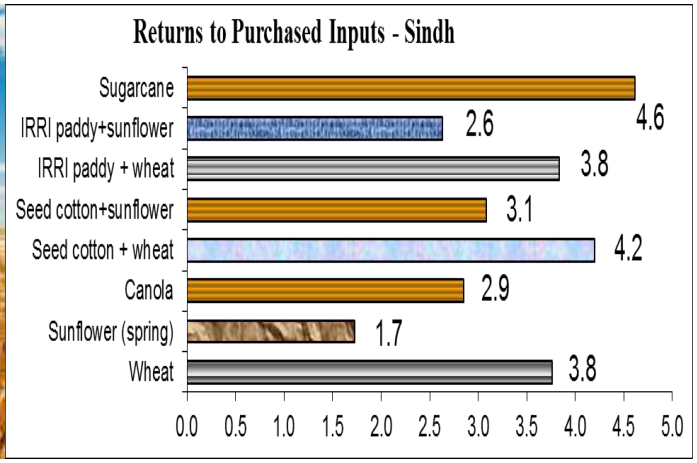
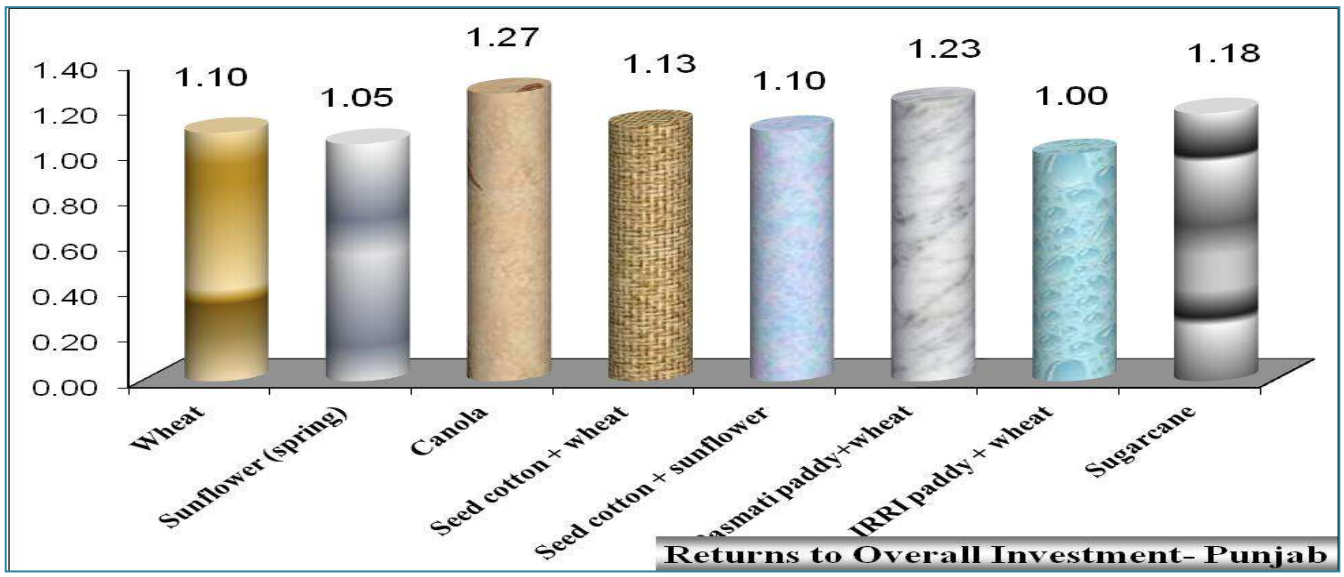
API SERIES NO. 268

WHEAT POLICY ANALYSIS FOR 2018-19 CROP





AGRICULTURE POLICY INSTITUTE

MINISTRY OF NATIONAL FOOD SECURITY AND RESEARCH

GOVERNMENT OF PAKISTAN

ISLAMABAD

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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 2018-19 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 87.2 per cent of the area and contribute about 91.2 per cent in wheat production. While the share of Khyber Pakhtunkhwa and Balochistan is 12.7 per cent in area and 8.8 per cent in production.
- During the decade ending 2017-18 wheat production has risen @ 1.5 per cent per annum.
- Wheat production from 2017-18 crop is estimated at 25.07 million tonnes, showing 6 per cent reduction over the production of 26.67 million tonnes in 2016-17.
- Since 2010, 22 high yielding wheat varieties have been developed by Research Institutes in Punjab for the irrigated and rainfed areas and yield is estimated between 7500-8000 kgs per hectare.

Domestic Requirements

- Based on 3-year average per capita availability of 114 kgs per annum, the domestic requirement of wheat for human consumption comes to 24.26 million tonnes for the year 2017-18.
- Assuming the per capita consumption at 100 kgs per annum, the domestic requirement for human consumption comes to 21.28 million tonnes.
- Including one million tonnes as food security reserve and 2.58 million tonnes for seed, feed and wastage, the total domestic requirement will range between 24.86 and 27.84 million tonnes. Adding the last year stocks, the surplus estimates at 1.04 to 4.02 million tonnes, respectively.

Domestic Prices

- Monthly average market prices of wheat for 2017-18 crop remained below the support price, in Punjab and Sindh.
- The wholesale prices of wheat averaged at Rs 1210 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 2018-19 season is estimated at Rs 37,392 per acre including land rent.
- The cost of production at market / procurement centre level would be Rs 1284 per 40 kgs, which is higher by Rs 100 than the corresponding COP Rs 1184 in 2017-18.

- In Sindh, the cost of wheat cultivation for 2018-19 crop is predictable at Rs 37,631 per acre including land rent.
- The cost of production at market/procurement centre level would come to Rs 1271 per 40 kgs, showing increase of (9.66) per cent over the last year.

Economics of Wheat and Competing Crops

- Wheat farming in Punjab has performed better than sunflower and canola during 2017-18 in terms of certain economic criteria specifically returns to purchase inputs and the irrigation water. However, sunflower out-performed wheat in crop duration while canola has given better returns over wheat and sunflower.
- Wheat cultivation in Sindh, performed better than the sunflower in all the economic criteria. However it lags marginally lower than canola in terms of output-input ratio. However, its performance was much better in rest of criteria.
- In case of indirect competition, sugarcane performed comprehensively better than all of the crop combinations in majority of economic indicators both in Punjab and Sindh.
- However, cotton combinations with wheat and sunflower are proftable in terms of irrigation water and crop duration. IRRI combinations in Sindh paid returns to the growers lower against the sugarcane in term 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 2007 to 2018.
- During 2017-18, the parity ratio between market prices of Nitrogen and wheat was not in favour of wheat due to high prices of Nitrogen fertilizer and 1.84 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 2007-17.
- During 2017-18, the parity ratio between market prices of Phosphatic and wheat purchasing power improved in terms of Phosphatic fertilizers and 1.16 units of wheat could purchase one unit of P fertilizer. The lowest ratio observed during the period under review.

Nominal and Real Support Prices

- The nominal support prices of wheat during 2007-08 to 2017-18 have experienced, overall increase of 119.01 per cent, while the real support prices have decreased by 5.09 per cent over the base year.
- During 2017-18, the nominal support price remained unchanged over the last year, while the real support price has decreased by -3.19 per cent in view of general inflation in the economy.

Nominal and Real Market Prices

- The nominal market prices of wheat have shown an overall surge of 77.34 per cent, while the real market prices have shown, receded by (-19.0) per cent due to rise in CPI.

- During .2017-18, the nominal market price has declined by (- 0.84) per cent, while the real market price has deteriorated by (- 2.29) per cent in the wake of inflationary trend.

World Production and Prices

- World wheat production estimated at 758 million tonnes in 2017-18 is higher by 6 million than the last year while it is forecast to 716 million tonnes in 2018-19.
- The closing stocks at 242 million tonnes in 2016-17 improved to 261 million tonnes in 2017-18 and are forecast to further improve to 248 million in 2018-19.
- The average Fob (gulf) prices of US Hard Red Winter (HRW) wheat fluctuated widely and rising as high as $ 209 per tonne in 2009-10 to 347 per tonnes in 2012-13. In 2017-18, wheat prices showed upward trend averaged at US $ 229 per tonne during the period.
- During the first half-year of 2018-19, international prices of US No. 2 HRW wheat have averaged at US $ 244 per tonne, the prices are slightly improve in 2018-19.

Export/Import Parity Prices

- Based on the average Fob (gulf) price of US HRW and US SRW wheat during 2017-18, the export parity price works to Rs 966 and 732 per 40 kgs. The export parity price calculates to Rs 846 and 713 per 40 kgs respectively on the basis of average fob price during 2015-16 to 2017-18.
- Based on the average Fob (gulf) price of 2018-19 (July-Sept), the export parity price of wheat works back to Rs 1038 per 40 kgs and US SRW is 904 per 40 kgs.
- Based on average Fob (gulf) prices during 2015-16 to 2017-18, the import parity prices work to Rs 1439 per 40 kgs at Multan, while Rs 1375 per 40 kgs at Karachi and with reference to SRW at Multan 1257 per 40 kgs while Rs 1157 per 40 kgs at Karachi.
- Based on the Fob price during 2018-19 (July-Sept), the import parity prices calculate to Rs 1605 per 40 kgs at Multan and Rs 1541 per 40 kgs at Karachi as compared to SRW the prices calculate to Rs 1465 at Multan and Rs 1365 per 40 at Karachi.
- The correspoding prices for 2017-18 are worked out respectively at Rs 1528 and 1464 per 40 kgs wheras the SRW worked out at 1278 and 1178 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 value exceeded than one in 2017-18 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 2017-18 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 2018-19 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 2017-18, if exported from Multan	1038	904
	b) Fob (gulf) average prices of US HRW & SRW wheat during 2015-16 to 2017-18, if exported from Multan	885	713
	c) Fob (gulf) prices of US HRW & SRW wheat during 2017-18 (Jul-Sept), if exported from Multan	966	732
2.	**Import parity price on the basis of:**		
	a) Fob (gulf) prices of US HRW & SRW wheat during 2017-18, if consumed at:		
	- Karachi	1464	1178
	- Multan	1528	1278
	b) Fob (gulf) price of US HRW & SRW wheat during 2015-16 to 2017-18, if consumed at:		
	- Karachi	1375	1157
	- Multan	1439	1257
	c) Fob (gulf) price of US HRW & SRW wheat during 2018-19 (July-Sept), if consumed at:		
	- Karachi	1541	1365
	- Multan	1605	1465
3.	**Monthly average wholesale market prices of wheat in major producing areas during the post-harvest period of 2017-18 crop:**		
	- Punjab	1210	-
	- Sindh	1161	-
4.	**Cost of production estimates at market/procurement centre level for 2018-19 crop:**		
	- Punjab	1284	-
	- Sindh	1271	-

- **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 2018-19 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 by may like to consider the Minimum support price of wheat and maintain at Rs 1300 per 40 kgs for 2018-19 crop.
- 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 2018-19 CROP

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INTRODUCTION

Wheat is one of the largest crops of the country and the staple diet. Wheat contributes about 9.1 per cent to the value added in agriculture and 1.7 per cent to the GDP[1]. The crop occupies around 38 per cent of total cropped area. It is generally cultivated on 9 million hectares with an annual average production of 25.076 million tonnes (2017-18). Wheat production has marginally increased @ 1.5 per cent per annum since last ten years. About 88.1 per cent of wheat area is irrigated which accounts 94.2 per cent of the annual production. During certain years like 2010-11 and 2011-12, wheat was exported in high quantity. During 2017-18, wheat production remained 5.2 per cent of production target fixed by FCA attribution to yield increase by 3.7 per cent.

2. Amongst the large wheat producing countries, Pakistan ranks 8th in terms of both area and production of wheat. 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 in yield 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 in general field conditions. 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 2017-18 and retained at Rs 1300 per 40 kgs, which was announced for 2017-18 crop.

4. During 2017-18, wheat procurement was reported at 5.98 million tonnes, against the target of 6.10 million tonnes[3] procurement agencies have achieved 98.18 per cent of the target fixed by the government. The government has sufficient stocks of around 9.92 million tonnes to meet the domestic requirements of over 24.86 million tonnes during the consumption year 2018-19.

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[1] Economic Survey of Pakistan, 2017-18.
[2] Food and Agriculture Organization.
[3] M/o National Food Security and Research.

5. The price policy recommendations for 2018-19 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, 2017 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 HARVESTING 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 2017-18 CROP

3.1 Provincial Shares in Area and Production

14. Based on average wheat production during 2015-16 to 2017-18, Punjab and Sindh contribute about 76.5 and 14.7 per cent in total wheat production while the shares of the Khyber Paktunkhwa and Balochistan are around 5.3 and 3.5 per cent, respectively. The provincial shares of area and production are presented in Table-2 and depicted in Figures 1 & 2, respectively.

15. Around 88.1 per cent of wheat acreage is cultivated under irrigated conditions which contribute 94.2 per cent of wheat production in the country.

Table-2: Average Share of different provinces in Area and Production of Wheat (2015-16 through 2017-18)

Item/ Province	Total	Pakistan	Punjab	Sindh	Khyber Paktunkhwa	Balochistan
	000 hect.	---------- Per cent ----------				
A. Area						
Total	**8997.8 (22234.4)**	**100.0**	**74.6**	**12.6**	**8.4**	**4.3**
Irrigated	7927.8 (19590.5)	88.1	67.7	12.2	3.9	4.2
Un-irrigated	1069.9 (2643.9)	11.9	6.9	0.4	4.5	0.1
B. Production	000 tonnes	---------- Per cent ----------				
Total	**25794.3**	**100.0**	**76.5**	**14.7**	**5.3**	**3.5**
Irrigated	24303.8	94.2	73.3	14.4	3.0	3.5
Un-irrigated	1490.5	5.8	3.2	0.3	2.3	0.0

Note: Figures in parentheses are thousand acres.

Source: Worked out from Annex- …

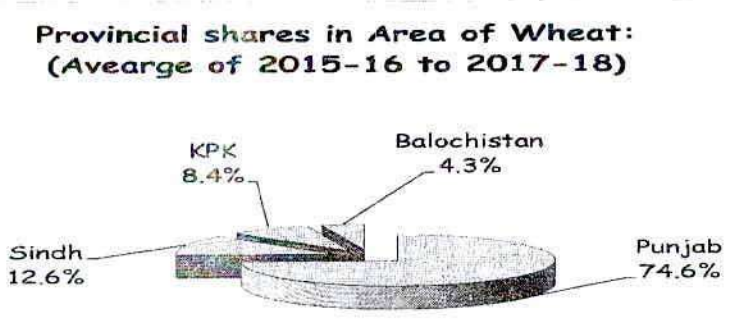


Figure-1: Shares in Area

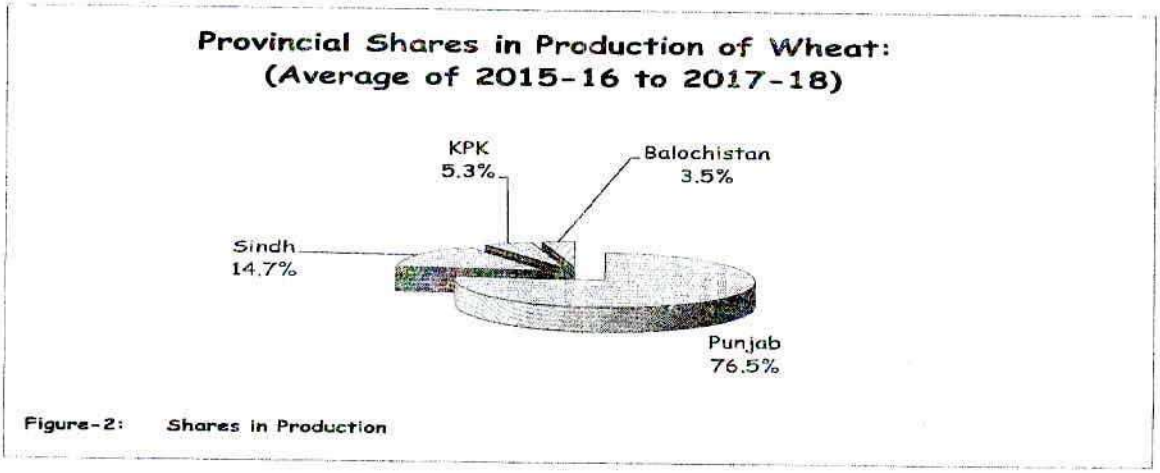


Figure-2: Shares in Production

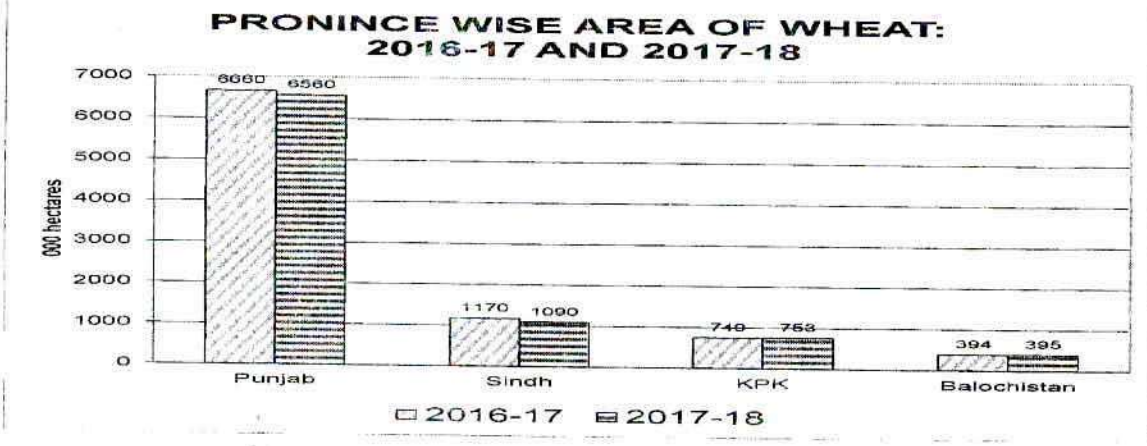


Fig-3: Province-wise Area of Wheat: 2016-17 and 2017-18.

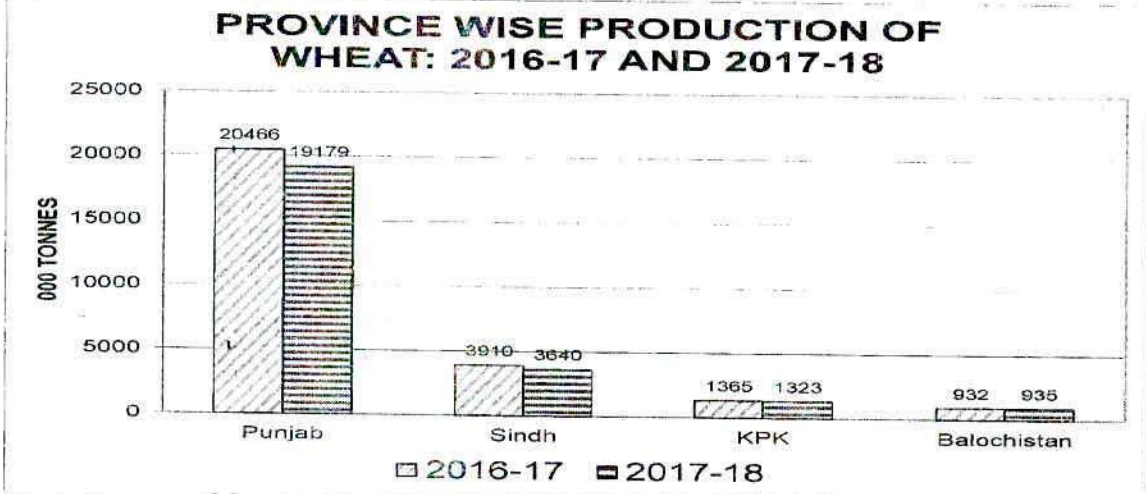


Fig-4: Province-wise Area of Wheat: 2016-17 and 2017-18.

3.2 Long-term Changes: 2007-08 to 2017-18

16. During the decade ending 2017-18, wheat production at country level has surged @ 1.5 per cent per annum owing to 1.3 per cent improvement in yield and 0.2 per cent expansion in area. In the Punjab, wheat production has increased @ 1.7 per cent annually due to 1.5 per cent improvement in yield and 0.1 per cent acreage expansion. In Sindh, wheat production increased @ 0.5 per cent per annum due to expansion of area by 1.0 per cent whether 0.5 per cent contraction of yield of the crop. Annual growth rate of wheat production in Khyber Paktunkhwa and Balochistan remained 2.3 percent in Table-3.

Table-3: Average Annual Growth Rate of Area, Yield and Production of Wheat during 2007-08 through 2017-18

Country/ Province	Area	Yield	Production
	---------- Per cent per annum ----------		
Pakistan	**0.2**	**1.3**	**1.5**
Punjab	0.1	1.5	1.7
Sindh	1.0	-0.5	0.5
Khyber Paktunkhwa	0.1	2.2	2.3
Balochistan	0.1	2.2	2.3

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

3.3 Medium Term Changes: 2012-13 to 2017-18

17. The annual growth rate for the period 2012-13 to 2017-18 shows that in Pakistan wheat production has increased @ 0.8 per cent solely due to 0.8 percent increase of yield at the country level. These growth rates are presented in Table-4.

Table-4: Average Annual Growth Rates of Area, Yield and Production of Wheat: 2012-13 to 2017-18

Country/Province	Area	Yield	Production
	--------- Per cent per annum ---------		
Pakistan	**0.02**	**0.8**	**0.8**
Punjab	-0.2	1.0	0.8
Sindh	0.9	-0.8	0.1
KPK	0.3	0.8	1.2
Balochistan	1.1	2.3	3.4

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 2017-18 crop against 2016-17

18. Wheat production from 2017-18 crop is reported at 25.076 million tonnes at the country level, showing 6.0 per cent lower over 26.674 million tonnes in 2016-17due to decrease of 2.0 and 4.1percent in area and yield respectively. These statistics are produced in Table-5 and depicted in Fig-3 & 4.

Table-5: Area, Yield and Production of Wheat: 2016-17 and 2017-18 Crops

Country/ Province	Area		Changes	Yield per hectare		Changes	Production		Changes
	2016-17	2017-18		2016-17	2017-18		2016-17	2017-18	
	-- 000 hectares --		Per cent	-----Kgs ----		Per cent	-- 000 tonnes --		Per cent
Pakistan	**8972.4**	**8797.3**	**-2.0**	**2973**	**2850**	**-4.1**	**26673.7**	**25076.2**	**-6.0**
Punjab	6660.2	6559.8	-1.5	3073	2924	-4.9	20466.4	19178.6	-6.3
Sindh	1169.5	1089.6	-6.8	3344	3340	-0.1	3910.4	3639.5	-6.9
KPK	748.6	753.4	0.6	1824	1756	-3.7	1365.1	1322.7	-3.1
Baloch.	394.1	394.5	0.1	2364	2371	0.3	931.8	935.4	0.4

Source: Annex-II.

3.5 Important Wheat Producing Districts

19. Bahawalnagar district is on the top in wheat production in Pakistan they produce more than one million tonnes of wheat per annum. Districts producing more than 500 thousand tonnes per annum are Bahawalnagar, Bahawalpur, Rahim Yar Khan, Faisalabad, Muzaffargarh, Jhang, Vehari, Lodhran, Khanewal, Gujranwala, Okara, Sheikhupura, Layyah, Multan, T.T.Singh. Rajanpur, D.G.Khan, Sargodha, Sialkot, Hafizabad, Pakpattan, and Kasur. These 22 districts produce 56 per cent of total wheat production in Pakistan while their share in area is estimated at 51 per cent. Sahiwal, Bhakhar, M.B.Din, Nankana Sahib, Mianwali, Narowal and Chinniot from Punjab and Naushero Feroz, Khairpur, Ghotki, Sanghar, and Shaheed Benazirabad from Sindh, D.I Khan from Khyber Paktunkhwa, Nasirabad and Jaffarabad from Balochistan are other important wheat producing districts in the country. District-wise production shares are given in Annex-III.

3.6 Targets Vs Achievements: 2017-18 Crop

20. Wheat production target for 2017-18 crop was at 26.464 million tonnes from an evidence area of 8.945 million hectares by Federal Committee on Agriculture (FCA). However, production from the 2017-18 crop is reported at 25.076 million tonnes, declined by 5.2 per cent against the target. The production target could not be achieved due to discount of 1.6 and 3.7 per cent in area and yield respectively. Provincial details on area, yield and production may be seen in Table-6 which is depicted in Figures 5 and 6.

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

Country/ Province	Area		Deviation from target	Yield per hectare		Deviation from target	Production		Deviation from target
	Targets	Achieve-ments		Targets	Achieve Ments		Targets	Achieve ments	
	000 ha		Percent	Kgs		Percent	000 tonnes		Percent
Pakistan	**8944.6**	**8797.3**	**-1.6**	**2959**	**2850**	**-3.7**	**26463.6**	**25076.2**	**-5.2**
Punjab	6637.0	6559.8	-1.2	3013	2924	-3.0	20000.0	19178.6	-4.1
Sindh	1150.0	1089.6	-5.3	3652	3340	-8.5	4200.0	3639.5	-13.3
KPK	757.6	753.4	-0.6	1800	1756	-2.5	1363.6	1322.7	-3.0
Balochistan	400.0	394.5	-1.4	2250	2371	5.4	900.0	935.4	3.9

Sources: 1. For targets: Minutes of the 9th meeting of FCA held on 11-10-2017 at Islamabad
2. For Achievements: Annex-III.

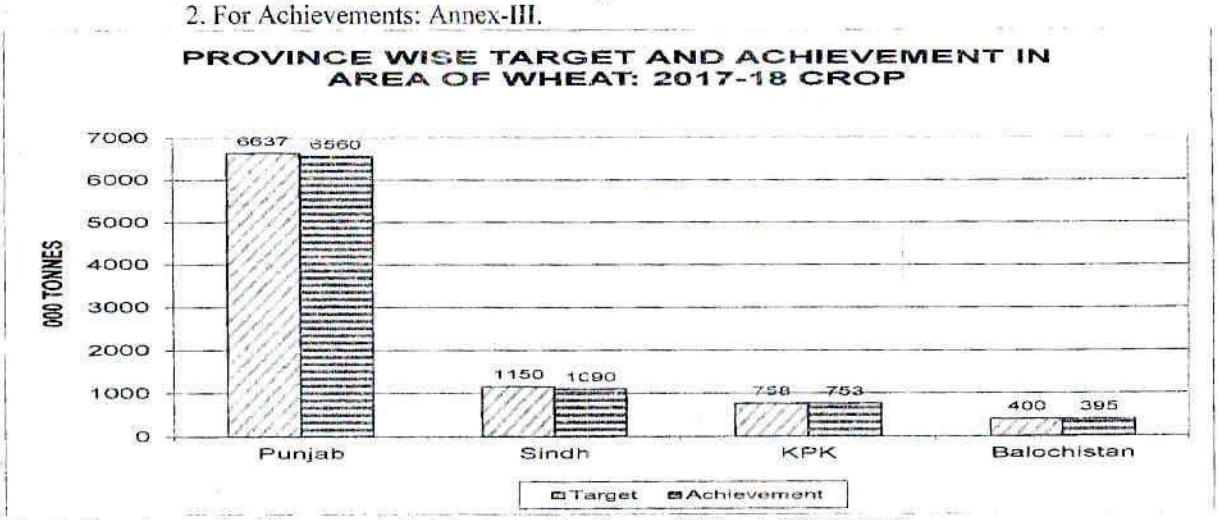


Fig-5: Province-wise Target and Achievement in Area of Wheat: 2017-18 Crop

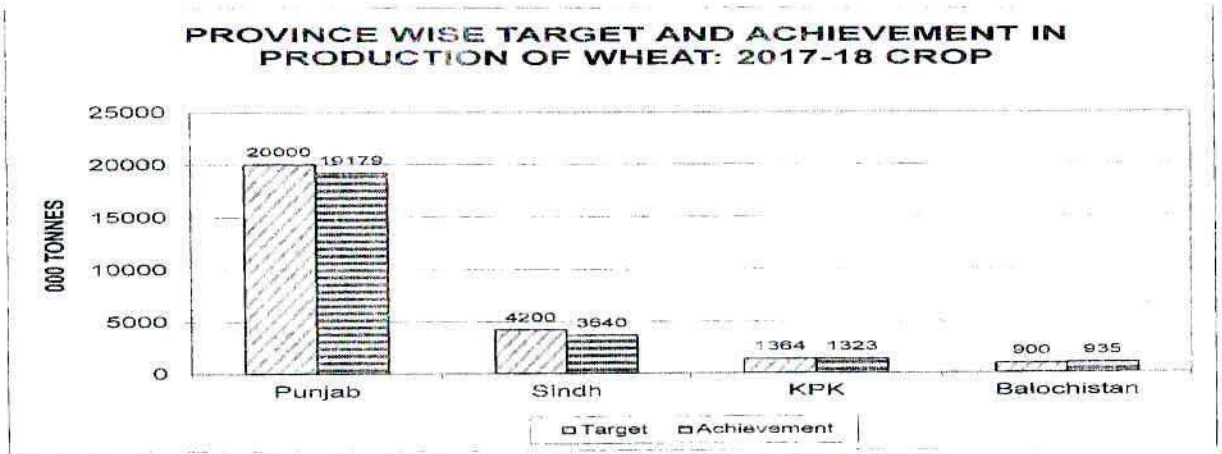


Fig-6: Province-wise Target and Achievement in Area of Wheat: 2017-18 Crop

4. FACTORS CONSIDERED FOR PRICE POLICY ANALYSIS

21. Following major factors were considered for the analysis of the price policy of wheat 2018-19 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. The country has produced 25.076 million tonnes wheat during 2017-18. After adding the carryover stocks of 3.12 million tonnes as on May 1, 2018, total wheat supply in the country for 2018-19 consumption year becomes 28.63 million tones. This supply may slightly increase if production of wheat in Azad Kashmir and Gilgit Baltistan estimated at 0.26 million tonnes is added. Thus total availability of wheat in the country would be 28.89 million tonnes.

23. National requirement of wheat has been worked out on the basis of balance sheet method 114 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 2018-19 for the population of 212.77 million is estimated at 24.26 million tonnes. Accounting for export, seed, feed and wastage @ 10 per cent of production and strategic reserve of one million, gross domestic requirement for 2018-19 is estimated at to 27.84 million tonnes. However, this requirement would be 21.28 million tonnes if estimated at per capita availability of 100 Kgs per annum as suggested by M/o NSF&R. Resultantly, the country have 1.04 million tonne surplus wheat available as per 114 kgs consumption whereas it would be 4.02 million tone if used the 100 kgs per capita consumption. The calculations are presented in Table -7.

Table-7: Domestic Requirement of Wheat for 2018-19 Wheat Year: (May-April)

S. No.	Item	Based on annual per capita Consumption on the basis of	
		M/o NFS&R	API
		100 Kgs	114 Kgs
1.	Population (Million)	212.77	212.77
2.	Human consumption requirement (Million tonnes)	21.28	24.26
3.	Allowance for seed, feed and wastage @ 10 per cent of total production (Million tonnes)	2.58	2.58
4.	Food Security reserves (Million tonnes)	1.00	1.00
5.	**Total requirements (Million tones)**	**24.86**	**27.84**
6.	**Total supply (production+carry forwarded)**(M tonne)	**28.88**	**28.88**
7.	Surplus/ Deficit(Million tonnes)	4.02	1.04

Source: Annex-IV.

- **Post harvest prices**

24. Monthly wholesale prices of wheat during the post-harvest months of 2017-18 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 2017-18 Crop

Markets	May	June	July	Average
	----------Rs per 40 kgs----------			
Faisalabad	1250	1250	1253	1251
Sargodha	1190	1231	1242	1221
Multan	1124	1281	1288	1231
Gujranwala	1112	1140	1140	1131
Okara	1146	1204	1241	1197
R. Y. Khan	1179	1246	1259	1228
Bahawalpur	1181	1140	1140	1154
D. G. Khan	1260	1277	1275	1271
Average	**1180**	**1221**	**1230**	**1210**

Sources: 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 2017-18 Crop

Markets	April	May	June	Average
	----------Rs per 40 kgs----------			
Mirpur Khas	1180	1163	1158	**1167**
Sanghar	1150	1158	1178	**1162**
Hyderabad	1150	1180	1178	**1169**
Shaheed Benazir Abad	1150	1159	1173	**1161**
N.S.Feroze	-	1143	1180	**1161**
Khairpur	-	1150	1175	**1163**
Larkano	-	1143	1160	**1152**
Dadu	-	1168	1145	**1157**
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 May to July 2018. The monthly average prices ranged between Rs 1112 per 40 kgs in Gujranwala market during month of May, 2017 to Rs 1288 per 40 kgs in Multan market during Month of July 2018. The seasonal average has ranged between Rs 1131 to Rs 1271 per 40 kgs.

26. In Sindh, Table-9, the price of wheat also ruled lower the support price of wheat during the post- harvest season of 2017-18 (April to June). The lowest prices were observed @ Rs 1143 in Noshero Feroze and Larkano markets during month of May, 2018 and the highest price Rs 1180 per kgs were witnessed in Mirpur Khas and Nowshero Feroze Hyderabad market during month of April to May, 2018 and Noshero Feroze during June, 2018. The seasonal average ranged between Rs 1152 per 40 kgs to Rs 1169 per 40 kgs.

4.2 World Production, Consumption, Stocks and Trade Situation

27. The data on world production, consumption, stocks and trade situation from 2016-17 to 2018-19 are presented in Table-10.

28. The world wheat production in 2017-18 is estimated at 758 million tonnes, 6 million tons higher than that of last year. After adding the opening stocks of 242 million tonnes, the world supply of wheat in 2017-18 is estimated at 1000 million tones 22 million tonnes higher than the

last year. Due to higher production during 2017-18, carryover stocks have further increased to 261 million tones as compared to 242 million tones last year's stock.

Table-10: World Wheat Situation: 2016-17 to 2018-19

Items	2016-17	2017-18 (Estimated)	2018-19 (Forecast)
	.....Million tonnes.....		
Opening stocks	226	242	261
Production	752	758	716
Total Supply	978	1000	977
Consumption	737	738	734
Closing stocks	242	261	248
Trade	177	176	174

Source: Grain Market Report, International Grains Council, London, August 23, 2018 GMR No 491

29. According to the International Grains Council London, report of August 23, 2018, the global wheat production in 2018-19 is forecast to decrease to 716 million tonnes. Accounting for the opening stocks of 261 million tones, total supply is anticipated at 977 million tones against the consumption forecast of 734 million in 2018-19. Due to lower production forecast during, the carryover stocks will be significantly decreased to 248 million tones, 13 million tones lower than last year.

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

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 for 2018-19 crop.

32. Average Fob (Gulf) prices of US Hard Red Winter from 2007-08 to 2018-19 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 $ 361 per tonne during 2007-08 but declined in the next two years and averaged at US $ 209 per tonne during 2009-10. Next year, the price recovered to US $ 316 per tonne but again decreased to $ 301. During 2012-13, the prices increased sharply 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 an upward trend and

averaged at US $ 229 per tonne during 2017-18. In current season 2018-19 (July-August), the price is gaining a slight upward trend and averaged at $ 243 per tonne.

34. The price of Soft Red Winter has followed an almost similar pattern as of HRW during the period under review.

4.4 Import and Export Parity Prices of Wheat

35. The import and export parity prices have been calculated on the basis of fob (Gulf) prices of US No 2 HRW and SRW wheat. The results of the calculations have been summarized in Table-11 and 12, while the detail of these calculations may be seen at Annexes-VI and -VII.

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

Item	2018-19 Jul-Sep	During 2017-18	During 2015-16 to 2017-18
Fob Gulf price of HRW (US $ per tonne)	244	229	212
Import parity price per 40 kgs of wheat:			
i) if consumed at Multan	1605	1528	1439
ii) If consumed at Karachi	1541	1464	1375
Fob Gulf price of SRW (US $ per tonne)	224	188	184
Import parity price per 40 kgs of wheat:			
iii) if consumed at Multan	1465	1278	1257
iv) If consumed at Karachi	1365	1178	1157

Table-12: Export Parity Prices of Wheat on the Basis of No.2 Hard Red Winter Fob (Gulf)

Item	2018-19 Jul-Sep	During 2017-18	During 2015-16 to 2017-18
Fob Gulf price assuming for Karachi (US $ per tonne)	244	229	212
Export parity price per 40 kgs at procurement centre	1038	966	885
Fob Gulf price of SRW (US $ per tonne)	224	188	184
Export parity price per 40 kgs at procurement centre	904	732	713

4.5 Cost of Production of Wheat

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

37. The cost of production of wheat for 2018-19 crop in the Punjab and Sindh have been estimated by adopting the input-output parameters used in the 2017-18 Wheat Policy Analysis Report alongwith the latest inputs prices and custom hiring rates of cultural operations, collected through mini field survey conducted by the API during July 2018 in the major wheat growing areas of the Punjab and Sindh. The inputs prices and custom hiring rates were also supplemented with the information provided by the representatives of the Provincial Governments and Farmers' Associations in the meeting of the API Committee on wheat, held on August 01, 2018 at Islamabad. The details of the COP estimates for the Punjab and Sindh for 2017-18 and 2018-19 crops are presented at Annex-VIII and IX, respectively while the summary of these is presented in Table-12.

Average Farmers' Cost of Production of Wheat: 2017-18 and 2018-19 Crops

38. The cost of production estimates of wheat in the Punjab and Sindh for 2017-18 and 2018-19 crops are summarized and presented in Table-13.

Table-13: Average Farmers' Cost of Production of Wheat: 2017-18 and 2018-19 Crops

Items	Units	2017-18 Crop	2018-19 crop	Increase/decrease in 2018-19 over 2017-18
Punjab				
1. Net cost of cultivation	Rs/acre	34388	37392	3004
2. Yield				
a) Yield in kgs	Kgs/acre	1200	1200	0
b) Yield	40 kgs/acre	30	30	0
3. Cost of production at farm level	Rs/40 kgs	1146	1246	100
4. Marketing cost	Rs/40 kgs	38	38	0
5. Cost of production at market/ procurement centre				
a) With land rent	Rs/40 kgs	1184	1284	100
b) Without land rent	Rs/40 kgs	684	784	100
Sindh				
1. Net cost of cultivation	Rs/acre	33498	37631	4133
2. Yield				
a) Yield in kgs	Kgs/acre	1200	1225	25
b) Yield in maunds	40 kgs/acre	30	31	1
3. Cost of production at farm level	Rs/40 kgs	1117	1229	112
4. Marketing cost	Rs/40 kgs	42	42	0
5. Cost of production at market/ procurement centre				
a) With land rent	Rs/40 kgs	1159	1271	112
b) Without land rent	Rs/40 kgs	825	863	37

Source: Annex-VIII and IX.

Punjab

39. The expected nêt cost of cultivation of one acre of wheat in the Punjab during 2018-19 crop year is Rs 37392 including land rent (Table12). The cost of producing wheat at farm gate is worked out at Rs 1246 per 40 kgs, provided that average yield is 1200 kgs per acre. Accounting for the marketing charges @ Rs 38 per 40 kgs, the market/procurement center level cost of production comes out to Rs 1284, high by Rs 100 (8.7 %) than the corresponding cost of Rs 1184 in 2017-18.

Sindh

40. Net cost of production per acre of wheat in Sindh during 2018-19 crop is likely to be Rs 37631, inclusive of land rent. Distributing this cost over the average yield of 1225 kgs per acre, the farm level cost of production comes to Rs 1229 per 40 kgs. Adding marketing cost @ Rs 42 per 40 kgs, the cost of producing and delivering 40 kgs wheat at market/procurement centre level would be Rs 1271, reflecting an increase of Rs 112 (10.0 %) over the last year's corresponding cost of production.

41. The increase in the cost of production of wheat for the 2018-19 crop in the Punjab and Sindh over the last year's cost are mainly attributed to the inclined hiring rates of fertilizers, harvesting & threshing, irrigation and ploughing. Moreover, the diminution in other inputs has also added substantially to the increase in cost of production of wheat for 2018-19 crop.

Cost of major farm inputs and operations

42. The cost of major operations and farm inputs in the total cost of cultivation of wheat in the Punjab and Sindh during 2017-18 and 2018-19 crops along with percent changes therein is presented in Table-13.

Punjab

43. The land rent and Fertilizer including FYM are the major component in gross cost of cultivation of wheat in the Punjab during 2018-19 crop year, accounting for 33 and 17 per cent. The other ingredients are as: Harvesting and threshing (16%), Land preparation (11%) and Seed and sowing operations (7% each), Irrigation (7%), Others (7%) and Intercultural/weedicides (2%).

Table-14: Cost of Major Farm Operations/Inputs of Wheat: 2017-18 and 2018-19 Crops

Operations/inputs	2017-18 crop	2018-19 crop	Share in increased/decrease cost
	---Rs/acre---		Per cent
Punjab			
1. Land preparation	4746 (11)	4746 (11)	0
2. Seed and sowing operations	3244 (8)	3308 (7)	2
3. Intercultural/weedicides	658 (2)	700 (2)	1
4. Irrigation	2913 (7)	3159 (7)	8
5. Fertilizer including FYM	5891 (14)	7622 (17)	58
6. Harvesting and threshing etc	6983 (17)	7256 (16)	9
7. Land rent	15000 (36)	15000 (33)	0
8. Others	2453 (6)	3102 (7)	22
9. Gross cost	**41888 (100)**	**44892 (100)**	**100**
Sindh			
1. Land preparation	5838 (15)	5838 (14)	0
2. Seed and sowing operations	4354 (11)	4339 (10)	0
3. Intercultural/weedicides	600 (2)	726 (2)	3
4. Irrigation	2243 (6)	2375 (6)	3
5. Fertilizer including FYM	6018 (16)	7765 (18)	38
6. Harvesting and threshing etc	6149 (16)	6229 (15)	2
7. Land rent	10000 ((26)	12500 (29)	54
8. Others	2797 (7)	2860 (7)	0
9. Gross cost	**37998 (100)**	**42631 (100)**	**100**

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

Source: Annex-VIII & IX.

Sindh

44. In Sindh, the land rent and fertilizer including FYM is also the major constituent in the total cost of cultivation during 2018-19 crop season, accounting for (29) and (18) per cent. The other components of the cost of cultivation are: Harvesting & threshing operations (15%), Land preparation (14 %), Seed and sowing operations (10%), Others (7%), Irrigation (6%) and Intercultural/weedicides (2 %).

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. Almost 94 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 2017-18 at farm level.

a) Punjab

48. The 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 Table-15 and depicted Fig-7 to 9.

Table-15: Economics of Wheat and Competing Crops at Prices Realized by the Growers in the Punjab: 2017-18 Crops

Province / crops /crop combination	Output-input ratio	Revenue per:		
		Rupee of purchased inputs cost	Crop day	Acre-inch of water used
		.....Rupees.....		
Wheat	1.10	4.0	245	3672
Sunflower (spring)	1.05	2.7	262	2147
Canola	1.27	3.7	222	3078
Cotton + wheat	1.13	3.7	247	3054
Cotton + sunflower	1.10	3.1	255	2432
Basmati + wheat	1.23	3.1	288	1481
IRRI + wheat	1.00	2.9	222	1080
Sugarcane	1.18	5.1	238	1953

Source: Annex-X.

49. Wheat crop has shown better performance during 2017-18 and farmers received a small margin over the cost of wheat production (10 %). In Punjab, Wheat has performed better than the sunflower and canola in terms of larger part of the economic criteria. The major factor for this performance of wheat is the price the farmers have received for their produce.

Sunflower, however, has slightly out-performed wheat in terms of crop duration while Canola has given better rewards over wheat and sunflower in terms of returns to overall investment.

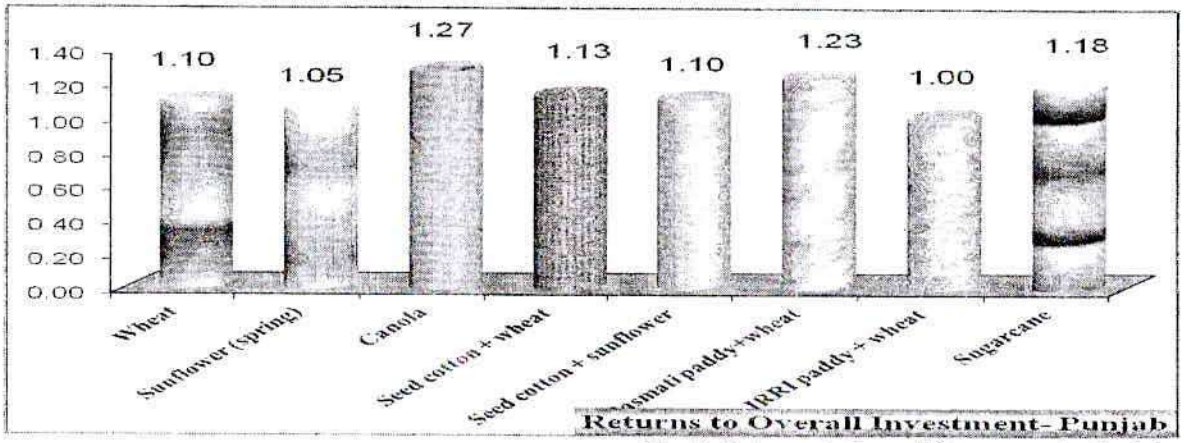


Fig -7: Returns to Overall Investment in Punjab

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

51. Under the indirect competition scenario, wheat combination with Basmati performed relatively better in terms of returns to overall investment and crop duration. The sugarcane, on the other hand, did well as compared to rest of crop 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.

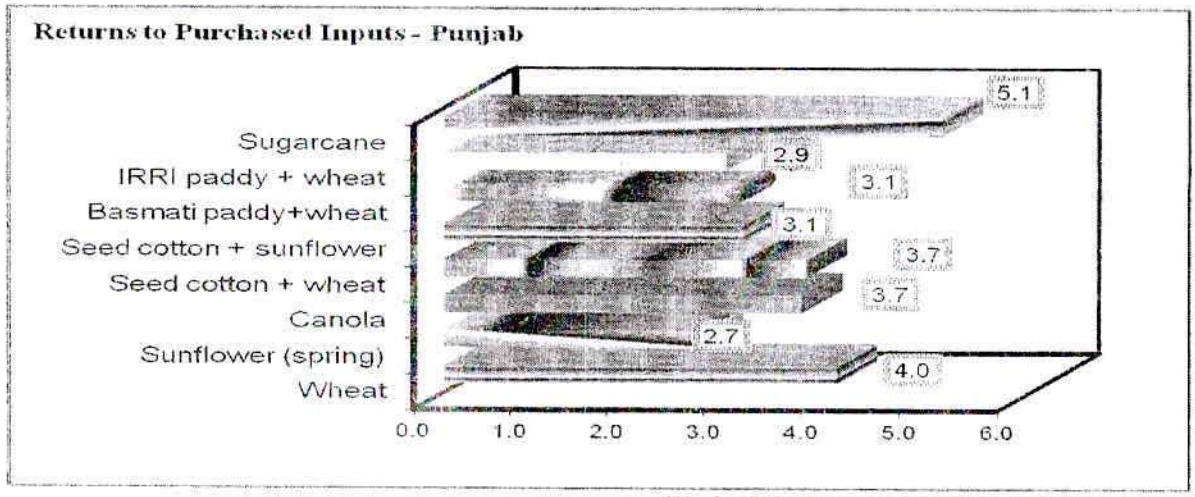
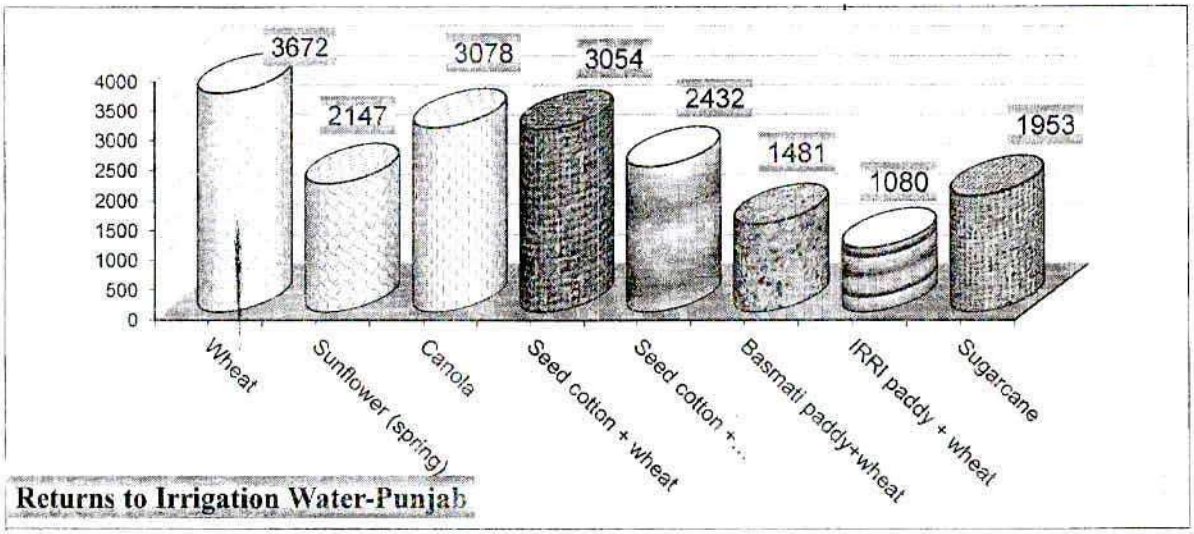


Fig-8 : Returns to Purchased inputs (Punjab)

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



. *Fig-9 : Returns to Irrigation Water (Punjab)*

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

- ***Sindh***

54. Economics of wheat and competing crops has been analyzed at prices realized by the growers in Sindh for crop season 2017-18 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 in Table-16.

55. In Sindh, the returns to overall investment in wheat crop remained higher than 'rabi' oilseed crop Sunflower but marginally lower than canola during 2017-18. However, in respect of other economic indicators like purchased inputs and irrigation water, wheat has performed better than the two oilseeds. Amongst the oilseeds, Canola's position was better than Sunflower with respect to returns to overall investment and other remaining indicators.

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

Table-16: Economics of Wheat and Competing Crops at Prices realized by the Growers in Sindh: 2017-18 Crops

Province / crops / crop combination	Output-input ratio	Revenue per:		
		Rupee of purchased inputs cost	Crop day	Acre-inch of water used
		.....Rupees.....		
Wheat	1.11	3.8	230	3447
Sunflower (spring)	0.67	1.7	164	1340
Canola	1.12	2.9	171	2363
Cotton + wheat	1.25	4.2	274	3841
Cotton + sunflower	1.05	3.1	246	2584
IRRI + wheat	1.20	3.8	246	1303
IRRI + Sunflower	0.96	2.6	213	983
Sugarcane	1.17	4.6	246	1689

Source: Annex-X

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. Sugarcane performed lower than wheat crop combinations in respect of returns to overall investment, and crop duration. Sugarcane, nevertheless, performed better than all the crop combinations in terms of returns to purchased inputs and remained at par with cotton+sunflower and IRRI+wheat combinations in crop duration. Wheat combination with cotton and cotton + sunflower remained high 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.

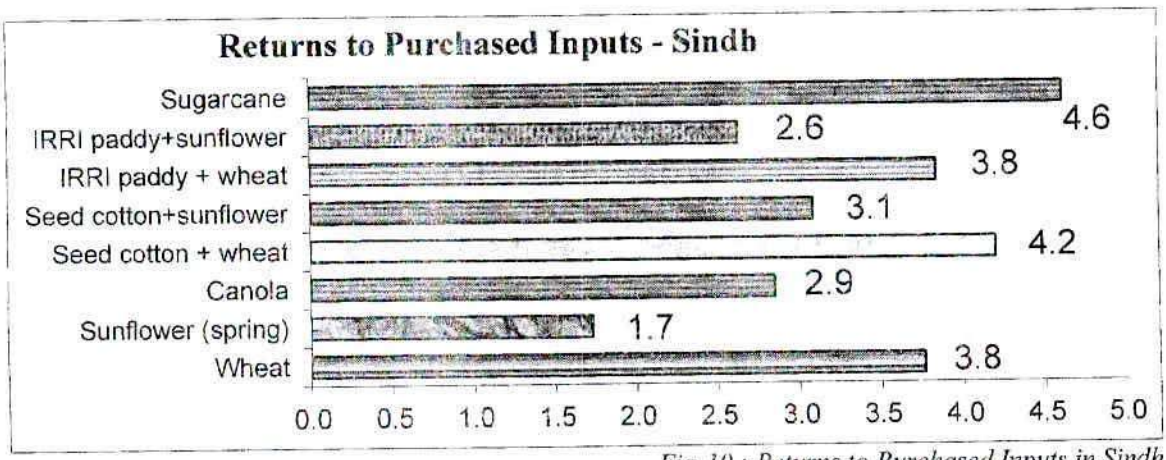


Fig-10 : Returns to Purchased Inputs in Sindh

58. In summary, wheat's performance against competing crops has been presenting a mixed picture, particularly gaining edge over oil-seed crops and also 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.

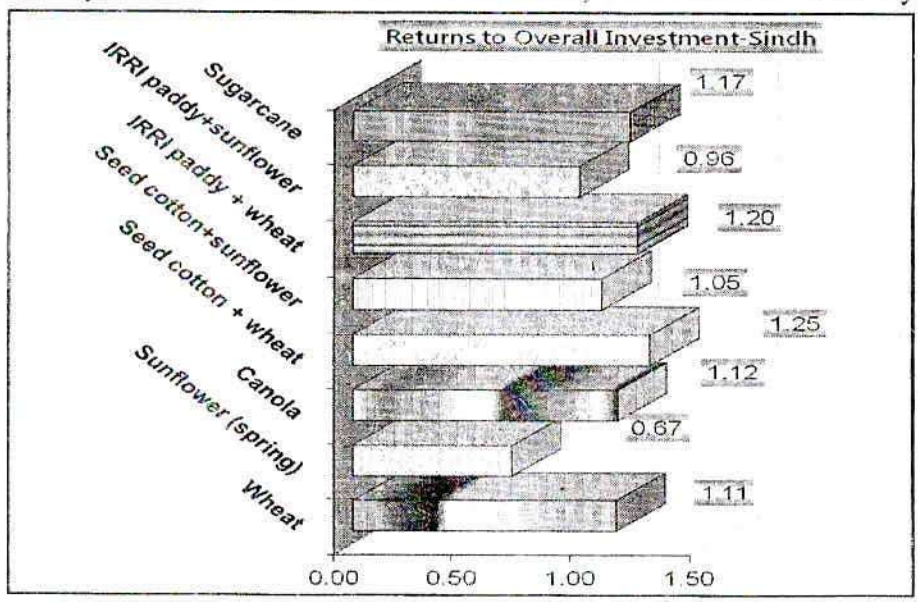


Fig- 11 : Returns to Overall Investment in Sindh

59. This situation indicates that growers are getting a rewarding price for the crop. However, the current situation where huge stocks have piled –up asks for bringing diversification in the cropping pattern and to shift gradually to alternative options and other high value crops including oilseeds. Gaining economic returns in oil-seeds is imperative to pave the way for a sustainable solution to the increasing import bill in edible oil.

4.7 Nominal and Real Prices of Wheat

60. The purchasing power of a certain commodity is influenced by the fluctuations in its price in relation to general price level in the economy. Such variations in the price also affect the welfare and real income of its producers. To ascertain overtime changes in the purchasing power of wheat, the nominal support and market prices of the crop during 2007-08 to 2016-17 have been deflated by the corresponding Consumer Price Index (CPI), the most common measure of inflation in the economy.

4.7.1 At Support Prices of Wheat

61. The analysis in terms of nominal and real support prices for the period 2007-08 to 2017-18 is presented in the Table-17.

62. 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 2014-15 and its consecutively constant in the following three years 2015-16 and 2017-18. 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 2017-18 crop estimated at Rs 593.17 per 40 kgs, is showing a decline by (-5.09) 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 2017-18

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

Source: Pakistan Economic Survey: 2017-18

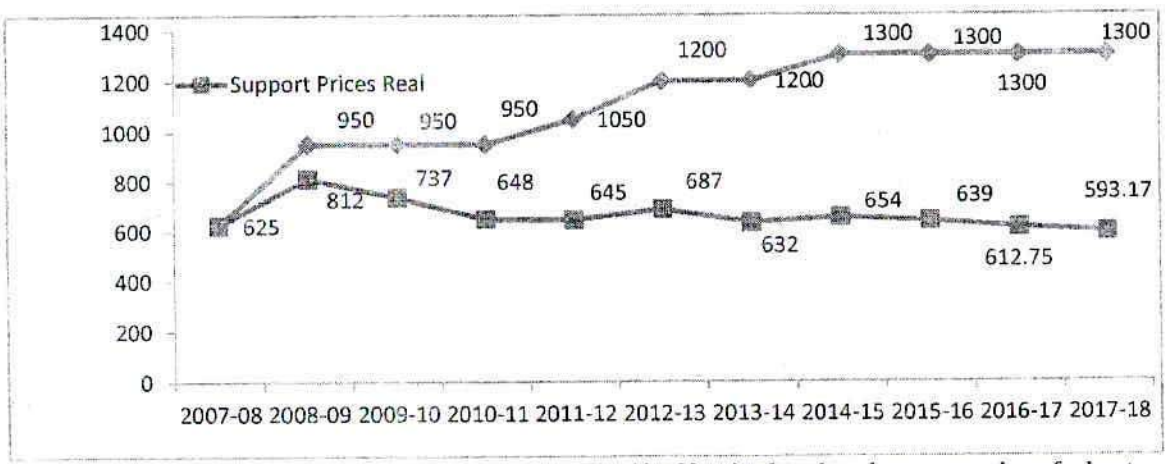


Fig-12: Nominal and real support price of wheat.

63. 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

64. The analysis in terms of real and nominal average market prices for the period 2007-08 to 2017-18 is set out in the Table-18.

Table-18: Nominal and Real Market Prices of Wheat: 2007-08 to 2017-18

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

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).

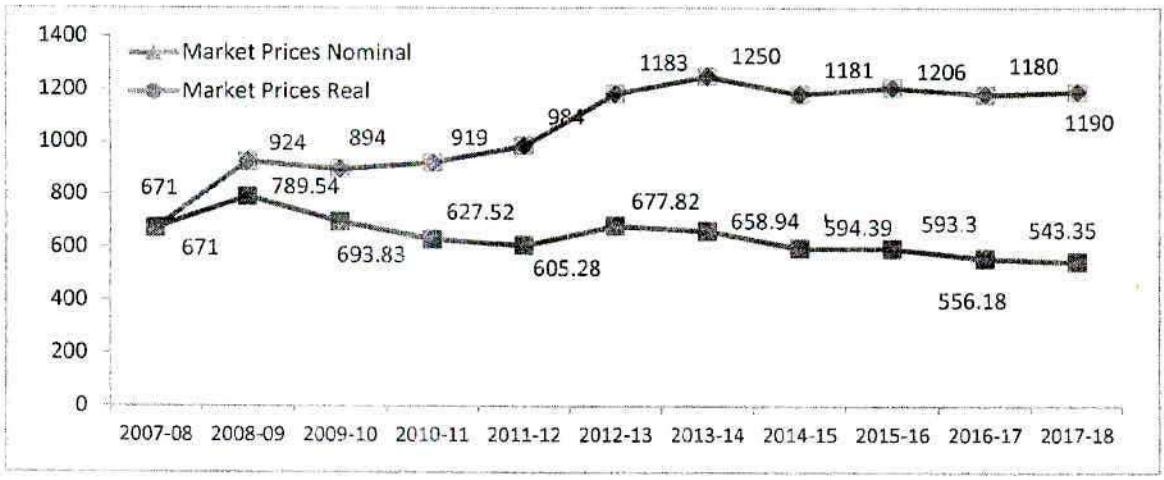


Fig.13: Nominal and real market prices of wheat

65. Market prices of wheat have evidenced a consecutive change during the entire period under review. These prices remained lower than the support price throughout the period except 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 2017-18, the nominal and real value of wheat once again declined. The average nominal market price of wheat has evidenced 77% increase against the base year during the period under review. On the other hand, the real value has receded by (-19 per cent) mainly for the rise in CPI by 219.01% during this period.

66. The real market value of wheat remained below the nominal value during the entire period under study. As depicted in Fig-13, the absolute gap between both the prices widened with increasing rate as the years passed over. This widening gap between the two prices indicates that farmers are on the losing end of the game with context to the real purchasing power of the biggest commodity of the economy.

67. If the market prices had averaged at Rs 1258 per 40 kgs, the farmers would have retained the real purchasing power equivalent to 2016-17 level.

4.8. Economic Efficiency in Wheat Production in Pakistan

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

69. Considerable economic resources are employed in wheat cultivation. Some of these are purchased with cash and are called traded inputs while others are called non-traded inputs because these are not purchased with cash. Traded inputs include seed, fertilizer, machinery, hired labour, tube well water etc while non-traded inputs comprise family labour, management charges, land rent and interest on capital. Economic efficiency of the referred resources used for producing wheat is normally assessed through three indicators. These are Nominal Protection Coefficient (NPC), Effective Protection Coefficient (EPC) and Domestic Resource Cost Coefficient (DRC). Their definitions and estimates are described in detail in the following paragraphs.

4.8.1 Nominal Protection Coefficient (NPC)

70. NPC is the ratio of the market price to the social price of a commodity. It examines the impact of domestic market price of a crop ignoring distortions in the input prices. As a rule of thumb if NPC is greater than one it means that local producers are protected through produce

pricing policy. If it is less than one it implies implicit taxation to growers rather than protection. Implicit taxation to a crop means outflow of resources from that crop.

71. In the following text , estimates of economic efficiency of wheat production in Pakistan are produced and discussed. The estimates are separately narrated from import and export perspective referring them as 'under import scenario' and 'Under export scenario'.

4.8.2 Under import scenario

72. Nominal Protection Coefficients (NPCs) for wheat under import scenario are produced in Table-18. It is evident from the data produced in Table-1 that NPC values for Punjab province remained less than one from 2013 till 2016. Then NPC value increased for next two years exceeding one.

73. Similarly NPC numeric for Sindh province also remained less than one from 2013 till 2016. Then NPC coefficient increased for next two years.

Table – 19: Nominal Protection Coefficients for Wheat in Punjab and Sindh Under Import Scenario

Year	PUNJAB	SINDH
	NPC	NPC
2013-14	0.76	0.77
2014-15	0.86	0.82
2015-16	0.94	0.97
2016-17	1.12	1.12
2017-18	1.03	1.03

4.8.3 Under export scenario

74. It is evident from the data given in Table-2 that NPC value under export scenario always remained greater than one during the period under analysis both in Punjab and Sindh. It indicates that domestic input prices and open market price of wheat do not offer favorable prospects for producing wheat for export from Pakistan. NPC values under export scenario are produced in Table-19 below.

Table -20: Nominal Protection Coefficients for Wheat in Punjab and Sindh Under Export Scenario

Year	NPC (Punjab)	NPC (Sindh)
2013-14	1.14	1.15
2014-15	1.32	1.26
2015-16	1.66	1.71
2016-17	1.33	1.33
2017-18	1.67	1.68

4.8.4 Effective Protection Coefficient (EPC)

75. Unlike 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.

76. Table-20 and Table-4 present EPC estimates for wheat. Table-3 gives EPC values for Punjab and Sindh provinces under import scenario while Table-21 gives EPC values under export scenario for each of the provinces.

Table -21: Effective Protection Coefficients for Wheat in Punjab and Sindh Under Import Scenario

Year	EPC (Punjab)	EPC (Sindh)
2013-14	0.71	0.67
2014-15	0.81	0.70
2015-16	1.07	1.00
2016-17	1.56	1.32
2017-18	1.00	1.15

77. It is observable from data in the above table that EPC coefficients indicate an arrant behaviour during the period under analysis. These fluctuations may be attributed to decline in international price of wheat during 2016-17. International market price of wheat in 2017-18 was US$ 229/ tonne against US$ 197/ tonne in 2016-17. As social prices of wheat and costs of 'production inputs' are based on import and export price of wheat i.e international price, accordingly EPC estimates also changed.

Table -22: Effective Protection Coefficients for Wheat in Punjab and Sindh Under Export Scenario

Year	EPC (Punjab)	EPC (Sindh)
2013-14	1.39	1.25
2014-15	1.88	1.55
2015-16	5.09	5.21
2016-17	2.29	1.87
2017-18	2.00	3.63

78. It is observed from Table-4 that under export scenario both for Punjab and Sindh EPC values remained above one which is suggestive of Pakistan's incapability of wheat production for export purposes.

4.8.5 Domestic Resource Cost Coefficient (DRC)

79. DRC is the ratio of the social cost of domestic factors to value added at social prices. If DRC is less than one it implies comparative advantage as the domestic production can save foreign exchange at costs less than the corresponding cost of imports. When DRC is greater than one, it indicates 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-23. Detailed data on private and social profitability for the study period are produced in Annexes-XI to XII.

Table -23 Domestic Resource Cost Coefficient (DRC) for Wheat in Punjab and Sindh Provinces

Year [1]	Under import situation		Under export situation	
	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

80. It is noticeable from the data in Table-5 that under import scenario Domestic Resource Cost Coefficients (DRCs) most of the time has been 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 costto avoid import of wheat. There-fore, it would be an economic suggestion to invest in wheat production at home rather to import.

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

4.9 Producer Prices of Wheat in Selected Countries

82. Wheat is widely grown all over the world. Major wheat producing countries provide to their growers a variety of incentives including the minimum guaranteed prices. For a comparative analysis of the producer prices in Pakistan with those of other countries, the relevant information has been obtained through internet.

83. The data on the minimum guaranteed producer prices of wheat for 2015-16 to 2017-18 crops in major wheat producing countries are presented in Table-24.

84. While comparing the producer prices of a commodity across the globe, following major factors are being kept in view:

i) Quality of the produce
ii) Structure of input prices
iii) Policy objectives
iv) Fluctuations in exchange rates
v) Stage of agriculture development
vi) Adjustment payments
vii) Country-specific commodity programmes
viii) Counter-cyclical payments

85 The producer price of wheat in China remained higher than support price of wheat in Pakistan and all other countries during the last three years period. In Australia, premium white wheat Net Pool Return to Rs.983.4 equivalent was lower by 43.6 per cent while the minimum support price of wheat in India Rs.112.9 equivalent was lower than the support price of wheat in Pakistan by over 18 per cent. The average farm price of US HRW wheat was also less by Rs.59 per cent than the minimum support price in Pakistan.

Table-24: Support Price of Wheat in Selected Countries

Country	2015-16		2016-17		2017-18	
	USD/Ton	Rs/40 Kgs	USD/Ton	Rs/40 Kgs	USD/Ton	Rs/40 Kgs
Australia	257.09	1,071.9	232.20	972.4	229.70	983.4
Brazil	185.50	773.4	159.26	667.0	160.03	685.2
China	348.61	1,453.5	344.00	1,440.6	329.89	1,412.4
India	230.71	961.9	239.13	1,001.4	257.60	1,102.9
USA	187.20	780.5	153.54	643.0	190.90	817.3
Pakistan	311.80	1,300.0	310.43	1,300.0	303.64	1,300.0

Note: Exchange rates are; 1 US$=PKR 107.03 for 2017-18, 104.67 for 2016-17 and 104.23 for 2015-16.

N.A: Not available.

Sources: http://www.igc.int/en/memers-site/markets/igc-markets news.aspx.
For Australia, http://www.awb.com.au.
For Brazil, http://www.fao.org
For India http://www.pib.nic.in/pressreleasedetail.aspx?
For USA, http://www.usda.gov/oce/commodity/wasde/latest.pdf
For China, Announced on 21 October 2016.
http://www.ndrc.gov.cn/gzdt/201811/t20181116-919858.html.
Prices do not include an allowance for loans outstanding and government purchases.
For Pakistan, M/o NFS&R.
For Exchange Rates, Economic Survey of Pakistan 2017-18.

86. The Figure-14 reveals that except for India, the prices in terms of USD have slashed down over the three-year period, in all the countries reviewed. However, in terms of PKR, the prices have fluctuated in USA but remained unchanged in Pakistan, while declined in Australia, China and Brazil.

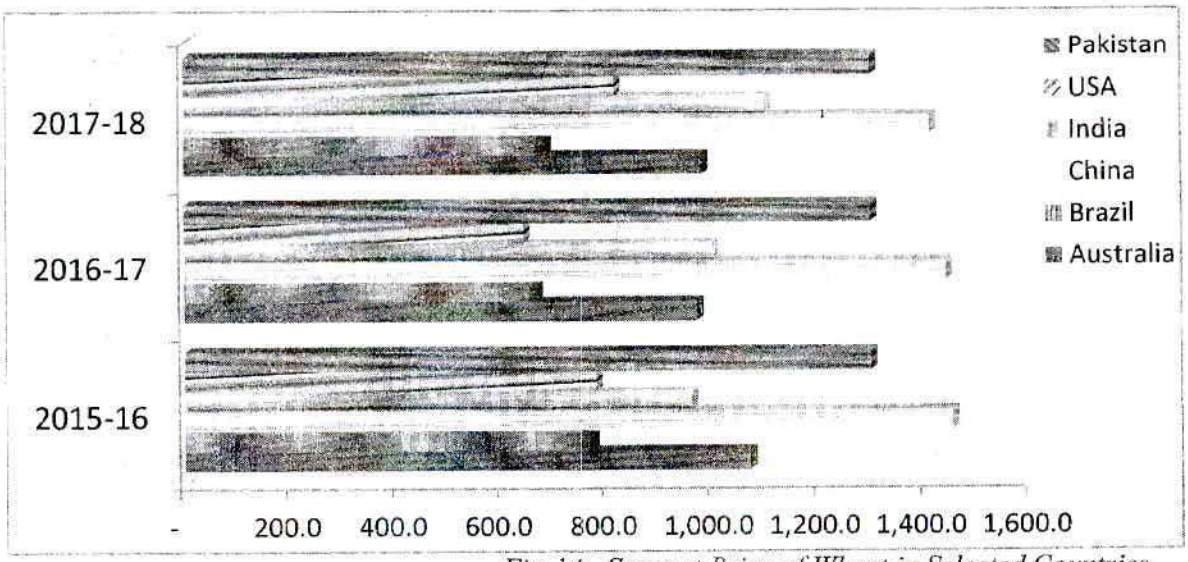


Fig-14: Support Price of Wheat in Selected Countries

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

87. 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

88. The Pakistan Bureau of Statistics (PBS) has estimated changes in CPI as a result of increase in support price of wheat over the existing level of Rs 1300 per 40 kgs in 2017-18. 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-25.

Table-25: Impact of Increase in Wheat Prices on CPI and Average Household Expenditure

Wheat price	Rise in CPI	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	0.0100	62	392
1350	0.0325	125	789
1375	0.0551	187	1180
1400	0.0777	250	1578
1425	0.1003	312	1969
1450	0.1228	375	2367

Sources: 1. Pakistan Bureau of Statistics (PBS), Islamabad.
2. Annex-XIV.
* Existing price for 2018-19 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 June 2018

89. It is evident from the above Table that increase of Rs 25 per 40 kgs over the existing support price of wheat is expected to raise the CPI by 0.0100 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 0.325, 0.0777 and 0.1228 per cent, respectively.

90. 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

91. According to the Household Integrated Economic Survey (HIES) 2015-16 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.

92. 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 2017-18 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

93. Annual meeting of the API Committee on wheat was held on 1st August 2018. The meeting was presided by the Secretary, M/o NFS&R, 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.

94. 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.

95. 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

96. 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-26).

Table-26: Parity between Market Prices of Fertilizers and Wheat: 2007-08 to 2017-18

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 -----	
2007-08	23200	43750	15675	1.48	2.79
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

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.

97. 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 2007-08 to 2017-18 (Table-24).

98. 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 1.84 units of wheat were required to buy one unit of N fertilizer during 2017-18.

99. The parity ratio for P-wheat prices generally hovered around 2.79 uptil 2007-08. It jumped to 5.21 in 2008-09 due to hike in price of P fertilizer as a result of global energy crisis. 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 2017-18 has relatively improved over the previous year as 1.16 units of wheat were required to buy one unit of P fertilizer, a change of (-56 per cent).

7. MAJOR WHEAT VARIETIES AND THEIR YIELD POTENTIAL

100. 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.

101. 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

102. Wheat is the most important worldwide popular cereal crop covers the acreage that no other cereal crop can ever get. Thus production in every country is equally important to sustain the demands of the people in that country. Some of the countries have a lot of surplus production, which help in generating higher revenues. Pakistan has great area to have perfect wheat cultivation. In Pakistan, this is the most used staple crop for making dishes. Since a major part of its economy relate to the agriculture the part of the production is really important. The country produces many other crops and about 26.67 million metric tonnes of wheat every year.

Mostly, the wheat that is sown is for human consumption. Global wheat during 2017 occupied an area of around 218.54 million hectares with a total production of 771.72 million tonnes. The world top 29 producing countries contribute 92.56 per cent of total area and 92.72 per cent of total production as narrated in Table-27-28.

Table-27: Wheat Area in Major Wheat Producing Countries Of the World:2017 CROP

S.No.	Country	Area in million hectares	per cent share in world area
1	India	30.6000	14.00
2	Russian Federation	27.5174	12.59
3	China, mainland	24.5080	11.21
4	United States of America	15.2107	6.96
5	Australia	12.1912	5.58
6	Kazakhstan	11.9120	5.45
7	Canada	9.0360	4.13
8	**Pakistan**	**8.9720**	**4.11**
9	Turkey	7.6623	3.51
10	Iran (Islamic Republic of)	6.7000	3.07
11	Ukraine	6.3774	2.92
12	Argentina	5.5664	2.55
13	France	5.4647	2.50
14	Morocco	3.3842	1.55
15	Germany	3.2026	1.47
16	Poland	2.3919	1.09
17	Algeria	2.1184	0.97
18	Afghanistan	2.1044	0.96
19	Spain	2.0627	0.94
20	Romania	2.0529	0.94
21	Brazil	1.8959	0.87
22	Italy	1.8066	0.83
23	United Kingdom	1.7920	0.82
24	Ethiopia	1.7175	0.79
25	Uzbekistan	1.4083	0.64
26	Egypt	1.3428	0.61
27	Bulgaria	1.1445	0.52
28	Syrian Arab Republic	1.1000	0.50
29	Iraq	1.0475	0.48
	Total Of 29 Country	**202.29**	92.56
	Total World Area	**218.540**	100.00

Source:FAO Production Year Book 2017

103. In terms of wheat area India is on the top with 30.60 million hectares followed by Russian Federation with 27.517 million hectares and China, mainland with 24.508 million hectares Pakistan lies at 8th number in this regard with 4 per cent global share.

104. In terms of wheat production, China, mainland is on the top with 134.33 million tonnes, India 98.51 million tonnes followed by Russian Federation with 85.86 and USA 47.37 million tonnes. However, Pakistan stands at 8th in wheat production of the world. (Table-28).

Table-28: Wheat Production in Major Wheat Producing Countries Of the World:2017 Crop

S.No.	Country	Production in Million tonnes	per cent share in world Production
1	China, mainland	134.33	17.41
2	India	98.51	12.77
3	Russian Federation	85.86	11.13
4	United States of America	47.37	6.14
5	France	36.92	4.78
6	Australia	31.82	4.12
7	Canada	29.98	3.89
8	**Pakistan**	**26.67**	**3.46**
9	Ukraine	26.21	3.40
10	Germany	24.48	3.17
11	Turkey	21.50	2.79
12	Argentina	18.40	2.38
13	United Kingdom	14.84	1.92
14	Kazakhstan	14.80	1.92
15	Iran (Islamic Republic of)	14.00	1.81
16	Poland	11.67	1.51
17	Romania	10.03	1.30
18	Egypt	8.80	1.14
19	Morocco	7.09	0.92
20	Italy	6.97	0.90
21	Bulgaria	6.13	0.79
22	Uzbekistan	6.08	0.79
23	Hungary	5.24	0.68
24	Denmark	4.83	0.63
25	Ethiopia	4.83	0.63
26	Spain	4.83	0.63
27	Czechia	4.72	0.61
28	Brazil	4.32	0.56
29	Afghanistan	4.28	0.55
	Total Of 29 Country	**715.53**	92.72
	Total World Production	**771.72**	100.00

Source: FAO Production Year Book 2017

105. In terms of yield per hectare, Ireland lies at the top with 10174 kgs per hectare followed by New Zealand 9864, Mali 8927 kgs and Netherlands with 9094 kgs per hectare. It is an alarming situation that Pakistan ranks at **59th** in terms of yield at 2973 kgs per hectare while India lies at **51st** position with 3219 kgs per hectare. However, the world average yield of wheat is 3531 kgs per hectare (Annex- XIII)

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

106. During 2009-10 to 2017-18, wheat production has ranged between 23.31 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 20.53 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 902 to Rs 1250 per 40 kgs during the period under review in Table-29.

Table-29: Production, Procurement, Market and Support Prices of Wheat: 2009-10 to 2017-18

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----	
2009-10	23.31	6.71	28.00	950	902
2010-11	25.21	6.24	24.75	950	905
2011-12	23.47	9.07	38.86	1050	949
2012-13	24.20	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	26.67	6.51	24.46	1300	1196
2017-18	25.08	6.10	23.91	1300	1186

- **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

107. The Federal Government fixed the wheat procurement target at 6100 thousand tonnes for 2017-18 crop to be implemented by the Provincial Food Departments and PASSCO. Agency-wise targets with their achievements in provinces are shown in Table-30.

Table-30 : Procurement Targets and Achievements: 2017-18 Wheat Crop

Province/agency	Target	Achievement	Achievement as per cent of target
	----Million tones -----		Per cent
Pakistan	**6.100**	**5.989**	**98.18**
- Provincial Food Departments	5.200	5.089	97.87
- PASSCO	0.900	0.900	100.00
Punjab	**4.158**	**4.381**	**105.36**
- Food Department	3.400	3.623	106.56
- PASSCO	0.758	0.758	100.00
Sindh	**1.080**	**1.508**	**139.63**
- Food Department	1.400	1.400	100.00
- PASSCO	0.108	0.108	100.00
K.P.K	**0300**	**0.066**	**22.00**
Food Department	0.300	0.066	22.00
PASSCO	-	-	-
Balochistan	**0.134**	**0.034**	**25.37**
Food Department	0.100	0.00	0.00
PASSCO	0.034	0.34	100.00

Source: PASSCO and respective provincial Food Departments.

108. It may be seen from Table-23 that procurement agencies have achieved 98.18 percent of the target fixed by the Government, Provincial Food Department, collectively achieved 97.87 per cent by the Food Departments and 100 per cent by PASSCO. The provincial Food Department of Punjab has surpassed its target by 106.56 percent.

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Officers

1.	Mr. Abdul Karim	Chief **(Coordinator)**
2.	Mr. Muhammad Ejaz Ahmed	Chief
3.	Mr. Hussain Ali Turi	Deputy Chief
4.	Mr. Muhammad Amin	Deputy Chief
5.	Syed Riaz Ali Shah	Assistant Chief
6.	Ms Shagufta Tasleem	Research Officer**(Dy. Coord)**
7.	Ms Kanwal Saleem Mehr	Research Officer

Staff

8.	Mr. Hafeez Ahmed	Assistant Private Secretary **(Composed the Report)**
9.	Mr. Shamir Ahmed	Assistant Private Secretary
10.	Mr. Muhammad Naeem	Machine Operator

Dr. Javed Humayun
Senior Joint Secretary/
Director General
M/o NFS&R

Annex-I

AREA,YIELD AND PRODUCTION OF WHEAT : 2007-08 TO 2017-18

Year	Punjab	Sindh	KPK	Balochistan	Pakistan
AREA		---------- Thousand hectares ----------			
2007-08	6402.0	989.9	747.4	402.5	8541.8
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
YIELD		---------- kgs per hectare ----------			
2007-08	2438	3446	1434	2158	2454
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
PRODUCTION		---------- Thousand tonnes ----------			
2007-08	15607.0	3411.4	1071.8	868.6	20958.8
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

Sources:

1. **For 2007-08 to 2015-16: Agricultural Statistics of Pakistan, 2015-16 NFS&R, Islamabad.**
2. **For 2016-17: Final estimate provided by concerned Provincial Agriculture Departments.**
3. **For 2017-18: Final estimate provided by concerned Provincial Agriculture Departments.**

Annex-I A

AREA,YIELD AND PRODUCTION OF WHEAT : 2007-08 TO 2017-18

Year	Punjab	Sindh	KPK	Balochistan	Pakistan
AREA		---------- Thousand acres ----------			
2007-08	15820.0	2446.1	1846.9	994.6	21107.6
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
YIELD		---------- kgs per acre ----------			
2007-08	987	1395	580	873	993
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
PRODUCTION		---------- Thousand tonnes ----------			
2007-08	15607.0	3411.4	1071.8	868.6	20958.8
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

Source:

1. For 2007-08 to 2015-16: Agricultural Statistics of Pakistan, 2015-16 NFS&R, Islamabad.
2. For 2016-17: Final estimate provided by concerned Provincial Agriculture Departments.
3. For 2017-18: Final estimate provided by concerned Provincial Agriculture Departments.

Annex-II

AREA, YIELD AND PRODUCTION OF WHEAT BY PROVINCE AND BY IRRIGATION: 2015-16 TO 2017-18

Country/ Province	Area				Yield per hectare				Production			
	2015-16	2016-17	2017-18	Change over last year	2015-16	2016-17	2017-18	Change over last year	2015-16	2016-17	2017-18	Change over last year
	000 ha				Kgs				000 tonnes			
					IRRIGATED							
PAKISTAN	8035.1	7946.1	7802.3	-1.81	2971	3184	3043	-4.42	23870.9	25298.4	23742.1	-6.15
PUNJAB	6205.7	6070.2	6005.8	-1.06	2977	3254	3080	-5.35	18475.80	19752.9	18498.4	-6.35
SINDH	1114.9	1130.1	1050.8	-7.02	3378	3391	3392	0.02	3766.00	3832.4	3564.1	-7.00
KPK	343.0	362.0	360.4	-0.44	2247	2191	2094	-4.42	770.80	793.0	754.6	-4.84
BALOCHISTAN	371.5	383.8	385.3	0.39	2310	2397	2401	0.14	858.30	920.1	925.0	0.53
					UNIRRIGATED							
PAKISTAN	1188.50	1026.3	995.0	-3.05	1483	1340	1341	0.06	1762.1	1375.3	1334.1	-3.00
PUNJAB	708.20	590.0	554.0	-6.10	1484	1209	1228	1.53	1050.90	713.5	680.2	-4.67
SINDH	39.60	39.4	38.8	-1.52	1732	1980	1943	-1.84	68.60	78.0	75.4	-3.33
KPK	429.30	386.6	393.0	1.66	1467	1480	1446	-2.32	629.60	572.1	568.1	-0.70
BALOCHISTAN	11.40	10.3	9.2	-10.68	1140	1136	1130	-0.48	13.00	11.7	10.4	-11.11
					TOTAL							
PAKISTAN	9223.6	8972.4	8797.3	-1.95	2779	2973	2850	-4.12	25633.0	26673.7	25076.2	-5.99
PUNJAB	6913.9	6660.2	6559.8	-1.51	2824	3073	2924	-4.86	19526.7	20466.4	19178.6	-6.29
SINDH	1154.5	1169.5	1089.6	-6.83	3321	3344	3340	-0.10	3834.6	3910.4	3639.5	-6.93
KPK	772.3	748.6	753.4	0.64	1813	1824	1756	-3.72	1400.4	1365.1	1322.7	-3.11
BALOCHISTAN	382.9	394.1	394.5	0.10	2276	2364	2371	0.28	871.3	931.8	935.4	0.39

Sources:
1. For 2007-08 to 2015-16: Agricultural Statistics of Pakistan, 2015-16 NFS&R, Islamabad.
2. For 2016-17: Final estimate provided by concerned Provincial Agriculture Departments.
3. For 2017-18: Final estimate provided by concerned Provincial Agriculture Departments.

DISTRICT- WISE AREA, YIELD AND PRODUCTION OF WHEAT
AVERAGE OF 2015-16 TO 2017-18

Annex-III

Area: 000 ha
Productio 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	371.96	1161.21	4.50	3121.82	1	D.I.Khan	43.96	91.83	0.36	2089.08
2	Bahawalpur	291.82	958.47	3.72	3284.40	2	Swat	47.35	88.29	0.34	1864.85
3	R.Y.Khan	287.29	929.09	3.60	3234.02	3	Mansehra	32.92	84.17	0.33	2556.52
4	Faisalabad	284.96	917.81	3.56	3220.85	4	Mardan	45.25	84.09	0.33	1858.42
5	Muzaffargarh	293.84	899.84	3.49	3062.32	5	Charsadda	30.06	78.16	0.30	2600.35
6	Jhang	288.58	886.67	3.44	3072.47	6	Swabi	40.51	73.98	0.29	1826.00
7	Veheri	258.10	845.75	3.28	3276.83	7	Bannu	28.88	63.80	0.25	2209.28
8	Lodhran	202.92	727.62	2.82	3585.77	8	Dir Lower	32.55	63.05	0.24	1936.85
9	Khanewal	199.95	695.54	2.70	3478.55	9	Shanlapar	28.71	60.04	0.23	2091.45
10	Gujranwala	223.18	676.41	2.62	3030.73	10	Bunir	41.92	59.44	0.23	1417.86
11	Okara	203.05	667.18	2.59	3285.85	11	Peshawar	28.96	59.42	0.23	2052.05
12	Sheikhupura	214.87	663.33	2.57	3087.19	12	Haripur	30.27	50.22	0.19	1658.87
13	Layyah	228.82	615.63	2.39	2691.33	13	Dir Uper	23.76	47.61	0.18	2003.53
14	Multan	188.01	597.97	2.32	3180.42	14	Nowshera	21.81	46.14	0.18	2115.67
15	T.T.Singh	165.05	568.18	2.20	3442.49	15	Abbottabad	22.60	41.66	0.16	1843.04
16	Rajanpur	177.39	556.93	2.16	3139.66	16	Hangu	21.40	40.13	0.15	1875.27
17	D.G.Khan	186.25	555.44	2.15	2982.28	17	Kohat	21.21	38.89	0.15	1823.93
18	Sargodha	204.26	549.11	2.13	2688.33	18	Tank	22.08	37.23	0.14	1686.39
19	Sialkot	205.05	531.63	2.06	2592.65	19	Chitral	17.12	34.24	0.13	2000.72
20	Hafizabad	156.20	529.72	2.05	3391.35	20	Malakand	18.10	25.70	0.10	1419.52
21	Pakpattan	151.58	509.79	1.98	3363.22	21	Lakki Marwat	18.74	25.01	0.10	1334.64
22	Kasur	163.04	506.81	1.96	3108.57	22	Karak	21.72	22.69	0.09	1044.88
23	Sahiwal	151.87	497.46	1.93	3275.66	23	Khyber AG.	19.56	20.83	0.08	1064.93
24	Bhakkar	169.49	436.42	1.69	2574.85	24	Bajour AG.	23.51	18.58	0.07	790.26
25	M.B.Din	148.40	426.48	1.65	2873.91	25	Kurram AG.	12.24	18.16	0.07	1483.58
26	Nankana Sahib	121.67	404.96	1.57	3328.27	26	Battagram	8.51	16.89	0.07	1985.15
27	Mianwali	165.57	390.34	1.51	2357.49	27	Orakzai AG	10.06	15.55	0.06	1546.44
28	Narowal	144.52	348.95	1.35	2414.65	28	Kohistan	10.01	13.43	0.05	1341.97
29	Chiniot	108.66	326.14	1.26	3001.42	29	N.Waziristan	5.70	8.46	0.03	1485.37
30	Gujrat	151.49	282.28	1.09	1863.44	30	S.Waziristan	7.35	8.41	0.03	1144.89
31	Attock	165.88	254.46	0.99	1534.05	31	Mohmand AG.	5.10	6.89	0.03	1351.12
32	Khushab	93.87	191.02	0.74	2034.90	32	F.R.Peshawar	4.46	6.05	0.02	1355.82
33	Lahore	55.33	174.31	0.68	3150.18	33	F.R.D.I.Khan	5.58	5.73	0.02	1027.79
34	Chakwal	119.68	168.80	0.65	1410.44	34	F.R.Bannu	3.94	5.27	0.02	1339.69
35	Rawalpindi	103.30	153.09	0.59	1481.93	35	F.R.Kohat	2.23	2.92	0.01	1308.43
36	Jhelum	54.54	103.09	0.40	1890.16						
37	Islamabad	10.88	15.71	0.06	1444.24						
	Sub Total	6711.32	19723.85	76.47	2938.89		Sub Total	768.11	1362.77	5.28	1797.69
	SINDH						BOLUCHISTAN				
1	N.Feroze	106.41	398.28	1.54	3742.91	1	Nasirabad	77.58	208.98	0.81	2693.61
2	Khairpur	104.21	397.11	1.54	3810.69	2	Jaffarabad	71.38	192.09	0.74	2691.19
3	Ghotki	106.49	384.72	1.49	3612.75	3	Jhal Magsi	51.83	127.69	0.50	2463.64
4	Sanghar	107.20	356.13	1.38	3321.96	4	Khuzdar	43.71	89.31	0.35	2043.16
5	Sh. Benazirabad	86.82	336.10	1.30	3871.06	5	Dera Bughti	16.92	33.58	0.13	1984.38
6	Dadu	74.82	238.88	0.93	3192.83	6	Awaran	14.10	26.75	0.10	1897.57
7	Mirpurkhas	58.67	183.36	0.71	3125.40	7	Sibi	12.01	25.47	0.10	2119.78
8	Sukkur	50.36	177.81	0.69	3529.43	8	Lasbela	11.29	22.89	0.09	2027.40
9	Matiari	40.53	157.80	0.61	3893.69	9	Barkhan	10.98	22.20	0.09	2022.53
10	Shadadkot	53.36	156.51	0.61	2933.04	10	Loralai	9.46	22.01	0.09	2326.83
11	Larkana	50.31	147.33	0.57	2928.51	11	Killa Saifullah	9.57	18.70	0.07	1953.92
12	Jamshoro	36.16	110.76	0.43	3063.01	12	Kachhi	7.78	17.93	0.07	2303.12
13	Shikarpur	39.25	110.60	0.43	2817.50	13	Noushki	6.11	12.47	0.05	2040.47
14	Umerkot	38.04	109.26	0.42	2872.53	14	Kharan	6.28	11.90	0.05	1894.33
15	Tando Allahyar	31.79	105.81	0.41	3328.25	15	Kalat	5.03	10.52	0.04	2091.69
16	Kashmore	35.35	95.66	0.37	2706.29	16	Mastung	3.97	8.02	0.03	2019.64
17	Badin	36.06	94.95	0.37	2632.92	17	Chaghi	3.91	7.58	0.03	1936.39
18	Jacobabad	31.41	76.47	0.30	2434.81	18	Turbat	3.54	7.51	0.03	2121.44
19	Thatta	18.17	56.61	0.22	3116.31	19	Panjgoor	3.41	7.16	0.03	2101.26
20	Hyderabad	14.59	49.54	0.19	3395.49	20	Pishin	3.31	6.55	0.03	1979.65
21	Tando Muhammad	14.53	41.67	0.16	2867.72	21	Washuk	3.33	6.02	0.02	1809.01
22	Tharparkar	2.07	5.94	0.02	2868.09	22	Quetta	2.57	5.32	0.02	2073.03
23	Karachi	1.27	3.53	0.01	2782.77	23	Zhob	3.10	4.94	0.02	1593.72
						24	Kohlu	2.44	4.48	0.02	1832.47
						25	Harnai	1.78	3.75	0.01	2110.09
						26	K.Abdullah	1.92	3.74	0.01	1951.51
						27	Musa Khel	1.69	2.84	0.01	1676.19
						28	Sherani	1.08	1.80	0.01	1664.41
						29	Ziarat	0.40	0.66	0.00	1636.74
	Sub Total	1137.89	3794.84	14.71	3334.99		Sub Total	390.48	912.83	3.54	2337.71
							Pak Total	8997.79	25794.29	100.00	2866.74

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 / Consumption year	2015-16 / 2016-17	2016-17 / 2017-18	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 betw een the production of Pakistan and that of AJ&K and GB

Sources: 1. For carryover stocks: PASSCO and Provincial Food Departments.
2. For Population Economic Survey of Pakistan.
3. For Afghan reguges: Ministry of Kashmir Affairs and Northern Areas and States and Frontier Regions, Government of Pakistan, Islamabad.

Annex-V

INTERNATIONAL PRICES OF US NO-2 HARD RED WINTER AND SDFT RED WINTER WHEAT
2008-09 TO 2018-19

Year (July - June)	Month	HRW No-2	SRW No-2	Difference between HRW/SRW	
		--------US$ per tonne---------		US$/tonne	%age
2007-08		361	311	50	16.08
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		229	188	41	21.81
2018-19		**242**	**219**	22	10.22
	July	235			
	August	250	226	24	10.62
	September	241	215	26	12.09
	October	241	217		

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	2018-19 Jul-Sep		2017-18		2015-16 to 2017-18	
		HRW	SRW	HRW	SRW	HRW	SRW
		US $ per tonne					
1	Fob(Gulf) price assuming Fob (Karachi) price	244.00	224.00	229.00	188.00	212.00	184.00
2	Exchange rate	124.00	124.00	124.00	124.00	124.00	124.00
3	Fob(Gulf) price assuming Fob (Karachi) price in Pak Rupees	30256	27776	28396	23312	26288	22816
4	Incidental charges: (items i to xi)	5280	5185	5209	5014	5128	4995
	i) Expenses from procurement centre to Multan	300	300	300	300	300	300
	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	454	417	426	350	394	342
	viii Insurance charges at port 1 % for one month	25	23	24	19	22	19
	ix) Bank commission & charges 0.25 %	76	69	71	58	66	57
	x) Mark up @ 6.00% per annum for one month	605	556	568	466	526	456
	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)	24976	22591	23187	18298	21160	17821
		Rs per 40kgs					
6	Export parity price at procurement center level	999	904	927	732	846	713

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	2017-18 Jul Nov		2016-17		2014-15 to 2016-17	
		HRW	SRW	HRW	SRW	HRW	SRW
		US $ per tonne					
1	Average Fob(Gulf) price	244.00	224.00	229.00	188.00	212.00	184.00
2	Freight charges from Gulf port to Karachi	34.00	34.00	34.00	34.00	34.00	34.00
3	Average c&f (Karachi) price in US $	278.00	258.00	263.00	222.00	246.00	218.00
		Rs per tonne					
4	Exchange rate	124.00	124.00	124.00	124.00	124.00	124.00
5	Average c&f (Karachi) price in Pak Rupees	34472	31992	32612	27528	30504	27032
6	Marine insurance charges @0.23% of c & F cost	79	74	75	63	70	62
7	Lc opening charges @0.4% of c&f cost	138	128	130	110	122	108
8	Stevedoring, clearing, handling, wharfage, weightment, inland insurance, survey & pre-shipment charges and provision for unforeseen losses	651	651	651	651	651	651
9	TCP commission @ 2 % of c&f cost as per ECC	689	640	652	551	610	541
10	Bank markup @ 6.00 % per annum for 30 days	689	640	652	551	610	541
11	**Landed cost (item 3 to 8) at Karachi**	36719	34124	34773	29454	32567	28935
12	Transport cost from Karachi to Multan	2800	2800	2800	2800	2800	2800
13	Expences from procurement center to Multan	300	300	300	300	300	300
14	Import parity price at procurement center level	39219	36624	37273	31954	35067	31435
		Rs per 40 kgs					
15	Import parity prices of wheat						
	i) If consumed at Multan	1569	1465	1491	1278	1403	1257
	ii) If consumed at Karachi	1469	1365	1391	1178	1303	1157

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 FARMERS' COST OF PRODUCTION ESTIMATES OF WHEAT
IN THE PUNJAB: 2017-18 AND 2018-19 CROPS

S. No.	Operations / Inputs	Average No. of oprs/units/ acre	2017-18 crop		2018-19 crop		Change in 2018-19 over 2017-18
			Cost per unit	Cost per acre	Cost per unit	Cost per acre	
1	2	3	6	7 = 3 * 6	6	7 = 3 * 6	8 =7-5
1	**Land preparation:**						
	1.1 Rotavator/disc plough	1.250	1200.00	1500.00	1200.00	1500.00	0.00
	1.2 Ploughing	2.696	600.00	1617.60	600.00	1617.60	0.00
	1.3 Ploughing & planking	0.714	600.00	428.40	600.00	428.40	0.00
	1.4 Planking	2.000	300.00	600.00	300.00	600.00	0.00
	1.5 Levelling (hrs)	1.000	600.00	600.00	600.00	600.00	0.00
2	**Seed and sowing operations:**						
	2.1 Seed used (kgs)	51.161	28.75	1470.88	30.00	1534.83	63.95
	2.2. Tractor drilling (M.days)	0.166					
	2.3 Labour for seed broadcasting (m.hrs)	1.455	50.00	72.75	50.00	72.75	0.00
	2.4 Ploughing in case of broadcasting	2.000	600.00	1200.00	600.00	1200.00	0.00
	2.5 Planking in case of broadcasting	1.000	300.00	300.00	300.00	300.00	0.00
3	**Bund making:**						
	3.1 Manual (m.hrs)	1.000	50.00	50.00	50.00	50.00	0.00
	3.2 tractor (hrs)	0.250	600.00	150.00	600.00	150.00	0.00
4	**Weedicides**	1.000	658.00	658.00	700.00	700.00	42.00
5	**Irrigation: * (Nos)**						
	5.1 Canal	1.900	-	50.00	-	50.00	0.00
	5.2 Private tubewell (Rs/hr)	3.696	500.00	1848.00	550.00	2032.80	184.80
	5.3 Mixed	0.230	500.00	115.00	550.00	126.50	11.50
6	**Labour for irrigation and water course Cleaning (Rs)**			900.00		950.00	
7	**Farm Yard Manure (No. of Trolleys)**	0.250	2500.00	250.00	2500.00	625.00	375.00
8	**Fertilizers: (bags)**						
	8.1 DAP	1.000	2350.00	2350.00	3150.00	3150.00	800.00
	8.2 Urea	2.000	1350.00	2700.00	1600.00	3200.00	500.00
	8.3 NP	0.079	1900.00	150.10	2600.00	205.40	55.30
	8.4 CAN	0.240	870.00	208.80	870.00	208.80	0.00
	8.5 Transport and application	3.319	70.00	232.33	70.00	232.33	0.00
9	Mark up on investment on item 1to 8 excluding item 5(1) @15 % per annum for 6 months	1044.1		1044.10	1558.75	1558.80	514.70
10	Harvesting charges (40 kgs/acre)	3.036	1150.00	3491.40	1200.00	3643.20	151.80
11	11.1 Threshing (Kgs/40 kgs)	2.407	1150.00	2768.05	1200.00	2888.40	120.35
	11.2 M.days	1.810	400.00	724.00	400.00	724.00	0.00
12	Land rent for 6 months	0.500	30000.00	15000.00	30000.00	15000.00	0.00
13	Average weighted land tax @ Rs 200/acre/annum for 8 months	0.500	132.00	66.00	132.00	66.00	0.00
14	Management charges for 6 months	-	-	1343.00		1477.30	134.30
15	Total cost per acre	-	-	41888.41		44892.11	2953.70
16	Value of wheat bhoosa	-	-	7500.00		7500.00	0.00
17	Net cultivation cost (item 15-16)	-	-	34388.41		37392.11	2953.70
18	Yield per acre (kgs)	-	-	1200.00		1200.00	0.00
19	Cost of production at farm level. (Rs/40 kgs)			1146.28		1246.40	100.12
20	Marketing cost (Rs/40 kgs)	-	-	37.90		38.00	0.10
21	Cost of production at market/procurement centre (Rs/40 kgs)						
	21.1 Including land rent	-	-	1184.18		1284.40	100.22
	21.2 Excluding land rent	-	-	684.18		784.40	100.22

Annex-IX

AVERAGE FARMER COST OF PRODUCTION OF WHEAT IN SINDH: 2017-18 AND 2018-19 CROPS

S. No	Operations / Inputs	Average No. of oprs/units/ acre	2017-18		2018-19 crop (estimates)	
			Cost per unit	Cost per acre	Cost per unit	Cost per acre
1	2	3	4	5=3*4	7	8=6*7
			.....Rs.....		.....Rs.....	
1	**Land preparation:**					
	1.1 Rotavator	1.000	1450	1450.00	1450	1450.00
	1.2 Ploughing	3.000	900	2700.00	900	2700.00
	1.3 Ploughing & planking	0.070	900	63.00	900	63.00
	1.4 Planking	1.000	500	500.00	500	500.00
	1.5 Levelling (hrs/acre)	1.250	900	1125.00	900	1125.00
2	**Seed and sowing operations:**					
	2.1 Seed used (kgs)	55.403	50.0	2770.15	50.0	2770.15
	2.2. Tractor drilling cost (M.day)	0.037	400	14.80		
	2.3 Labour for seed broadcasting (m.hrs)	1.127	50	56.35	50	56.35
	2.4 Ploughing in case of broadcasting	1.000	900	900.00	900	900.00
	2.5 Planking in case of broadcasting	1.000	450	450.00	450	450.00
3	**Bund making:**					
	3.1 Manual (m.hrs)	1.611	50	80.55	50	80.55
	3.2 tractor (hrs)	0.091	900	81.90	900	81.90
4	**Interculture/ weeding**					
	4.1 Weedicides	0.907	662	600.39	800	725.60
5	**Irrigation: * (Nos)**					
	5.1 Canal	1.763		53.00		53.00
	5.2 Private tubewell (Rs./hr)	2.000	500.00	1000.00	550.00	1100.00
	5.3 Mixed	2.000	262.4	524.80	275.0	550.00
	5.4 Lift pump	0.551	262.4	144.58	275	151.53
6	**6. Labour for irrigation and water course cleaning**	1.300	400.00	520.00	400.00	520.00
7	**Farm Yard Manure (no. of trolley)**	0.250	2800	350.00	2800	700.00
8	**Fertilizers: (bags)**					
	8.1 DAP	1.000	2350.00	2350.00	3150.00	3150.00
	8.2 Urea	2.000	1370.00	2740.00	1600.00	3200.00
	8.3 NP	0.500	1875.00	348.75	2550.00	474.30
	8.4 CAN	0.020	1600.00	32.00	1600.00	32.00
	8.5 Transport and application	3.520	61.531	197.27	65.000	208.39
9	Mark up on investment on item 1to 8 excluding item 5(1) @12 % per annum for 6 months			1329.97		1259.33
10	Harvesting charges (40 kgs/acre)	2.250	1183	2661.75	1200	2700.00
11	11.1 Threshing (kgs/40 kgs)	2.469	1183	2920.83	1200	2962.80
	11.2 M.days	1.415	400	566.00	400	566.00
12	Land rent for 6 months	0.500	20000	10000.00	25000	12500.00
13	Average weighted land tax @ Rs 200/acre/annum			100.00		100.00
14	Drainage Cess			24.00		24.00
15	Management charges for 6 months			1343		1477
16	**Gross cost per acre**			37998		42631
17	Value of wheat bhoosa (Rs/40Kg)			4500		5000
18	Net cultivation cost (item 15-16)			33498		37631
19	**Yield per acre (kgs)**			1200		1225
20	Cost of production at farm level: (Rs/40 kgs)			1117		1229
21	Marketing cost (Rs/40 kgs)			42		42
22	Cost of production at market/procurement centre (Rs/40 kgs)					
23	**23.1 Including land rent**			**1158.60**		**1270.77**
	23.2 Excluding land rent			783		821

Notes:

1. Labour cost for irrigation and water course cleaning derived by multiplying hours/irrigation and total no. of irrigations. divided by 8 (hours/M.day). The resultant is then multiplied by 400 (wage rate).
2. FYM calculated by multiplying no. of trolleys used per acre with cost/ trolley. The resultant is multiplied by .5 because FYM remains for two years. Again the reultant is multiplied by .5 because wheat avails FYM only for 6 months.
3. threshing charges are derived by multiplying kgs paid /40 Kg with price/ kg. Then the resultnat is multipled by yiedl wh Again the resultant is divided by 40 to get threshing cost in Rs./40 Kg.

Annex-X

ECONOMICS OF WHEAT AND COMPETING CROPS AT PRICES REALIZED BY THE GROWERS: 2017-18 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	40225	10905	44063	33158	3837	1.10	4.0	245	3672
2	Seed Cotton	240	22	51820	16923	59767	42844	7947	1.15	3.5	249	2717
3	Basmati paddy	180	58	44106	19846	48041	28195	3935	1.09	2.4	267	828
4	IRRI paddy	180	62	39583	16476	35833	19357	-3751	0.91	2.2	199	578
5	Sunflower (spring)	180	22	45156	17710	47240	29531	2084	1.05	2.7	262	2147
6	Canola	180	13	31517	10861	40008	29147	8491	1.27	3.7	222	3078
7	Seed cotton + wheat	420	34	92045	27828	103830	76002	11784	1.13	3.7	247	3054
8	Seed cotton + sunflower	420	44	96976	34632	107007	72375	10031	1.10	3.1	255	2432
9	Basmati paddy+wheat	360	70	84331	33730	103656	69926	19325	1.23	3.1	288	1481
10	Basmati paddy+sunflower	360	80	89262	37555	95281	57725	6019	1.07	2.5	265	1191
11	IRRI paddy + wheat	360	74	79808	27380	79895	52515	87	1.00	2.9	222	1080
12	IRRI paddy+sunflower	360	84	84739	34185	83073	48887	-1667	0.98	2.4	231	989
13	Sugarcane	394	48	79323	18288	93725	75437	14402	1.18	5.1	238	1953
	Sindh											
1	Wheat	180	12	37298	10998	41363	30364	4064	1.11	3.8	230	3447
2	Seed cotton	240	18	54711	16451	73875	57424	19164	1.35	4.5	308	4104
3	IRRI paddy	180	56	36429	12089	47235	35147	10807	1.30	3.9	262	843
4	Sunflower (spring)	180	22	43759	17050	29475	12425	-14284	0.67	1.7	164	1340
5	Canola	180	13	27512	10780	30725	19945	3213	1.12	2.9	171	2363
6	Seed cotton + wheat	420	30	92009	27449	115238	87788	23229	1.25	4.2	274	3841
7	Seed cotton+sunflower	420	40	98470	33502	103350	69848	4880	1.05	3.1	246	2584
8	IRRI paddy + wheat	360	68	73727	23087	88598	65511	14871	1.20	3.8	246	1303
9	IRRI paddy+sunflower	360	78	80188	29139	76710	47571	-3478	0.96	2.6	213	983
10	Sugarcane	488	71	102527	25990	119891	93901	17365	1.17	4.6	246	1689

Notes for Annex - X

1. The economic analysis presented in the above exercise is based on the input-output prices applicable for 2017-18 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, 2017-18 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 2017-18 crops. To incorporate the escalations in the prices of fertilizer, which occurred during the growing period of 2017-18 crops, some marginal revisions have been made.

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 minimum guaranteed price of wheat at Rs 1300 per 40 kgs, as maintained by the Government for 2017-18 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 1604 and Rs 875 per 40 kgs, respectively. While, the average price of IRRI paddy in Sindh is reported at Rs 898 per 40 kgs.

4.3 The wholesale market prices of seed cotton during the post-harvest months of 2017-18 in the main producer area markets have averaged at Rs 3133 per 40 kgs in the Punjab and Rs 2955 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 2017-18.

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 14.32 in Sindh for sugarcane, Rs 40 for seed cotton in Punjab and Sindh, Rs 45 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.

Annex-XI

ECONOMIC EFFICIENCY OF RESOURCE USE IN WHEAT PRODUCTIO 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

Annex-XII

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

Annex-XIII

YIELD PER HECTARE OF MAJOR WHEAT PRODUCING COUNTRIES IN THE WORLD:2017 CROP

S.No.	Country	Yield per Hactare in Kgs	S.No.	Country	Yield per Hactare in Kgs
1	Ireland	10174.63	31	Slovakia	4738.60
2	New Zealand	9864.44	32	Uzbekistan	4316.54
3	Netherlands	9093.57	33	Oman	4284.18
4	Belgium	8617.36	34	Japan	4270.84
5	United Kingdom	8279.58	35	Estonia	4201.77
6	Denmark	8240.88	36	Bosnia and Herzegovina	4173.94
7	Germany	7644.29	37	Finland	4127.64
8	Zambia	7244.04	38	Ukraine	4109.67
9	Sweden	6989.12	39	Serbia	4092.00
10	France	6757.01	40	Albania	4036.67
11	Egypt	6553.45	41	Mali	4013.70
12	Namibia	6452.89	42	Italy	3856.18
13	Saudi Arabia	6433.30	43	Republic of Moldova	3723.21
14	Switzerland	6094.03	44	Belarus	3654.02
15	Chile	5996.62	45	Republic of Korea	3447.16
16	Croatia	5874.49	46	Lebanon	3369.97
17	Czechia	5670.50	47	United Arab Emirates	3320.00
18	Luxembourg	5483.33	48	Canada	3318.31
19	China, mainland	5481.23	49	Argentina	3304.68
20	Bulgaria	5358.30	50	Montenegro	3233.77
21	Mexico	5296.73	51	**India**	3219.28
22	Hungary	5249.69	52	Bangladesh	3157.60
23	Norway	5238.93	53	Tajikistan	3147.10
24	Slovenia	5031.45	54	Kuwait	3142.86
25	Malta	4915.68	55	South Africa	3122.46
26	Romania	4888.14	56	Russian Federation	3120.33
27	Poland	4877.27	57	United States of America	3114.32
28	Austria	4871.19	58	Venezuela (Bolivarian Republic of)	3043.48
29	Lithuania	4824.66	**59**	**Pakistan**	2973.03
				World Average	**3531**

Source: FAO Production Year Book 2017

Annex-XIV

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 2015-16 wheat crop.

** Recommended by M/o NFS&R.

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

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.