
20	Brazil	2.058	0.96
21	Italy	1.822	0.85
22	Ethiopia	1.749	0.81
23	United Kingdom	1.748	0.81
24	Afghanistan	1.635	0.76
25	Egypt	1.315	0.61
26	Uzbekistan	1.311	0.61
27	Bulgaria	1.212	0.56
28	Iraq	1.180	0.55
29	Syrian Arab Republic	1.100	0.51
30	Hungary	1.030	0.48
Total Of 30 Country Area		**192.53**	89.66
Total World Area		**214.742**	100.00

Source: FAO Production Year Book 2018

96. In terms of wheat area India is on the top with 29.58 million hectares followed by Russian Federation with 26.47 million hectares, China, mainland with 24.27 million hectares, USA with 16.03 and Pakistan lies at 8th number in this regard with 4 per cent global share.

97. In terms of wheat production, China, mainland with 126.21 million tonnes is on the top followed by India with 94.48, Russian Federation 59.71 million tonnes and USA with 55.39 million tonnes. However, Pakistan stands at 8th in wheat production of the world. (Table-27).

Table-27: Wheat Production in Major Wheat Producing Countries of the World: 2018 Crop

S.No.	Country	Production in (000) M.T	per cent share in world Production
1	China, mainland	126.2084	17.17
2	India	94.4830	12.86
3	Russian Federation	59.7114	8.12
4	United States of America	55.3954	7.54
5	France	38.9666	5.30
6	Canada	29.2808	3.98
7	Germany	27.7847	3.78
8	**Pakistan**	**25.9790**	**3.53**
9	Australia	25.3030	3.44
10	Ukraine	24.1140	3.28
11	Turkey	19.0000	2.59
12	United Kingdom	16.6210	2.26
13	Argentina	13.9301	1.90
14	Kazakhstan	12.9969	1.77
15	Poland	11.6287	1.58
16	Egypt	9.2798	1.26
17	Iran (Islamic Republic of)	8.6520	1.18
18	Romania	7.5848	1.03
19	Italy	7.1419	0.97
20	Uzbekistan	6.9560	0.95
21	Spain	6.4714	0.88
22	Brazil	6.2619	0.85
23	Czech Republic	5.4423	0.74
24	Afghanistan	5.3703	0.73
25	Bulgaria	5.3471	0.73
26	Hungary	5.2619	0.72
27	Morocco	5.1159	0.70
28	Denmark	4.9400	0.67
29	Ethiopia	4.2316	0.58
30	Iraq	3.8000	0.52
	Total Of 30 Country Production	**673.26**	91.61
	Total World Production	**734.91**	100.00
	Source: FAO Production Year Book 2018		

98. In terms of yield per hectare, New Zealand lies at the top with 8960 kgs per hectare followed by Netherlands 8821 and Ireland with 8738 kgs per hectare. It is an alarming situation that Pakistan ranks at 59th in terms of yield at 2850 kgs per hectare while India lies at 45th

position with 3370 kgs per hectare. However, the world average yield of wheat is 3422 kgs per hectare (Annex- XIV)

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

99. During 2010-11 to 2018-19, wheat production has ranged between 23.34 to 26.61 million tones. 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 when the price surpassed the support price, The prices ranged between Rs 905 to Rs 1250 per 40 kgs during the period under review.

Table-28: Production, Procurement, Market and Support Prices of Wheat: 2010-11 to 2018-19

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----	
2010-11	25.21	6.24	24.75	950	905
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	24.35	4.03	16.55	1300	1221

- 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

100. The Federal Government fixed the wheat procurement target at 6250 thousand tonnes for 2018-19 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: 2018-19 Wheat Crop

Province/agency	Target	Achievement	Achievement as per cent of target
	----Million tones -----		Per cent
Pakistan	**6.250**	**4.032**	**64.51**
- Provincial Food Departments	5.150	3.353	65.10
- PASSCO	1.100	0679	61.72
Punjab	**4.881**	**3.801**	**77.87**
- Food Department	4.000	3.316	82.90
- PASSCO	0.881	0.485	55.05
Sindh	**0.918**	**0.144**	**15.68**
- Food Department	0.750	0	0.00
- PASSCO	0.168	0.144	85.71
K.P.K	**0.300**	**0.037**	**0.00**
Food Department	0.3	0.037	12.33
PASSCO	0.000	0.000	0.00
Balochistan	**0.100**	**0.000**	-
Food Department	0.100	0.000	-
PASSCO	0.051	0.050	**98.04**

101. The Federal Government fixed the wheat procurement target at 6250 thousand tonnes for 2018-19 crop to be implemented by the Provincial Food Departments and PASSCO.

102. The Table-29 reveals that procurement agencies have achieved 64.51 per cent of the target fixed by the Government, Provincial Food Department, collectively achieved 65.10 per cent by the Food Departments and 61.72 per cent by PASSCO.

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Annex-I

AREA,YIELD AND PRODUCTION OF WHEAT : 2008-09 TO 2018-19

Year	Punjab	Sindh	KPK	Balochistan	Pakistan
AREA		**---------- Thousand hectares ----------**			
2008-09	6836.2	1031.4	769.5	408.9	9046.0
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
YIELD		**---------- kgs per hectare ----------**			
2008-09	2694	3432	1565	2123	2657
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
PRODUCTION		**---------- Thousand tonnes ----------**			
2008-09	18420.0	3540.2	1204.5	868.2	24032.9
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

Sources:

1. **For 2008-09 to 2016-17: Wheat Policy Analysis For 2017-18 Crop**
2. **For 2017-18: Final estimate provided by concerned Provincial Agriculture Departments.**
2. **For 2017-18: Final estimate provided by concerned Provincial Agriculture Departments.**

Annex-I A

AREA,YIELD AND PRODUCTION OF WHEAT : 2008-09 TO 2018-19

Year	Punjab	Sindh	KPK	Balochistan	Pakistan
AREA		**---------- Thousand acres ----------**			
2008-09	16892.9	2548.7	1901.5	1010.4	22353.6
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
YIELD		**---------- kgs per acre ----------**			
2008-09	1090	1389	633	859	1075
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
PRODUCTION		**---------- Thousand tonnes ----------**			
2008-09	18420.0	3540.2	1204.5	868.2	24032.9
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

Source:

1. **For 2008-09 to 2016-17: Wheat Policy Analysis For 2017-18 Crop**
2. **For 2017-18: Final estimate provided by concerned Provincial Agriculture Departments.**
2. **For 2017-18: Final estimate provided by concerned Provincial Agriculture Departments.**

ANNEX-II

AREA, YIELD AND PRODUCTION OF WHEAT BY PROVINCE AND BY IRRIGATION: 2016-17 TO 2018-19

Country/ Province	Area				Yield per hectare				Production			
	2016-17	2017-18	2018-19	Change over last year	2016-17	2017-18	2018-19	Change over last year	2016-17	2017-18	2018-19	Change over last year
	000 ha				Kgs				000 tonnes			
IRRIGATED												
PAKISTAN	7946.1	7802.3	7712.5	-1.15	3184	3043	2971	-2.35	25298.4	23742.1	22916.2	-3.48
PUNJAB	6070.2	6005.8	5950.8	-0.92	3254	3080	2952	-4.15	19752.90	18498.4	17567.9	-5.03
SINDH	1130.1	1050.8	1022.8	-2.66	3391	3392	3634	7.15	3832.40	3564.1	3717.1	4.29
KPK	362.0	360.4	356.6	-1.05	2191	2094	2163	3.32	793.00	754.6	771.4	2.23
BALOCHISTAN	383.8	385.3	382.3	-0.78	2397	2401	2249	-6.32	920.10	925.0	859.8	-7.05
UNIRRIGATED												
PAKISTAN	1026.30	995.0	965.3	-2.98	1340	1341	1484	10.70	1375.3	1334.1	1432.8	7.40
PUNJAB	590.00	554.0	545.1	-1.61	1209	1228	1485	20.92	713.50	680.2	809.3	18.98
SINDH	39.40	38.8	29.9	-22.94	1980	1943	2067	6.36	78.00	75.4	61.8	-18.04
KPK	386.60	393.0	383.0	-2.54	1480	1446	1452	0.46	572.10	568.1	556.2	-2.09
BALOCHISTAN	10.30	9.2	7.3	-20.65	1136	1130	753	-33.35	11.70	10.4	5.5	-47.12
TOTAL												
PAKISTAN	8972.4	8797.3	8677.8	-1.36	2973	2850	2806	-1.56	26673.7	25076.2	24349.0	-2.90
PUNJAB	6660.2	6559.8	6495.9	-0.97	3073	2924	2829	-3.24	20466.4	19178.6	18377.2	-4.18
SINDH	1169.5	1089.6	1052.7	-3.39	3344	3340	3590	7.47	3910.4	3639.5	3778.9	3.83
KPK	748.6	753.4	739.6	-1.83	1824	1756	1795	2.24	1365.1	1322.7	1327.6	0.37
BALOCHISTAN	394.1	394.5	389.6	-1.24	2364	2371	2221	-6.33	931.8	935.4	865.3	-7.49

Sources:
1. **For 2008-09 to 2016-17: Wheat Policy Analysis For 2017-18 Crop**
2. **For 2017-18: Final estimate provided by concerned Provincial Agriculture Departments.**
2. **For 2017-18: Final estimate provided by concerned Provincial Agriculture Departments.**

DISTRICT- WISE AREA, YIELD AND PRODUCTION OF WHEAT
AVERAGE OF 2016-17 TO 2018-19

ANNEX-III

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	367.24	1169.84	4.61	3185.49	1	Swat	45.87	91.08	0.36	1985.62
2	R.Y.Khan	291.61	932.24	3.68	3196.93	2	D.I.Khan	44.42	87.25	0.34	1964.26
3	Bahawalpur	286.83	922.28	3.64	3215.37	3	Mardan	44.08	82.10	0.32	1862.65
4	Muzaffargarh	291.15	910.74	3.59	3128.13	4	Mansehra	32.63	77.17	0.30	2365.31
5	Jhang	280.49	885.69	3.49	3157.66	5	Swabi	41.02	76.34	0.30	1860.72
6	Faisalabad	274.71	884.52	3.49	3219.83	6	Charsadda	28.79	70.50	0.28	2448.49
7	Vehari	239.35	769.16	3.03	3213.54	7	Bannu	29.31	64.31	0.25	2193.85
8	Lodhran	200.49	719.46	2.84	3588.52	8	Dir Lower	32.61	64.25	0.25	1970.02
9	Khanewal	195.63	675.68	2.66	3453.82	9	Shanlapar	28.61	61.51	0.24	2150.28
10	Sheikhupura	212.30	665.83	2.62	3136.21	10	Bunir	41.53	59.30	0.23	1427.75
11	Okara	195.36	649.72	2.56	3325.80	11	Peshawar	27.91	56.18	0.22	2012.39
12	Gujranwala	221.70	649.18	2.56	2928.26	12	Nowshera	22.30	50.61	0.20	2269.26
13	Layyah	223.02	604.03	2.38	2708.42	13	Dir Uper	23.65	47.15	0.19	1994.21
14	Multan	187.88	603.26	2.38	3210.85	14	Haripur	28.60	46.63	0.18	1630.12
15	Rajanpur	181.03	565.42	2.23	3123.35	15	Abbottabad	22.37	40.51	0.16	1810.78
16	T.T.Singh	161.81	556.66	2.19	3440.13	16	Hangu	20.66	39.75	0.16	1924.19
17	D.G.Khan	183.69	554.52	2.19	3018.81	17	Tank	21.00	36.06	0.14	1717.45
18	Sargodha	199.67	545.17	2.15	2730.34	18	Chitral	17.06	34.16	0.13	2002.13
19	Hafizabad	159.30	534.92	2.11	3357.97	19	Kohat	17.74	28.83	0.11	1624.92
20	Sialkot	198.17	520.66	2.05	2627.27	20	Kurram AG.	16.30	25.91	0.10	1589.77
21	Kasur	161.82	502.75	1.98	3106.77	21	Malakand	17.55	25.10	0.10	1430.17
22	Sahiwal	145.80	484.31	1.91	3321.80	22	Lakki Marwat	17.94	24.02	0.09	1338.93
23	Pakpattan	138.49	468.66	1.85	3384.04	23	Karak	19.77	20.74	0.08	1048.85
24	M.B.Din	148.80	428.72	1.69	2881.17	24	Khyber AG.	18.50	19.84	0.08	1072.37
25	Bhakkar	159.51	409.66	1.61	2568.19	25	Bajour AG.	23.49	17.92	0.07	763.12
26	Nankana Sahib	120.05	398.16	1.57	3316.51	26	Battagram	8.49	16.92	0.07	1993.80
27	Mianwali	158.56	384.82	1.52	2427.05	27	Orakzai AG	9.91	15.26	0.06	1539.86
28	Narowal	143.44	351.33	1.39	2449.37	28	Kohistan	9.98	13.50	0.05	1352.59
29	Chiniot	109.74	328.04	1.29	2989.17	29	N.Waziristan	6.33	9.57	0.04	1511.96
30	Gujrat	151.35	276.60	1.09	1827.57	30	S.Waziristan	7.51	8.75	0.03	1164.59
31	Attock	153.74	238.36	0.94	1550.46	31	Mohmand AG.	5.05	6.94	0.03	1373.17
32	Khushab	93.47	183.83	0.72	1966.79	32	F.R.Peshawar	4.13	5.81	0.02	1407.82
33	Lahore	53.98	173.26	0.68	3209.39	33	F.R.D.I.Khan	5.64	5.81	0.02	1028.88
34	Rawalpindi	101.15	145.64	0.57	1439.93	34	F.R.Bannu	4.20	5.80	0.02	1380.63
35	Chakwal	116.31	144.21	0.57	1239.86	35	F.R.Kohat	2.23	2.89	0.01	1296.38
36	Jhelum	53.46	89.00	0.35	1664.80						
37	Islamabad	10.88	14.37	0.06	1320.77						
	Sub Total	**6571.97**	**19340.69**	**76.25**	**2942.90**		**Sub Total**	**747.20**	**1338.46**	**5.28**	**1791.31**
	SINDH						**BOLUCHISTAN**				
1	N.Feroze	105.98	412.45	1.63	3891.87	1	Nasirabad	79.54	214.45	0.85	2696.30
2	Khairpur	103.52	392.73	1.55	3793.59	2	Jaffarabad	72.11	196.86	0.78	2729.99
3	Ghotki	108.64	387.65	1.53	3568.20	3	Jhal Magsi	51.74	123.45	0.49	2385.88
4	Sanghar	102.21	345.64	1.36	3381.61	4	Khuzdar	45.78	93.50	0.37	2042.33
5	Sh. Benazirabad	86.64	344.71	1.36	3978.59	5	Dera Bughti	17.79	35.18	0.14	1977.64
6	Dadu	75.30	247.65	0.98	3288.67	6	Awaran	14.29	26.87	0.11	1880.18
7	Sukkur	50.35	174.89	0.69	3473.76	7	Lasbela	11.52	23.39	0.09	2029.99
8	Larkana	51.25	168.11	0.66	3280.27	8	Sibi	12.38	21.62	0.09	1746.37
9	Shadadkot	54.02	163.53	0.64	3027.43	9	Loralai	8.78	20.26	0.08	2308.48
10	Matiari	39.59	157.98	0.62	3990.49	10	Barkhan	9.89	19.14	0.08	1935.52
11	Mirpurkhas	49.10	157.80	0.62	3214.03	11	Kachhi	8.07	18.46	0.07	2287.47
12	Jamshoro	35.09	110.18	0.43	3139.45	12	Killa Saifullah	9.19	18.00	0.07	1959.00
13	Tando Allahyar	30.06	107.65	0.42	3580.61	13	Kharan	6.62	12.47	0.05	1883.98
14	Shikarpur	37.71	107.49	0.42	2850.80	14	Noushki	6.22	12.27	0.05	1972.09
15	Kashmore	35.37	101.19	0.40	2861.11	15	Kalat	4.87	10.22	0.04	2100.12
16	Umerkot	29.59	84.62	0.33	2859.63	16	Chaghi	4.31	8.22	0.03	1908.92
17	Badin	29.05	79.39	0.31	2733.47	17	Mastung	3.75	7.57	0.03	2019.74
18	Jacobabad	31.43	77.80	0.31	2475.50	18	Panjgoor	3.48	6.99	0.03	2008.52
19	Hyderabad	14.62	53.25	0.21	3642.07	19	Washuk	3.44	6.30	0.02	1832.61
20	Thatta	17.83	51.28	0.20	2875.25	20	Pishin	3.15	6.10	0.02	1937.12
21	Tando Muhammad	13.92	42.74	0.17	3071.65	21	Quetta	2.54	5.27	0.02	2073.23
22	Tharparkar	1.60	4.59	0.02	2874.66	22	Turbat	2.59	5.16	0.02	1990.35
23	Karachi	1.08	2.97	0.01	2738.85	23	Zhob	3.04	4.91	0.02	1617.19
						24	Kohlu	2.16	3.76	0.01	1737.55
						25	Harnai	1.76	3.72	0.01	2110.00
						26	K.Abdullah	1.63	3.09	0.01	1893.48
						27	Musa Khel	1.26	2.15	0.01	1709.63
						28	Sherani	0.50	0.94	0.00	1882.67
						29	Ziarat	0.30	0.53	0.00	1741.51
						30	Gwadar	0.00	0.00	0.00	#DIV/0!
	Sub Total	**1103.94**	**3776.29**	**14.89**	**3420.73**		**Sub Total**	**392.68**	**910.83**	**3.59**	**2319.50**
							Pak Total	**8815.80**	**25366.27**	**100.00**	**2877.37**

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:2016-17 to 2018-19 (MAY-APRIL)

S.No	Description	Production year	2015-16	2016-17	2017-18
		Consumption year	2016-17	2017-18	2018-19
1	Total Population (a)		202.80	215.08	219.37
			----------000 tonnes----------		
2	Opening stocks as on 1st May		4117	4531	5942
3	Production of Pakistan		25647	26674	25510
4	Production of AJ&K and GB (a)		256	267	255
5	Imports		0	0	0
6	Exports (wheat and wheat preparation)		4	1120	644
7	Closing stocks as on 30th April		4531	3115	3779
8	Total availability		25485	27237	27284
9	Deduction for seed,feed and wastage @ 10 per cent of production		2590	2694	2577
10	Available for human consumption (item 8 minus item 9)		22895	24543	24708
			----------Kgs/ annum----------		
11	Per capita availability (item 10 divided by item 1)		113	114	113
12	Average per capita availability during 2016-17 to 2018-19			113	

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 between 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 2019-20

Year (July - June)	Month	HRW No-2	SRW No-2	Difference between HRW/SRW	
		--------US$ per tonne---------		US$/tonne	%age
2008-09		270	201	69	34.33
2009-10		209	185	24	12.97
2010-11		316	289	27	9.34
2011-12		301	259	42	16.22
2012-13		347	310	37	11.94
2013-14		318	265	53	20.00
2014-15		266	221	45	20.36
2015-16		211	194	17	8.76
2016-17		197	170	27	15.88
2017-18		230	188	42	22.34
2018-19		257	212	45	21.23
2019-20		211	215	-4	-1.63
	July	218	219	-1	-0.46
	August	204	210	-6	-2.86

Source: International Grains Council, London.

ANNEX-VI

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

S.No		Item	2019-20 Jul-Aug		2018-19		2016-17 to 2018-19	
			HRW	SRW	HRW	SRW	HRW	SRW
			----------US $ per tonne----------					
1	Fob(Gulf) price assuming Fob (Karachi) price		211.00	215.00	257.00	212.00	228.00	190.00
2	Exchange rate		**156.63**	**156.63**	**156.63**	**156.63**	**156.63**	**156.63**
3	Fob(Gulf) price assuming Fob (Karachi) price in Pak Rupees		33049	33675	40254	33206	35712	29760
4		Incidental charges: (items i to xi)	6668	6709	7137	6678	6841	6454
	i)	Expenses from procurement centre to Multan	700	700	700	700	700	700
	ii)	Transport cost from Multan to Karachi including loading and unloading charges	1800	1800	1800	1800	1800	1800
	iii)	Cleaning/grading	750	750	750	750	750	750
	iv)	Bagging, spillage, loading, unloading & testing	850	850	850	850	850	850
	v)	Wharfage, stevedoring, weightment and port charges	70	70	70	70	70	70
	vi)	Pre shipment inspection charges	100	100	100	100	100	100
	vii)	Export development surcharges @ 0.25% and Withholding tax@ Rs 1.25 of Fob price	496	505	604	498	536	446
	viii	Insurance charges at port 1 % for one month	28	28	34	28	30	25
	ix)	Bank commission & charges 0.25 %	83	84	101	83	89	74
	x)	KIBOR @ 14.00 % for 3 months for 30 days	1542	1572	1879	1550	1667	1389
	xi)	Miscellaneous charges (Ghati, Wastage, Godown rent)	250	250	250	250	250	250
5	Export parity price of wheat at procurement centre level(item 1- items 2)		26381	26967	33117	26527	28870	23305
			----------Rs per 40kgs----------					
6	Export parity price at procurement center level		1055	1079	1325	1061	1155	932

Sources:
i) For fob (Gulf) prices: Annex - V.
ii) Incidental charges: Garib and Sons (Pvt)Ltd
iii) For expenses from procurement centre and transport charges: PASSCO, Lahore.

ANNEX-VII

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

S. No	Item	2019-20 Jul-Aug		2018-19		2016-17 to 2018-19	
		HRW	SRW	HRW	SRW	HRW	SRW
		----------US $ per tonne----------					
1	Average Fob(Gulf) price	211.00	215.00	257.00	212.00	228.00	190.00
2	Freight charges from Gulf port to Karachi	52.50	52.50	52.50	52.50	52.50	52.50
3	Average c&f (Karachi) price in US $	263.50	267.50	309.50	264.50	280.50	242.50
		----------Rs per tonne----------					
4	Exchange rate	**156.63**	**156.63**	**156.63**	**156.63**	**156.63**	**156.63**
5	Average c&f (Karachi) price in Pak Rupees	41272	41899	48477	41429	43935	37983
6	Marine insurance charges @0.23% of c & F cost	95	96	111	95	101	87
7	Lc opening charges @0.4% of c&f cost.	165	168	194	166	176	152
8	Stevedoring, clearing, handling, wharfage, weightment, inland insurance, survey & pre-shipment charges and provision for unforeseen losses	952	954	970	953	959	944
9	TCP commission @ 2 % of c&f cost as per ECC	825	838	970	829	879	760
10	KIBOR @ 14.00 % for 3 months for 30 days	1926	1955	2262	1933	2050	1773
11	**Landed cost (item 3 to 8) at Karachi**	45236	45909	52984	45404	48099	41698
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	**47336**	**48009**	**55084**	**47504**	**50199**	**43798**
15	Import parity prices of wheat	----------Rs per 40 kgs----------					
	i) If consumed at Multan	**1893**	**1920**	**2203**	**1900**	**2008**	**1752**
	ii) If consumed at Karachi	**1809**	**1836**	**2119**	**1816**	**1924**	**1668**

Sources:

i) For fob (Gulf) prices: Annex - V.

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-VIII

AVERAGE FARMER COST OF PRODUCTION ESTIMATES OF WHEAT IN PUNJAB 2018-19 AND 2019-20 CROPS:

S. No.	Operations / Inputs	Average No. of oprs/units/ acre	2018-19 crop		2019-20 crop		Change in 2019-20 over 2018-19
			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	1.250	1200.0	1500.0	1400.0	1750.0	250.0
	1.2 Ploughing	2.696	600.0	1617.6	700.0	1887.2	269.6
	1.4 Planking	2.000	300.0	600.0	350.0	700.0	100.0
	1.5 Levelling (hrs)	1.000	700.0	700.0	800.0	800.0	100.0
2	**Seed and sowing operations:**						
	2.1 Seed used (kgs)	50.000	40.0	2000.0	42.0	2100.0	100.0
	2.2 Labour for seed broadcasting (m.hrs)	1.455	50.0	72.8	62.5	90.9	18.2
	2.3 Ploughing in case of broadcasting	2.000	600.0	1200.0	700.0	1400.0	200.0
	2.4 Planking in case of broadcasting	1.000	300.0	300.0	350.0	350.0	50.0
3	**Bund making:**						
	3.1 Manual (m.hrs)	1.000	50.0	50.0	62.5	62.5	12.5
	3.2 tractor (hrs)	0.250	600.0	150.0	700.0	175.0	25.0
	4. Plant protection						
4	Weedicides	1.000	700.0	700.0	900.0	900.0	200.0
5	**Irrigation: * (Nos)**						
	5.1 Canal		-	50.0	-	53.3	3.3
	5.2 Private tubewell (Rs/ Irrigation)	3.696	550.0	2032.8	700.0	2587.2	554.4
	5.3 Mixed	0.230	550.0	126.5	700.0	161.0	34.5
6	Labour for irrigation and water course Cleaning (M.days)	1.300	400.0	520.0	500.0	650.0	130.0
7	**Farm Yard Manure (No. of Trolleys)**	0.250	2500.0	625.0	2500.0	625.0	0.0
8	**Fertilizers: (bags)**						
	8.1 DAP	1.000	3150.0	3150.0	3600.0	3600.0	450.0
	8.2 Urea	2.000	1600.0	3200.0	1850.0	3700.0	500.0
	8.3 NP	0.079	2600.0	205.4	2600.0	205.4	0.0
	8.4 CAN	0.240	870.0	208.8	1400.0	336.0	127.2
	8.5 Transport and application	3.319	70.0	232.3	80.0	265.5	33.2
10	Mark up on investment on item 1to 8 excluding item 5(1) @14.5 % per annum for 6 months			1391.4		1564.2	172.8
11	Harvesting charges (40 kgs/acre)	3.036	1200.0	3643.2	1239.0	3761.6	118.4
12	12.1 Threshing (Kgs/40 kgs)	2.407	1200.0	2888.4	1239.0	2982.3	93.9
	12.2 M.days	1.810	400.0	724.0	500.0	905.0	181.0
13	Land rent for 6 months	0.500	30,000.0	15,000.0	30,000.0	15,000.0	0.0
14	Average weighted land tax @ Rs 200/acre/annu	0.500	132.0	66.0	132.0	66.0	0.0
15	Management charges for 6 months	-		1477.3		1625.0	147.7
16	Total cost per acre	-		44431.4		48303.2	3871.7
17	Value of wheat bhoosa	-		7040.0		9500.0	2460.0
18	Net cultivation cost (item 15-16)	-		37391.4		38803.2	1411.7
19	Yield per acre (kgs) #	-		1200.0		1183.4	-16.6
20	20.1. Cost of production at farm level:(Rs/40 kgs)			1246.4		1311.6	65.2
	20.2. Cost of production Excluding land rent			746.4		804.6	58.2
21	Marketing cost (Rs/40 kgs)	-		38.0		38.0	0.0
22	Cost of production at market/procurement centre (Rs/40 kgs)						
	22.1 Including land rent	-		1284.4		**1349.6**	65.2
	22.2 Excluding land rent	-		784.4		842.6	58.2

ANNEX-IX

AVERAGE FARMER COST OF PRODUCTION ESTIMATES OF WHEAT IN SINDH: 2018-19 AND 2019-20

S. No.	Operations / Inputs	Average No. of oprs/units/ acre	2018-19 crop		2019-20 crop		Change in 2019-20 over 2018-19
			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	1450.0	1450.0	1500.0	1500.0	50.0
	1.2 Ploughing	3.000	900.0	2700.0	1000.0	3000.0	300.0
	1.3 Ploughing & planking	0.070	900.0	63.0	1000.0	70.0	7.0
	1.4 Planking	1.000	450.0	450.0	500.0	500.0	50.0
	1.4 Tractor levelling (hour)	1.250	900.0	1125.0	1000.0	1250.0	125.0
2	**Seed and sowing operations:**						
	2.1 Seed used (kgs)	55.403	50.0	2770.2	55.0	3047.2	277.0
	2.2 Tractor drilling	0.037	900.0	33.3		0.0	-33.3
	2.3 Labour for seed broadcasting (m.hour)	1.127	50.0	56.4	62.5	70.4	14.1
	2.4 Ploughing in case of broadcasting	1.000	900.0	900.0	1000.0	1000.0	100.0
	2.5 Planking in case of broadcasting	1.000	450.0	450.0	500.0	500.0	50.0
3	**Bund making:**						
	3.1 Manual (m.hour)	1.611	50.0	80.6	62.5	100.7	20.1
	3.2 tractor (hour)	0.091	900.0	81.9	1000.0	91.0	9.1
4	**Weedicides cost including appliaction cost**	0.907	800.0	725.6	1200.0	1088.4	362.8
5	**Irrigation: * (Nos)**						
	5.1 Canal	1.763		53.3		53.3	
	5.2 Private tubewell (RS/irrigation)	2.000	550.0	1100.0	800.0	1600.0	500.0
	5.3 Mixed	2.000	275.0	550.0	400.0	800.0	250.0
	5.4 Lift Pump	0.551	275.0	151.5	400.0	220.4	68.9
6	Labour for irrigation and water course cleaning (M. day)	1.300	400.0	520.0	500.0	650.0	130.0
7	**Farm Yard Manure (No. of Trolleys)**	0.250	2800.0	700.0	2800.0	700.0	0.0
8	**Fertilizer (bags)**						
	8.1 DAP	1.000	3150.0	3150.0	3600.0	3600.0	450.0
	8.2 Urea	2.000	1600.0	3200.0	1850.0	3700.0	500.0
	8.3 NP	0.186	2550.0	474.3	2600.0	483.6	9.3
	8.4 CAN	0.020	1600.0	32.0	1600.0	32.0	0.0
	8.5 Transport and application	3.206	65.0	208.4	100.0	320.6	112.2
9	**Production cost per acre (Rs.)**			20972.1		24324.3	3352.2
10	Mark up on investment on item 1 to 8 excluding item 5 (1) @14.0 % per annum for 6 months			1258.3		1702.7	444.4
11	Harvesting charges (40 kgs/acre)	2.250	1200.0	2700.0	1200.0	2700.0	0.0
12	12.1 Threshing @ 2.469 kgs/40 kgs	2.469	1200.0	2962.8	1200.0	2962.8	0.0
	12.2 M.days	1.415	400.0	566.0	500.0	707.5	141.5
13	Land rent for 6 months	0.500	25000.0	12500.0	30000.0	15000.0	2500.0
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		-	1477.0		1624.7	147.7
17	**Total cost per acre**	-	-	42613.5		49146.0	6532.5
18	Value of wheat bhoosa (Rs per acre)	-		5000.0	200.0	9000.0	4000.0
19	Net cultivation cost (item 15-16)	-	-	37613.5		40146.0	2532.5
20	**Yield per acre (kgs) #**	-	-	1225.0		1262.4	37.4
21	Cost of production at farm level: (Rs/40 kgs)			1228.2		1272.0	43.8
22	Marketing cost (Rs/40 kgs)	-	-	42.0		42.0	0.0
23	Cost of production at market/procurement centre (Rs/40 kgs)						
	23.1 Including land rent	-	-	1270.2		**1314.0**	43.8
	23.2 Excluding land rent	-	-	862.0		838.8	-23.3

ANNEX-X

ECONOMICS OF WHEAT AND COMPETING CROPS AT PRICES REALIZED BY THE GROWERS: 2018-19 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	43563	11976	46500	34524	2937	1.07	3.9	258	3875
2	Seed Cotton	240	22	63865	21009	83192	62183	19327	1.30	4.0	347	3781
3	Basmati paddy	180	58	62597	30560	64779	34220	2183	1.03	2.1	360	1117
4	IRRI paddy	180	62	63151	28412	53075	24663	-10076	0.84	1.9	295	856
5	Sunflower (spring)	180	22	44777	14370	48126	33756	3348	1.07	3.3	267	2188
6	Canola	180	13	33042	6891	40008	33117	6966	1.21	5.8	222	3078
7	Seed cotton + wheat	420	34	107428	32985	129692	96707	22264	1.21	3.9	309	3814
8	Seed cotton + sunflower	420	44	108643	35379	131318	95939	22675	1.21	3.7	313	2984
9	Basmati paddy+wheat	360	70	106160	33730	103656	69926	-2504	0.98	3.1	288	1481
10	Basmati paddy+sunflower	360	80	107374	44930	112905	67976	5531	1.05	2.5	314	1411
11	IRRI paddy + wheat	360	74	106714	40388	99575	59187	-7139	0.93	2.5	277	1346
12	IRRI paddy+sunflower	360	84	107929	42782	101201	58418	-6728	0.94	2.4	281	1205
13	Sugarcane	394	48	88386	20886	102364	81478	13978	1.16	4.9	260	2133
	Sindh											
1	Wheat	180	12	42841	12935	44813	31877	1972	1.05	3.5	249	3734
2	Seed cotton	240	18	69840	23596	90925	67329	21085	1.30	3.9	379	5051
3	IRRI paddy	180	56	52012	18745	48295	29550	-3717	0.93	2.6	268	862
4	Sunflower (spring)	180	22	34703	10843	32423	21580	-2280	0.93	3.0	180	1474
5	Canola	180	13	28211	6810	30725	23915	2514	1.09	4.5	171	2363
6	Seed cotton + wheat	420	30	112681	36531	135738	99206	23057	1.20	3.7	323	4525
7	Seed cotton+sunflower	420	40	104543	34439	123348	88909	18805	1.18	3.6	294	3084
8	IRRI paddy + wheat	360	68	94852	31680	93108	61428	-1745	0.98	2.9	259	1369
9	IRRI paddy+sunflower	360	78	86715	29587	80718	51130	-5997	0.93	2.7	224	1035
10	Sugarcane	488	71	107408	29567	125010	95443	17602	1.16	4.2	256	1761

Notes for Annex –X

1. Economic analysis presented in the above exercise is based on the input-output prices applicable for 2018-19 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, 2018-19 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 2018-19 crops. To incorporate the escalations in input prices, which occurred during the growing period of 2018-19 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 1300 per 40 kgs, as maintained by the government for 2018-19 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 1775 and Rs 1050 per 40 kgs, respectively. While, the average price of IRRI paddy in Sindh is reported at Rs 1041 per 40 kgs.

4.3 The wholesale market prices of seed cotton during the post-harvest months of 2018-19 in the main producer area markets have averaged at Rs 3776 per 40 kgs in the Punjab and Rs 3637 Sindh.

4.4 The price of Sunflower crops has been reported hovering around Rs 2400/40 kgs and Rs 2500/40 kgs for Canola during 2018-19.

4.5 The indicative prices of sugarcane as announced by the provincial governments are taken for the analysis i.e. Rs 180 per 40 kgs in the Punjab and Rs 182 per 40 kgs in Sindh. However, the prices received by the growers remained much lower (ranging Rs 160 and 140, 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 17 per 40 kgs in Punjab and Rs 15.32 in 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-

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

ANNEX

ECONOMIC EFFICIENCY OF RESOURCE USE IN WHEAT PRODUCTION IN SINDH

POLICY ANALYSIS MATRIX (PAM)

Based on import parity prices

Description	Revenues	Traded cost	Domest Factor cost	Profits
	--------- Rupees per acre ---------			
2013-14				
Private Prices	39032	17828	16226	4978
Social Prices	46521	14655	16350	15516
Transfers	-7490	3173	-124	-10538
2014-15				
Private Prices	35887	18616	18927	-1655
Social Prices	40261	15423	18783	6054
Transfers	-4373	3193	143	-7709
2015-16				
Private Prices	37028	18556	17355	1118
Social Prices	35419	16988	17316	1115
Transfers	1609	1568	39	3
2016-17				
Private Prices	40500	17474	19455	3572
Social Prices	33470	16015	19552	-2097
Transfers	7030	1459	-97	5668
2017-18				
Private Prices	40500	17936	20133	2432
Social Prices	36050	16490	20172	-612
Transfers	4450	1445	-39	3044
2018-19				
Private Prices	44813	20100	22531	2182
Social Prices	48014	18392	22823	6800
Transfers	-3202	1708	-292	-4618

ANNEX-XIII

SUPPORT PRICE OF WHEAT ON AVERAGE HOUSEHOLD EXPENDITURE

Proposed support price	Expenditure on wheat at average per capita @ 100 kgs per year **		Rise in annual per capita expenditure	
	Person	Per household	Person	Per household
	---------- Rs per 40 kgs ----------			
*1300	3250	20507	-	-
1325	3312	20899	62	392
1350	3375	21296	125	789
1375	3437	21687	187	1180
1400	3500	22085	250	1578
1425	3542	22350	312	1969
1450	3625	22874	375	2367

Note: Average size of household comprises of 6.31 members.

***Existing price for 2019-20 wheat crop.**

****** Recommended by M/o NFS&R.**

Source: PSLM household Integrated Survey (HIES) 2016-17, Pakistan Bureau 0f Statistics (PBS), Islamabad.

ANNEX-XIV

YIELD PER HECTARE OF MAJOR WHEAT PRODUCING COUNTRIES IN THE WORLD:2018 CROP

S.No.	Country	Yield per Hactare in Kgs	S.No.	Country	Yield per Hactare in in Kgs
1	New Zealand	8960	30	Poland	4063
2	Netherlands	8821	31	Bosnia and Herzegovina	4020
3	Ireland	8738	33	Spain	3872
4	Belgium	8443	34	Oman	3853
5	United Kingdom	7755	35	Italy	3806
6	France	6843	36	Ukraine	3724
7	Egypt	6690	37	South Africa	3711
8	Germany	6674	38	Albania	3693
9	Saudi Arabia	6533	39	Lithuania	3673
10	Denmark	6235	40	Republic of Korea	3656
11	Chile	6214	41	Japan	3610
12	Luxembourg	6039	42	Mali	3542
13	Switzerland	5642	43	Latvia	3431
14	Mexico	5437	44	North Macedonia	3396
15	China, mainland	5417	45	**India**	3371
16	Czechia	5390	46	Lebanon	3367
17	Croatia	5376	47	Canada	3215
18	Namibia	5304	48	Montenegro	3208
19	Zambia	5281	49	United States of America	3200
20	Hungary	5095	50	Argentina	3181
21	Malta	5080	51	Bangladesh	3130
22	Bulgaria	4812	52	Republic of Moldova	3125
23	Romania	4802	53	Tajikistan	3048
24	Slovakia	4780	54	Kuwait	3000
25	Austria	4685	55	Niger	2962
26	Serbia	4574	56	Venezuela (Bolivarian Republic of)	2939
27	Slovenia	4381	57	Azerbaijan	2938
28	Sweden	4350	58	Estonia	2913
29	Uzbekistan	4126	59	**Pakistan**	2850
				World Average	**3422**

Source: FAO Production Year Book 2018

ANNEX-XV

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	65000
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.			