

# Agriculture

Agricultural sector is indispensable to the country's economic growth, food security, employment generation and poverty alleviation particularly, at the rural level. It contributes 19.2 percent to the GDP and provides employment to around 38.5 percent of the labour force. More than 65-70 percent of the population depends on agriculture for its livelihood. Agricultural growth rate has been constrained by shrinking arable land, climate change, water shortages, and large-scale population and labour shift from rural to urban areas. Increasing agricultural productivity, therefore, requires adoption of new approaches. With strong forward and backward linkages with the secondary (industrial) and tertiary (services) sectors, it can play a pivotal role to spur economic growth. However, this sector has remained prone to several challenges like climate change, variance in temperature, water shortage, and changes in pattern of precipitation along with increase in input prices.

The government is closely monitoring key crops and devising policies/planning interventions to ensure uninterrupted supply of basic food items at affordable prices in the country. The primary goal of the government is to enhance financial inclusion in the agriculture sector to boost productivity and exports, thereby enabling a rural development-driven economic growth.

Realising the importance of agriculture, the government is also focusing on pro-agriculture set of policies to tap maximum benefits by introducing the agri-input regime to increase yields of major rabi and kharif crops. The Prime Minister has approved "Agriculture Transformation Plan" with the objective to enhance national agricultural output and livelihood of farmers.

## **Box Item-I: Agriculture Transformation Plan**

Ministry of National Food Security and Research presented an action plan before Prime Minister for transformation of agriculture sector in the country. Under this plan provinces will work on re-tweaking of machinery given under National Agriculture Emergency Projects (NAEP) on wheat, rice, sugarcane, and oilseeds for maximum distribution of implements among farming community on following aspect:

- Design of intervention and pre-qualification mechanism
- Additional implements
- Subsidy mechanism to be aligned with Kissan Card
- Service providers to be registered
- Unique implement ID
- Farmers share

This approved action plan with specific timeline for interventions, yield gaps and particular issues of the sector to be resolved through first and second generation. These interventions comprise of action to be taken by Federal and Provincial Governments. The details are as under:

**First Generation Interventions**

Bridging the yield gap	Target sectors
<ul style="list-style-type: none"> <li>• Seed sector reforms</li> <li>• Inputs: digital subsidy mechanism</li> <li>• Mechanization</li> <li>• Water efficiency</li> <li>• Revamping extension services</li> <li>• Access to credit</li> <li>• Post harvest storage</li> <li>• Restructuring research institutes</li> </ul>	<ul style="list-style-type: none"> <li>• Cotton revival</li> <li>• Olive deepening</li> <li>• Genetic improvement in livestock</li> <li>• Fisheries</li> </ul>

**Second Generation Interventions**

<ul style="list-style-type: none"> <li>• Horizontal expansion</li> <li>• International Cooperation</li> <li>• Value Chain Development</li> <li>• Clusters (Fruit &amp; Vegetables)</li> <li>• Perishable produce</li> </ul>	<ul style="list-style-type: none"> <li>• Crop Zoning</li> <li>• Land Consolidation</li> <li>• Organic farming</li> <li>• Adaption and self-discovery</li> <li>• Sub-montane agriculture</li> </ul>
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Source: Ministry of National Food Security & Research

**Agriculture Performance during 2020-21**

Pakistan has two cropping seasons. “Kharif”, the first sowing season, which starts from April to June and is harvested from October to December. This season crop cycle mainly consists of rice, sugarcane, cotton, maize, moong, mash, bajra and jowar.

“Rabi”, being the second season, sowing begins from October to December and is harvested from April to May. It comprises mainly of wheat, gram, lentil (masoor), tobacco, rapeseed, barley and mustard.

The agriculture sector’s performance during 2020-21 broadly stands encouraging as it grows by 2.77 percent against the target of 2.8 percent. The growth of important crops (wheat, rice, sugarcane, maize and cotton) during the year is 4.65 percent. The production of major Kharif crops 2020, such as sugarcane, maize and rice indicated considerable improvement compared to last year and surpassed the production targets. The production of sugarcane increased by 22.0 percent to 81.009 million tonnes from 66.380 million tonnes, rice by 13.6 percent to 8.419 million tonnes from 7.414 million tonnes and maize by 7.4 percent to 8.465 million tonnes from 7.883 million tonnes. However, the cotton crop suffered mainly due to decline in area sown, heavy monsoon rains and pest attacks. The cotton production reduced by 22.8 percent, to 7.064 million bales from 9.148 million bales last year.

Wheat, the most important crop of “Rabi”, showed a growth of 8.1 percent and reached record high production level of 27.293 million tonnes compared to 25.248 million tonnes last year. The wheat cultivation area increased to 9.178 million hectares prompted by record domestic prices and official programmes promoting wheat production. For the Rabi crops 2020-21, the government provided a comprehensive

“Rabi Package” comprising of subsidies on fertilizer, fungicides and weedicides, together with an increase in the Minimum Support Price (MSP) of wheat to Rs 1,800 per 40 Kg.

Other crops, having a share of 11.69 percent in agriculture value addition and 2.24 percent in GDP, showed growth of 1.41 percent because of increase in production of fodder, vegetables and fruits. Cotton ginning declined by 15.58 percent due to fall in production of cotton crop. The overall crops sector, having a share of 35.81 percent in agriculture value addition and 6.87 percent in GDP witnessed a growth of 2.47 percent due to increase in growth of important crops by 4.65 percent. This was largely due to sufficient availability of agricultural inputs (water, subsidized fertilizers, certified seeds, pesticides and agriculture credit).

Livestock having a share of 60.07 percent in agriculture and 11.53 percent in GDP achieved a growth of 3.06 percent. The fishing sector, with a share of 2.01 percent in agriculture value addition and 0.39 percent in GDP, grew by 0.73 percent, while forestry sector having share of 2.10 percent in agriculture and 0.40 percent in GDP grew by 1.42 percent. (Table 2.1)

Sector	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021 P
<b>Agriculture</b>	<b>2.13</b>	<b>0.15</b>	<b>2.18</b>	<b>4.00</b>	<b>0.56</b>	<b>3.31</b>	<b>2.77</b>
1.Crops (i+ii+iii)	0.16	-5.27	1.22	4.69	-4.96	5.54	2.47
i) Important Crops	-1.62	-5.86	2.60	3.56	-7.69	5.24	4.65
ii) Other Crops	2.51	0.40	-2.51	6.26	2.60	8.08	1.41
iii) Cotton Ginning	7.24	-22.12	5.58	8.80	-12.74	-4.82	-15.58
2.Livestock	3.99	3.36	2.99	3.70	3.82	2.10	3.06
3.Forestry	-12.45	14.31	-2.33	2.58	7.28	3.60	1.42
4.Fishing	5.75	3.25	1.23	1.62	0.80	0.60	0.73

P: Provisional

Source: Pakistan Bureau of Statistics

Water availability during Kharif 2020 remained at 65.1 million acre feet (MAF) showing a slight decrease of 0.2 percent compared to 65.2 MAF of Kharif 2019. Rabi season 2020-21 received 31.2 MAF, showing an increase of 6.9 percent over Rabi 2019-20. (Table 2.2).

Period	Kharif	Rabi	Total	% age increase/decrease over the average system usage (103.5 MAF)
Average system usage	67.1	36.4	103.5	-
2011-12	60.4	29.4	89.8	-13.2
2012-13	57.7	31.9	89.6	-13.4
2013-14	65.5	32.5	98.0	-5.3
2014-15	69.3	33.1	102.4	-1.1
2015-16	65.5	32.9	98.4	-4.9
2016-17	71.4	29.7	101.1	-2.3
2017-18	70.0	24.2	94.2	-9.0
2018-19	59.6	24.8	84.4	-18.5
2019-20	65.2	29.2	94.4	-8.8
2020-21	65.1	31.2	96.3	-7.0

Source: Indus River System Authority

## I. Crop Situation

The important crops contribute 22.49 percent to value addition in agriculture sector and 4.32 percent to GDP. Other crops account for 11.69 percent in value addition of agriculture sector and 2.24 percent in GDP. The production of important crops is given in Table 2.3.

Year	Cotton (000 bales)	Sugarcane	Rice	Maize	Wheat
2014-15	13,960	62,826	7,003	4,937	25,086
	-	-	-	-	-
2015-16	9,917	65,482	6,801	5,271	25,633
	(-29.0)	(4.2)	(-2.9)	(6.8)	(2.2)
2016-17	10,671	75,482	6,849	6,134	26,674
	(7.6)	(15.3)	(0.7)	(16.4)	(4.1)
2017-18	11,946	83,333	7,450	5,902	25,076
	(11.9)	(10.4)	(8.8)	(-3.8)	(-6.0)
2018-19	9,861	67,174	7,202	6,826	24,349
	(-17.5)	(-19.4)	(-3.3)	(15.7)	(-2.9)
2019-20	9,148	66,380	7,414	7,883	25,248
	(-7.2)	(-1.2)	(2.9)	(15.5)	(3.7)
2020-21(P)	7,064	81,009	8,419	8,465	27,293
	(-22.8)	(22.0)	(13.6)	(7.4)	(8.1)

P: Provisional

Note: Figures in parentheses are growth/decline rates

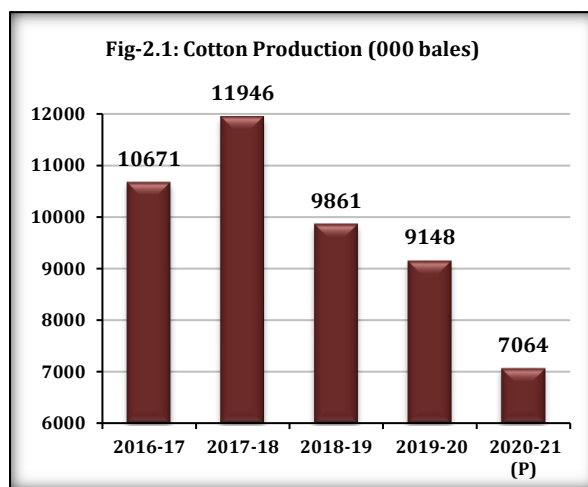
Source: Pakistan Bureau of Statistics

### a) Important Crops

#### i) Cotton

Cotton crop stands vital in agriculture as well as textile sector of the economy. It contributes around 0.6 percent to GDP and 3.1 percent of the value added in agriculture. Cotton crop faces multiple challenges and competes with other crops especially sugarcane. International prices also play a role. Being an export oriented raw material of textile industries, maintaining prices at levels competitive with the international market while ensuring due profitability of growers has been a great challenge for policy makers.

During 2020-21, the crop was cultivated on 2,079 thousand hectares, reflecting a contraction of 17.4 percent as compared to last year's sown area of 2,517 thousand hectares. Production declined by 22.8 percent to 7.064 million bales against production of 9.148 million bales last year (Table 2.4 and Figure 2.1). Declining cultivated area has



reduced production as the crop has lost its competitiveness relative to other major crops, in particular sugarcane.

**Table 2.4: Area, Production and Yield of Cotton**

Year	Area		Production		Yield	
	(000 Hectare)	% Change	(000 Bales)	% Change	(Kgs/Hec)	% Change
2016-17	2,489	-	10,671	-	729	-
2017-18	2,700	8.5	11,946	11.9	753	3.3
2018-19	2,373	-12.1	9,861	-17.5	707	-6.1
2019-20	2,517	6.1	9,148	-7.2	618	-12.6
2020-21(P)	2,079	-17.4	7,064	-22.8	578	-6.5

P: Provisional

Source: Pakistan Bureau of Statistics

### **Box Item-II : Cotton Crop: Challenges and Way Forward**

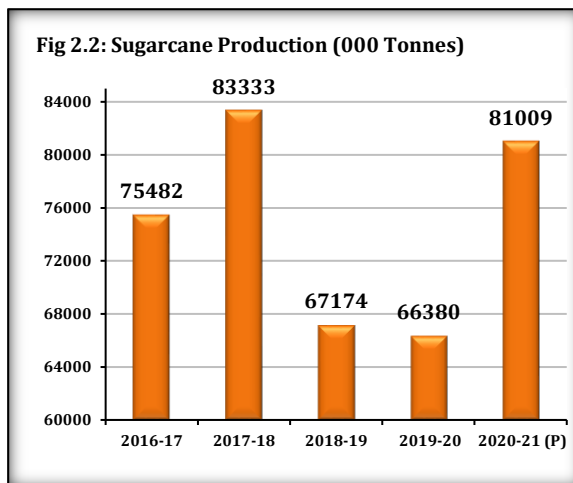
Pakistan, a major producer of cotton (ranked 5<sup>th</sup>, ICAC), is facing a significant decline in major varieties of cotton crop production due to multiple challenges. Acreage of cotton crop is shrinking due to non-profitability of the crop as compared to maize, paddy and sugarcane. Other factors contributing to the decline are i) biotic stresses of white fly and pink bollworm, ii) abiotic stresses like climate change, heat stresses and extreme rainfalls iii) poor agricultural practices and unnecessary use of pesticides. A high cost of inputs including fertilizers, pesticides and seeds is another area of concern. There is lack of early generation seed and research progression is inadequate for development of new varieties which can withstand pests, diseases, and climatic stresses. Research experts suggest that cotton zoning is indispensable to revive the crop. Such zoning coupled with fixation of minimum indicative or intervention price, timely issuance of subsidies and improved extension services for awareness of farmers are essential for revival of cotton production.

A ray of hope in this regard is a fact that government institutions are gearing up to boost production of the strategic crop which involves livelihood of millions of farmers and related industries. To start with, M/o NFS&R has initiated an "Agriculture Transformation Plan" including amending relevant laws to fast track release of new cotton varieties with novel technologies. Track and traceability of quality certified seed to farmers has also been initiated so that the impact of interventions can translate at farm level. Work is also in progress to weeding out inactive companies involved in cotton seed business and action against sale of substandard seeds is being taken. Pakistan Central Cotton Committee, established for developing, improving, growing and marketing of cotton, may also be reinstated. Emphasis is also being laid on use of Pink Bollworm (PB) ropes for biological control of cotton pests. The government is also exploring avenues for growing cotton in Balochistan and Khyber Pakhtunkhwa where pest pressure is low and cotton yields are reportedly higher than traditional areas of Punjab and Sindh. Moreover, organic cotton farming has also been started in Balochistan. All efforts are being made for timely issuance of subsidy for pesticides, seeds and fertilizers through Kissan cards. For Kharif 2021, certified cotton seed availability is 43,525 MT, highest in the past four years.

Source: Ministry of National Food Security & Research

## ii) Sugarcane

Sugarcane is a high value cash crop of Pakistan and is of great significance for sugar related industries, second largest agro-industry sector after textile. Its production accounts for 3.4 percent in agriculture's value addition and 0.7 percent in GDP. During 2020-21, the crop was cultivated on 1,165 thousand hectares, an increase of 12.0 percent compared to last year's sown area of 1,040 thousand hectares. Production increased by 22.0 percent to 81.009 million tonnes against 66.380 million last year. The crop experienced a significant increase in area under cultivation and yield. It was mainly due to favourable weather conditions, better management, timely availability of quality inputs and higher economic returns. The area, production and yield of sugarcane during the last five years are given in Table 2.5 and Figure 2.2.



**Table 2.5: Area, Production and Yield of Sugarcane**

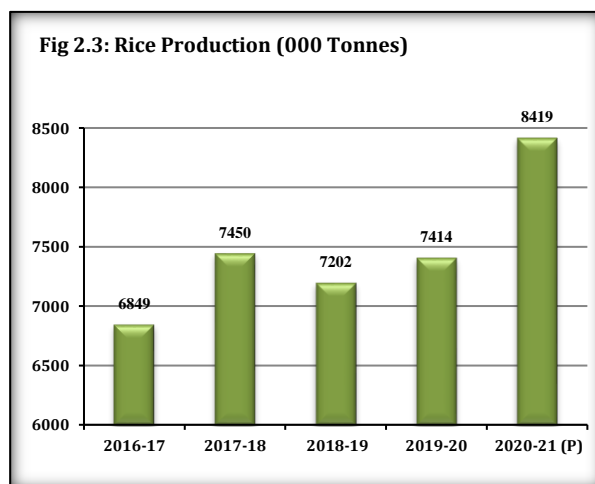
Year	Area		Production		Yield	
	(000 Hectare)	% Change	(000 Tonnes)	% Change	(Kgs/Hec.)	% Change
2016-17	1,218	-	75,482	-	61,972	-
2017-18	1,342	10.2	83,333	10.4	62,096	0.2
2018-19	1,102	-17.9	67,174	-19.4	60,956	-1.8
2019-20	1,040	-5.6	66,380	-1.2	63,827	4.7
2020-21 (P)	1,165	12.0	81,009	22.0	69,536	8.9

P: Provisional

Source: Pakistan Bureau of Statistics

## iii) Rice

Rice is an important food as well as cash crop. It is the second main staple food crop after wheat and the second major exportable commodity after cotton. It contributes 3.5 percent of value added in agriculture and 0.7 percent in GDP. Rice production comprises of basmati (fine) and coarse types. During the last few years, production of coarse types is increasing. During 2020-21, the crop was cultivated on 3,335 thousand hectares, reflecting an increase 9.9 percent as compared to last year's sown area of 3,034 thousand hectares. The current year witnessed a record production growth of 13.6 percent to 8.419 million tonnes against 7.414 million tonnes last year. This was



essentially due to rising unit prices and higher demand for the country's rice in export markets. The area, production and yield of rice during the last five years are shown in Table 2.6 and Figure 2.3.

**Table 2.6: Area, Production and Yield of Rice**

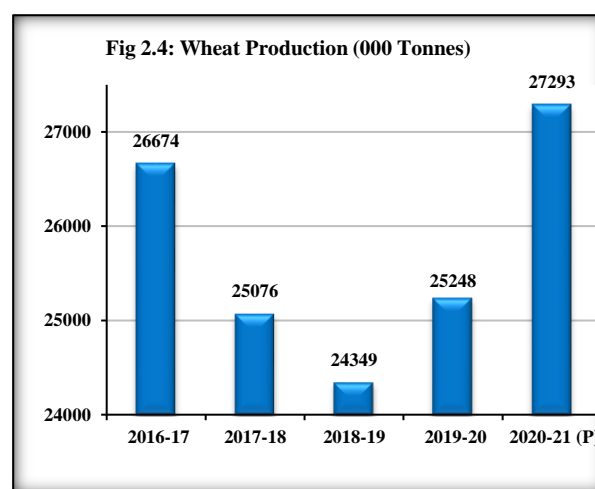
Year	Area		Production		Yield	
	(000 Hectare)	% Change	(000 Tonnes)	% Change	(Kgs/Hec.)	% Change
2016-17	2,724	-	6,849	-	2,514	-
2017-18	2,901	6.5	7,450	8.8	2,568	2.1
2018-19	2,810	-3.1	7,202	-3.3	2,563	-0.2
2019-20	3,034	8.0	7,414	2.9	2,444	-4.6
2020-21(P)	3,335	9.9	8,419	13.6	2,524	3.3

P: Provisional

Source: Pakistan Bureau of Statistics

#### iv) Wheat

Wheat is Pakistan's main staple crop and, therefore, essential for the food security of the country. It accounts for 9.2 percent of the value added in agriculture and 1.8 percent of the GDP. Self-sufficiency in wheat has been a core objective of every government. During 2020-21, area under cultivation increased by 4.2 percent to 9,178 thousand hectares over last year's sown area of 8,805 thousand hectares. Wheat crop recorded historic high production of 27.293 million tonnes showing an increase of 8.1 percent over



25.248 million tonnes production of last year. This was primarily due to the increase in cultivated area, along with the shift of policies towards supporting wheat crop through increase in MSP for the crop. The MSP in 2020-21 increased from Rs 1,400 to Rs 1,800 per 40 Kg, a 29 percent hike. The position over the last five years is given in Table 2.7 and Figure 2.4.

**Table 2.7: Area, Production and Yield of Wheat**

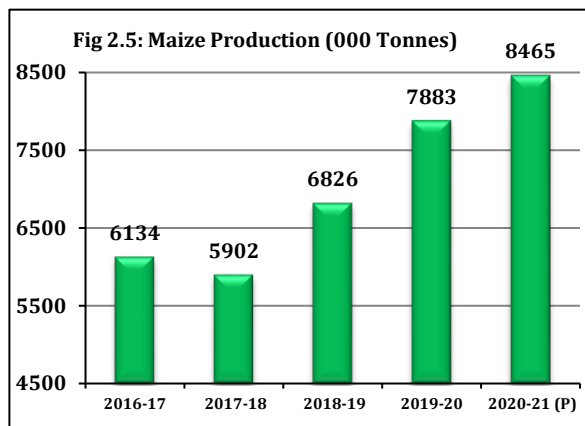
Year	Area		Production		Yield	
	(000 Hectares)	% Change	(000 Tonnes)	% Change	(Kgs /Hec.)	% Change
2016-17	8,972	-	26,674	-	2,973	-
2017-18	8,797	-1.9	25,076	-6.0	2,851	-4.1
2018-19	8,678	-1.4	24,349	-2.9	2,806	-1.6
2019-20	8,805	1.5	25,248	3.7	2,867	2.2
2020-21(P)	9,178	4.2	27,293	8.1	2,974	3.7

P: Provisional

Source: Pakistan Bureau of Statistics

## v) Maize

Maize is the third important cereal crop of Pakistan after wheat and rice. It contributes 3.4 percent to the value added in agriculture and 0.6 percent to GDP. Maize is cultivated as a multipurpose crop for food, feed and fodder. While human consumption is declining, its utilization in feed and wet milling industry is growing at a fast pace. During 2020-21, maize was cultivated on an area of 1,418 thousand hectares reflecting an increase of 1.0 percent over last year's 1,404 thousand hectares. Its production increased by 7.4 percent to 8,465 million tonnes compared to last year's production of 7,883 million tonnes. The production increase was largely due to increase in area, availability of improved variety of seed, and better economic returns. Last five years position is presented in Table 2.8 and Figure 2.5.



**Table 2.8: Area, Production and Yield of Maize**

Year	Area		Production		Yield	
	(000 Hectares)	% Change	(000 Tonnes)	% Change	(Kgs /Hec.)	% Change
2016-17	1,348	-	6,134	-	4,550	-
2017-18	1,251	-7.2	5,902	-3.8	4,718	3.7
2018-19	1,374	9.8	6,826	15.7	4,968	5.3
2019-20	1,404	2.2	7,883	15.5	5,615	13.0
2020-21 (P)	1,418	1.0	8,465	7.4	5,970	6.3

P: Provisional

Source: Pakistan Bureau of Statistics

## b) Other Crops

During 2020-21, Gram production declined by 47.6 percent to 266 thousand tonnes on account of decline in area, yield and unfavourable weather conditions. The production of Bajra and Jowar also witnessed a decrease of 30.7 percent and 20.0 percent respectively due to a decrease in area under cultivation. The production of Barley, Rapeseed & Mustard and Tobacco remained at the last year production level. The area and production of other crops are given in Table 2.9.

**Table 2.9: Area and Production of Other Kharif and Rabi Crops**

Crops	2019-20		2020-21(P)		% Change in production over Last year
	Area (000 Hectares)	Production (000 Tonnes)	Area (000 Hectares)	Production (000 Tonnes)	
Bajra	522	384	350	266	-30.7
Jowar	199	120	126	96	-20.0
Gram	944	498	873	261	-47.6
Barley	49	47	41	47	-
Rapeseed & Mustard	353	488	222	488	-
Tobacco	51	133	51	133	-

P: Provisional

Source: Pakistan Bureau of Statistics



During 2020-21, the production of Moong, Mash and Potato increased by 62.4, 7.7 and 2.8 percent respectively, as compared to the corresponding period of last year. However, the production of Chillies and Onion decreased by 26.7, 1.1 percent respectively, while production of Masoor remained same over last year. The area and production of other crops are given in Table 2.10.

**Table 2.10: Area and Production of Other Crops**

Crops	2019-20		2020-21(P)		% Change in production over Last year
	Area (000 Hectares)	Production (000 Tonnes)	Area (000 Hectares)	Production (000 Tonnes)	
Masoor	9.5	4.9	6.5	4.9	-
Moong	172.9	125.9	231.1	204.5	62.4
Mash	13.9	6.5	11.0	7.0	7.7
Potato	185.4	4,552.7	234.4	4,681.0	2.8
Onion	148.2	2,122.0	153.8	2,099.6	-1.1
Chillies	60.8	141.5	45.7	103.7	-26.7

P: Provisional

Source: Pakistan Bureau of Statistics

### i) Oilseeds

During FY2021 (July-March), 2.917 million tonnes of edible oil of value Rs 574.199 billion (US\$ 3.419 billion) was imported. Local production of edible oil during this period is provisionally estimated at 0.374 million tonnes. Total availability of edible oil from all sources is estimated at 3.291 million tonnes. The area and production of oilseed crops is given in Table 2.11.

**Table 2.11: Area and Production of Major Oilseed Crops** (000 Tonnes)

Crops	2019-20			2020-21 (July-March) (P)		
	Area (000 Acres)	Production		Area (000 Acres)	Production	
		Seed	Oil		Seed	Oil
Cottonseed	6,243	2,342	281	5,137	1,782	214
Rapeseed & Mustard	984	561	179	608	338	108
Sunflower	250	146	55	151	87	33
Canola	125	78	30	77	49	19
<b>Total</b>	<b>7,602</b>	<b>3,127</b>	<b>545</b>	<b>5,973</b>	<b>2,256</b>	<b>374</b>

P: Provisional

Source: Pakistan Oilseed Development Board (PODB), Pakistan Bureau of Statistics

For promotion of oilseed crops, PODB, Ministry of National Food Security & Research (MNFS&R) is executing a mega project "National Oilseed Enhancement Programme" with a total cost of Rs 10.964 billion under the National Agriculture Emergency Programme. Under this programme, a subsidy of Rs 5,000 per acre for seed/inputs for canola, sunflower and sesame and 50 percent on purchase of oilseed machineries is being provided to oilseed growers.

## II. Farm Inputs

### i) Fertilizer

Pakistan meets around 84 percent of its fertilizer requirement through local production while the remaining is met through imports.

Domestic production of fertilizers during FY2021 (July-March) increased by 5.9 percent over the same period of previous year. This increase was mainly due to the supply of gas to Pak Arab Fertilizer from Mari Petroleum Company Limited. The imported supply of fertilizer decreased by 20.1 percent, while the total availability of fertilizer increased slightly by 0.3 percent during the period. There was an upsurge in total offtake of fertilizer nutrients by 15.2 percent. Nitrogen offtake witnessed an upward trend of 13.2 percent, phosphate of 20.0 percent and potash of 39.3 percent during FY2021 (July-March). One of the major reasons for the healthy growth in fertilizer usage was the increase in support price of wheat. Price of urea decreased by 12 percent while DAP increased by 12.2 percent. As a result of a reduction of Gas Infrastructure Development Cess (GIDC) to Rs 5/MMBTU, the cost of urea decreased by Rs 398 per bag with effect from 28<sup>th</sup> January, 2020. Following are the different types of subsidies provided by the government during FY2021.

- ▶ Subsidy in the form of cheap natural gas used as feed for fertilizer production (Rs 865 per bag of urea as per fuel and feed price difference)
- ▶ Subsidized LNG for production of urea from Fatimafert and Agritech (Rs 479 per bag)
- ▶ Cash subsidy by Government of Punjab for phosphate and potash fertilizer (Rs 500 per bag of DAP and SOP and equivalent for other phosphate and potash fertilizers based on percent nutrient content)

Total availability of urea during Kharif 2020 was 3,695 thousand tonnes, comprising of 591 thousand tonnes of opening inventory and 3,104 thousand tonnes of domestic production (Table 2.12). Urea offtake was about 3,188 thousand tonnes, leaving an inventory of 473 thousand tonnes for Rabi 2020-21. Availability of DAP was 1,456 thousand tonnes comprising of 500 thousand tonnes of opening inventory, 547 thousand tonnes of imported supplies and 409 thousand tonnes of local production. DAP offtake was 1,162 thousand tonnes leaving an inventory of 297 thousand tonnes for the upcoming Rabi 2020-21.

Rabi 2020-21 started with an opening balance of 473 thousand tonnes of urea (Table 2.12). Domestic production during Rabi 2020-21 would be 3,017 thousand tonnes. Urea offtake during current Rabi 2020-21 was 3,220 thousand tonnes, against 3,490 thousand tonnes of total availability, leaving a closing balance of 304 thousand tonnes for next season. DAP availability during Rabi 2020-21 is estimated at about 1,162 thousand tonnes, which includes 297 thousand tonnes of opening inventory, 518 thousand tonnes of imported supplies and domestic production of 347 thousand tonnes. Offtake of DAP during Rabi season will be about 1,059 thousand tonnes, leaving a balance of 101 thousand tonnes for next season.

The total availability of urea during Kharif 2021 will be about 3,536 thousand tonnes comprising of 304 thousand tonnes of opening balance and 3,232 thousand tonnes of domestic production (Table 2.12). Urea offtake is expected to be around 3,033 thousand tonnes, reflecting closing balance of 503 thousand tonnes. The total availability of DAP will be 566 thousand tonnes against expected offtake of 1,012 thousand tonnes. Supply and demand gap will be filled through imported supplies by the private sector.

**Table 2.12: Fertilizer Supply Demand Situation** (000 Tonnes)

Description	Kharif (Apr-Sep) 2020		Rabi (Oct-Mar) 2020-21		Kharif (Apr-Sep) 2021*	
	Urea	DAP	Urea	DAP	Urea	DAP
Opening Stock	591	500	473	297	304	101
Imported Supplies	0	547	0	518	0	45
Domestic Production	3,104	409	3,017	347	3,232	420
Total Availability	3,695	1,456	3,490	1,162	3,536	566
Offtake/Demand	3,188	1,162	3,220	1,059	3,033	1,012
Write on/off	-34	3	34	-2	0	0
Closing Stock	473	297	304	101	503	-446

\*: It is assumed that Fatimafert and Agritech will remain operational for whole Kharif season.

Source: National Fertilizer Development Centre

## ii) Improved Seed

Seed is a basic input for agriculture sector and has a leading role in enhancing agricultural productivity. To improve the availability of quality seed to the farmers of Pakistan, there is a need to revitalize research and development and adopt international best practices in line with the requirements of the domestic and global markets.

### Seed Sector Reforms

#### 1. Seed (Business Regulation) Rules, 2016

Upon recommendations of the Agriculture Transformation Plan approved by the Prime Minister, Seed (Business Regulation) Rules, 2016 and Seed (Regulation) Rules, 1987 have been amended. MNFS&R has revised the criteria for induction, performance evaluation and cancellation of seed companies. Strict verifications have been put in place with the consent of the breeder/institute to provide source of seed material for multiplication by the company.

- ▶ Procedure for approval has been revised i.e., Working Group replaced with the Seed Business Regulation Committee
- ▶ Separate requirements for local seed producers, importers and exporters have been delineated
- ▶ Technical parameters for each set of company have been clearly defined
- ▶ Mandatory local seed production for importing companies has been made a precondition
- ▶ Performance bonds submission by the candidate company has been proposed
- ▶ Conditions for cancellation of companies have been clearly mentioned

#### 2. Seed (Registration) Rules, 1987

Upon recommendations in the Agriculture Transformation Plan approved by the Prime Minister, Seed (Registration) Rules, 1987 have been amended. Through these rules, provision has been made for rapid multiplication of seed of unique new varieties after completion of 1<sup>st</sup> year DUS (distinctness, uniformity, stability) and NUYT (National Uniform Yield Trials) upon joint recommendation of Federal Seed Certification & Registration Department (FSC&RD) and PARC. Such varieties must satisfy the criteria of novelty, high yield, and pest/disease resistance.

### 3. Establishing a System of Consumer Traceability for Seed Authenticity

MNFS&R with the help of National Telecommunication Corporation (NTC) is in the process of establishing a system of track and traceability of seed produced by seed companies, certified by FSC&RD and sold by seed dealers. In this respect, a system of unique algorithmic labels will be introduced which farmers will be able to verify through SMS. Developing a Seed Information Management System for FSC&RD is also part of the interventions which will be a step forward in transforming manual data recording to digitize FSC&RD services. This will not only provide access to real time data but will also improve the efficiency and transparency in activities pertaining to seed quality regulation.

#### Track and Traceability of Certified Seed

FSC&RD in collaboration with provincial extension departments has started track and traceability of certified seed so that the impact of these interventions can be calculated at farm level. In this regard, a unified format has been designed for major crops i.e., wheat, cotton and paddy. A total of 434 companies working on wheat were assessed for seed traceability of 513,519 MT seed, of which data was traced for 361,408 MT i.e. 87.4 percent. Services of 110 companies with respect to wheat seed testing were deferred owing to failure in providing traceability data or huge traceability gaps. The information regarding sale of cotton certified seed to dealers by the seed companies is being shared with provincial extension departments for traceability of certified seed at farmer level.

The area, seed requirement and seed availability during FY2021 (July-March), are given in Table 2.13.

Crop	Sowing Area* (000 Ha)	Total Seed Requirement	Seed Availability			
			Public	Private	Imported	Total
Wheat**	8,709	1,075,562	0	0	0	647,684
Cotton	2,310	39,940	425	41,584	0	43,525
Paddy	2,957	44,148	6,406	62,201	2,988	71,595
Maize	1,328	32,802	88	3,794	12,758	16,639
Pulses	1,185	42,674	1,054	2,731	0	3,785
Oilseeds	830	10,790	20	1,736	710	2,466
Vegetables	280	8,400	7	4,449	2,295	6,751
Fodders	2,038	61,140	2,942	18,428	21,244	42,614
Potato	166	415,000	0	0	13,841	13,841
<b>Total</b>	<b>19,803</b>	<b>1,736,161</b>	<b>10,968</b>	<b>134,923</b>	<b>53,835</b>	<b>847,411</b>

\*: Area has been decided by the Federal Committee on Agriculture (FCA), MNFS&R.

\*\* : These figures are provisional based upon wheat crop inspection expected yield estimates. Final seed availability figures will be available after testing of seed samples.

Source: Federal Seed Certification & Registration Department

#### iii) Farm Mechanization

Farm mechanization is an important element to accelerate growth in agriculture sector and its lack is a main constraint in increasing agricultural productivity. The federal government continued the relief package that allows import of farm machinery and

equipment at reduced tariff (Custom Duty 0-2 percent and GST 07 percent) to encourage mechanized farming in the country.

The domestic tractor industry has played a significant role in fulfilling the requirements of tractors. The number of operational tractors in the country is around 612,000 resulting in availability of around 0.09 horsepower (HP) per acre against the required power of 1.4 HP per acre. During 2020-21 (July-March), total tractor production was 36,653 compared to 23,266 produced last year, a 57.5 percent increase. The production increase was largely due to an improved liquidity position of farmers. The prices and production of locally manufactured tractors are given in Table 2.14.

**Table 2.14: Prices and Production of Locally Manufactured Tractors 2020-21 (July-March)**

Tractors Model - Horse Power (HP)	Basic Price (Rs)	GST @ 05 percent	Total Price (Rs)	Actual Production (in Nos.)	Actual Sale (in Nos.)
<b>M/s Al-Ghazi Tractors Limited*</b>					
480-S (55 HP)	900,000	45,000	945,000	2,032	1,839
480 Power Steering (55 HP)	923,000	46,150	969,150	315	319
480-S Power Steering (55 HP)	947,000	47,350	994,350	490	450
Ghazi (65 HP)	1,031,000	51,550	1,082,550	2,855	2,296
Ghazi-WDB (65 HP)	1,040,000	52,000	1,092,000	56	54
640 (75 HP)	1,373,000	68,650	1,441,650	1,153	975
640-WDB (75 HP)	1,383,100	69,150	1,452,150	31	21
640-S (85 HP)	1,402,000	70,100	1,472,100	63	63
640-S WDB (85 HP)	1,405,000	70,250	1,475,250	15	15
Dabung (85 HP)	1,409,000	70,450	1,479,450	186	156
NH-70-56 4WD (85 HP)	1,885,000	94,250	1,979,250	1	10
<b>Total</b>				<b>7,197</b>	<b>6,198</b>
<b>M/s Millat Tractors Limited</b>					
MF-240 (50 HP)	950,000	47,500	997,500	2,225	2,205
MF-350 Plus (50 HP)	1,040,000	52,000	1,092,000	2,208	2,205
MF-260 (60 HP)	1,096,000	54,800	1,150,800	2,799	2,815
MF-360 (60 HP)	1,140,000	57,000	1,197,000	2,891	3,007
MF-360 4wd (60 HP)	1,655,000	82,750	1,737,750	2,430	2,331
MF-375 (75 HP)	1,445,000	68,850	1,517,250	3,440	2,975
MF-385 (85 HP)	1,508,000	92,450	1,583,400	3,374	3,862
MF-375 4WD (75 HP)	1,920,000	72,500	2,016,000	2,934	3,008
MF-385 4WD (85 HP)	2,050,000	99,950	2,152,500	3,612	3,507
<b>Total</b>				<b>25,913</b>	<b>25,915</b>
<b>Grand Total</b>				<b>33,110</b>	<b>32,113</b>

\*: July-February

Source: Tractor Manufacturers, Federal Water Management Cell

#### iv) Irrigation

During the monsoon season (July-September) 2020, rainfall received at 198.9 mm showing a significant increase of 41.2 percent against the normal average rainfall of 140.9 mm. During post-monsoon season (October-December) 2020, rainfall was recorded at 22.2 mm against the normal average rainfall of 26.4, a decline of 15.9 percent. During winter season (January-March) 2021, rainfall recorded was 40.3 mm

against the normal average rainfall of 74.3 mm, a decrease of 45.8 percent. Rainfall recorded is given in Table 2.15.

	<b>Monsoon Rainfall (Jul-Sep) 2020</b>	<b>Post Monsoon Rainfall (Oct-Dec) 2020</b>	<b>Winter Rainfall (Jan-Mar) 2021</b>
Normal**	140.9	26.4	74.3
Actual	198.9	22.2	40.3
Shortage (-)/excess (+)	+58.0	-4.2	-34.0
% Shortage (-)/excess (+)	+41.2	-15.9	-45.8

\*: Area Weighted  
 \*\*: Normal/Long Period Average of 1961-2010

Source: Pakistan Meteorological Department

Canal head withdrawals decreased by 0.2 percent during Kharif (April-September) 2020 to 65.11 MAF compared to 65.23 MAF during the same season last year. During Rabi (October-March) 2020-21, it showed an increase of 6.9 percent to 31.21 MAF compared to 29.20 MAF during the same season last year. The province-wise details are shown in Table 2.16.

<b>Province</b>	<b>Kharif (Apr-Sep) 2019</b>	<b>Kharif (Apr-Sep) 2020</b>	<b>% Change in Kharif 2020 Over 2019</b>	<b>Rabi (Oct-Mar) 2019-20</b>	<b>Rabi (Oct-Mar) 2020-21</b>	<b>% Change in Rabi 2020-21 Over 2019-20</b>
Punjab	34.42	33.44	-3	14.67	17.42	19
Sindh	28.04	28.80	3	12.92	12.01	-7
Balochistan	1.87	2.02	8	1.24	1.22	-2
Khyber Pakhtunkhwa	0.91	0.85	-6	0.36	0.57	56
<b>Total</b>	<b>65.23</b>	<b>65.11</b>	<b>-0.2</b>	<b>29.20</b>	<b>31.21</b>	<b>6.9</b>

Source: Indus River System Authority

Pakistan is a water stressed country and, therefore, efficient use of water is important for provision of safe drinking water, sustainable agricultural and industrial growth. The agriculture sector, core of national economy and food security, is highly vulnerable to changes in water availability. In the wake of imminent water crisis, inclusive and comprehensive planning is imperative. One of the major objectives of the National Water Policy (2018) is to enhance the water storage capacity of Pakistan by adding 10 MAF. At present, the water storage capacity of Pakistan is around 13.68 MAF for 30 day. To overcome water scarcity and to enhance storage capacity, two major storage dams (Diamer Basha and Mohmand Dam) along with 518 medium and small dams with total storage capacity of 8.33 MAF have been initiated throughout the country.

The ongoing Water Sector Development Programme, costing Rs 1,151 billion, centres around five important elements, which are water augmentation, water conservation, groundwater management, protection of infrastructure from water logging/salinity and floods and proposition of institutional reforms. Future water sector development strategies/policies aim at construction of small/medium and large dams and development of existing irrigation and drainage infrastructure.

### Major Achievement during FY2021

Despite the COVID-19 pandemic, all efforts were made to fully protect the on-going water sector development programme during FY2021. Following major objectives are expected to achieve by the end of current FY2021:

- ▶ Completion of 22 on-going projects at a cost of Rs 124 billion, resulting in bringing about 40 thousand acres area under cultivation especially in Balochistan
- ▶ About 1.567 million acres of agriculture land protected from water logging & salinity by completion of RBOD-I & III in Sindh
- ▶ Rainwater harvesting of 0.21 MAF through construction of small dams for irrigation, flood protection and drinking water supplies for more than 10,000 people in Balochistan
- ▶ Employment generation for about 10,000 people (direct/indirect)
- ▶ Recharging 1,000 wells/tube wells and improvement of about 400 Karezes in Balochistan
- ▶ Around Rs 46 billion allocated for construction of large/medium dams followed by Rs 10 billion for construction of small/recharge/check dams
- ▶ Safe disposal of drainage effluent into sea through construction of RBOD-I,II & III
- ▶ For remodeling of existing irrigation system, a sum of Rs 961 million is planned to be expended. However, the programme will be gradually transferred to the provinces
- ▶ About Rs 6.84 billion are expected to be incurred for construction of new canals (Kachhi, Rainee, Warsak and Maki Farash Link Canal)

Major water sector projects under implementation are given in Table 2.17.

**Table 2.17: Major Water Sector Projects**

Project	Location	App. cost (Rs million)	Live Storage	Irrigated Area	Status
Basha Dam (Dam Part only)	Khyber Pakhtunkhwa & Gilgit Baltistan	479,000	6.40 MAF	Not applicable (4,500 MW Power Gen.)	Rs 43.8 billion has been incurred upto June 2020 in addition to Rs 16 billion during 2020-21, for timely completion.
Kachhi Canal (Phase-I) Remaining Works	Balochistan	22,921	-	72,000 Acres	Phase-I completed. Out of 102,000 acres CCA about 50,000 acres have been developed of Dera Bugti district of Balochistan.
Nai Gaj Dam	Sindh	26,236	160,000 (Acre Ft)	28,800 Acres (4.2 MW Power Gen.)	52 % Physical works completed, 2 <sup>nd</sup> Revised PC-I costing Rs 46 billion in approval process.
KurramTangi Dam (Phase-I, Kaitu Weir)	Khyber Pakhtunkhwa	21,059	0.90 MAF	84,380 Acre New 278,000 Acres Existing (18.9 MW Power Gen.)	56% Physical works completed.
Naulong Dam	Balochistan	18,027	0.20 MAF	47,000 Acres (4.4 MW Power Gen.)	Feasibility & Detailed Engg. Design completed. Updated 2 <sup>nd</sup> revised PC-I costing Rs35,484 million is under approval process.

**Table 2.17: Major Water Sector Projects**

Project	Location	App. cost (Rs million)	Live Storage	Irrigated Area	Status
Mohmand Dam Hydropower Project (800 MW)	Mohmand District of Khyber Pakhtunkhwa	114,285 (dam part) cost	0.676 MAF	16,737 Acres (800 MW Power Gen.)	Rs 25.51 billion has been incurred upto June 2020 in addition to Rs 7.0 billion during 2020-21 for timely completion of this priority project.
Right Bank Outfall Drain				RBOD-II will help to dispose 3,520 cusecs of drainage effluent into Sea received from RBOD-I & III	
RBOD-I	Sindh	17,505	-		Completed.
RBOD-II	Sindh	61,985	-		72% completed.
RBOD-III	Balochistan	10,804	-		98% completed.

Source: Ministry of Planning, Development & Special Initiatives

Implementation of water management projects launched during FY2020 under the Prime Minister's Agriculture Emergency Programme to "Conserve and increase Productivity of Water" continued during FY2021. The overall progress of these projects is given hereunder:

a) The project "**National Programme for Improvement of Watercourses in Pakistan-Phase-II**" envisages to improve, reconstruct/renovate 47,278 water courses, 50 percent of the total length of watercourses and construct 14,932 water storage tanks. In addition, 11,610 Laser Land Levelers will be provided to beneficiaries at 50 percent cost sharing basis (maximum share of government: Rs 250,000 per beneficiary). The total project cost of Rs 154.542 billion over a period of 05 years which will be shared by the federal and provincial governments and the beneficiaries. The project is being implemented in the provinces of Punjab, Khyber Pakhtunkhwa, Balochistan and in Gilgit-Baltistan, Azad Jammu and Kashmir and the Islamabad Capital Territory (ICT). Key objectives of the project are:

- ▶ Social mobilization through capacity building of Water User's Associations/ Farmer Organizations
- ▶ Minimization of conveyance and field application losses
- ▶ Reduction in water logging and salinity
- ▶ Equity in water distribution
- ▶ Reduction in water disputes/thefts/litigation
- ▶ Motivation/participation of farmers
- ▶ Poverty reduction through employment generation
- ▶ Increase in crops yield/self-sufficiency in food

So far improvement of 5,237 watercourses and construction of 1,439 has been completed. Similarly, 1,975 Laser Land Levelers have been distributed to beneficiaries.

b) The project titled "**Water Conservation in Barani Areas of Khyber Pakhtunkhwa**" envisages construction of water ponds, check dams, water reservoirs, stream banks stabilization, terracing, sand-dune stabilization, installation and solarisation of tube wells etc in Barani areas of Khyber



Pakhtunkhwa. The total project cost of Rs 14.177 billion over a period of 05 years will be shared between the federal and provincial government and the beneficiaries.

The project envisages to:

- ▶ Conserve land and water resources through various interventions for supplemental irrigation, livestock, farm forestry and fish farming
- ▶ Increase cropping intensity and per unit of land and water productivity
- ▶ Improve livelihood standards of poor farmers
- ▶ Improve socio-economic stability

c) Implementation of project “**National Programme for Enhancing Command Area in Barani Areas of Pakistan**” started during the current financial year. The project is to be implemented in all provinces including AJK, GB, and ICT over a period of five year. The project cost of Rs 25.345 billion will be shared by the federal and provincial governments and the beneficiaries. The project envisaged to:

- ▶ Save about 42,180 acre feet runoff water for irrigation and barani areas
- ▶ Bring more than 170,000 acres of land under irrigated agriculture through various project interventions
- ▶ Provide more than 39,000 KW clean energy (solar) at farms
- ▶ Bring 45,518 acres under fruit trees, 112,189 acres under oilseed/pulses, and 81,676 acres under better fodder/forage/rangeland for livestock
- ▶ Increase income of farmers besides improving socio-economic conditions of barani area farmers

Despite a late start, project activities are gaining pace and current year targets are likely be achieved.

#### iv) Agricultural Credit

In pursuance of the government’s agenda for promoting agriculture sector, the State Bank of Pakistan (SBP) has assigned an indicative agriculture credit disbursement target of Rs 1,500 billion for FY2021, 23.5 percent higher than last year’s disbursement of Rs 1,215 billion. Currently, 50 agriculture lending institutions are providing agricultural loans to farmers including five major commercial banks, two specialized banks (ZTBL & PPCBL), 14 domestic private banks, 5 Islamic banks, 11 microfinance banks and 13 microfinance institutions/rural support programmes (MFIs/RSPs).

Despite the pandemic, agriculture credit disbursement is encouraging. During FY2021 (July-March), the agriculture lending institutions have disbursed Rs 953.7 billion which is 63.6 percent of the annual target and 4.6 percent higher than the disbursement of Rs 912.2 billion during the same period last year. However, the outstanding portfolio of agriculture loans has increased by Rs 29.7 billion i.e., from Rs 572.1 billion to Rs 601.8 billion or 5.2 percent at end March 2021 as compared to same period last year. In terms of outreach, the number of outstanding borrowers has reached 3.5 million in March 2021. The comparative disbursements of agriculture lending banks/institutions against their annual indicative targets are presented in Table 2.18:

Banks	Target FY2020	FY2020 (July-March)		Target FY2021	FY2021 (July-March)		% Change over the Period
		Disbursed	Achieved (%)		Disbursed	Achieved (%)	
Major Commercial Banks (5)	705	515.2	73.1	800	554.2	69.3	7.6
ZTBL	100	52.5	52.5	105	56.5	53.8	7.6
PPCBL	13	6.3	48.8	13	5.2	39.8	-18.4
DPBs (14)	253.6	169.3	66.8	296	192.5	65.0	13.7
Islamic Banks (5)	55	31.0	56.3	63	35.9	57.0	15.9
MFBs (11)	184	115.2	62.6	182	92.8	51.0	-19.4
MFIs/RSPs	39.4	22.7	57.5	41	16.6	40.5	-26.6
<b>Total</b>	<b>1,350</b>	<b>912.2</b>	<b>67.7</b>	<b>1,500</b>	<b>953.7</b>	<b>63.6</b>	<b>4.6</b>

Source: State Bank of Pakistan

Sector-wise analysis of disbursement reveals that out of the total disbursement of Rs 953.7 billion, the farm sector has received Rs 507.9 billion (53.3 percent) while Rs 445.8 billion (46.7 percent) has been disbursed to non-farm sector during FY2021 (July-March). The agricultural data of farm credit by land holdings reveals that Rs 150.0 billion has been disbursed to subsistence farm size (8.4 percent growth) and Rs 56.2 billion to economic farm size and Rs 301.7 billion to the above economic farm size (12.7 percent growth). Under non-farm sector, agriculture lending institutions disbursed Rs 102.1 billion to small farms, a negative growth mainly due to lower credit offtake especially in poultry sector. An amount of Rs 343.7 billion has been disbursed to large farms showing a positive growth of 3 percent. The sector-wise comparative details of credit disbursements are given below in Table 2.19.

Sector (Land Holding/Farm size)	FY2020 (July-March)		FY2021 (July-March)		% Growth over the Period
	Disbursement	% Share in Total	Disbursement	% Share in Total	
<b>A Farm Sector</b>	<b>459.6</b>	<b>50.4</b>	<b>507.9</b>	<b>53.3</b>	<b>10.5</b>
1 Subsistence Holding <sup>1</sup>	138.3	15.2	150.0	15.7	8.4
2 Economic Holding <sup>2</sup>	53.5	5.9	56.2	5.9	5.1
3 Above Economic Holding <sup>3</sup>	267.8	29.4	301.7	31.6	12.7
<b>B Non-Farm Sector</b>	<b>452.6</b>	<b>49.6</b>	<b>445.8</b>	<b>46.7</b>	<b>-1.5</b>
1 Small Farms	118.8	13.0	102.1	10.7	-14.1
2 Large Farms	333.8	36.6	343.7	36.0	3.0
<b>Total (A+B)</b>	<b>912.2</b>	<b>100.0</b>	<b>953.7</b>	<b>100.0</b>	<b>4.6</b>

Source: State Bank of Pakistan

In terms of sectoral and purpose wise performance of agriculture credit sectors, the production loans of farm sector grew by 5.0 percent and development loans increased by 93.7 percent during the period FY2021 (July-March). The livestock/dairy and meat sector witnessed 5.6 percent growth with poultry sector recording 11.2 percent decline

<sup>1</sup> Landholding in acres (Punjab and KPK up to 12.5, Sindh up to 16.0 and Balochistan up to 32.0)

<sup>2</sup> Landholding in acres (Punjab and KPK 12.5-50.0, Sindh 16.0-64.0 and Balochistan 32.0-64.0)

<sup>3</sup> Landholding in acres (Punjab and KPK above 50.0, Sindh and Balochistan above 64.0)

during the period under review. The sector wise/purpose wise agricultural credit disbursements are shown in Table-2.20:

Sector & Purpose		FY2020 (July-March)		FY2021 (July-March)		% Growth over the Period
		Amount Disbursed	% Share within Sector	Amount Disbursed	% Share within Sector	
<b>A</b>	<b>Farm Sector</b>	<b>459.6</b>	<b>50.4</b>	<b>507.9</b>	<b>53.3</b>	<b>10.5</b>
1	Production Loans	430.9	93.8	452.4	89.1	5.0
2	Development Loans	28.7	6.2	55.6	10.9	97.7
<b>B</b>	<b>Non-Farm Sector</b>	<b>452.6</b>	<b>49.6</b>	<b>445.8</b>	<b>46.7</b>	<b>-1.5</b>
1	Livestock/Dairy & Meat	236.7	52.3	250.1	56.1	5.6
2	Poultry	177.9	39.3	158.0	35.4	-11.2
3	Fisheries	4.1	0.9	5.3	1.2	30.1
4	Forestry	0.015	0.003	0.011	0.003	-23.7
5	Others	33.9	7.5	32.4	7.3	-4.4
<b>Total (A+B)</b>		<b>912.2</b>	<b>100.0</b>	<b>953.7</b>	<b>100.0</b>	<b>4.6</b>

Source: State Bank of Pakistan

### SBP's Initiatives for the Promotion of Agriculture Financing

For promotion of agricultural financing, some of the major initiatives taken by SBP in collaboration with federal and provincial governments are as under:

- 1. Loan repayment relief to dampen the effects of COVID-19:** The banks have been instructed to defer principal amount of agricultural loans for one-year on borrowers' request. Regulatory space is also provided to facilitate banks in rescheduling/restructuring of loans for borrowers who cannot service markup or need deferment exceeding one year. In this regard, as of April 16, 2021, MFBs provided relief in terms of deferred/restructured/rescheduled loans of Rs 121.3 billion to 1.72 million microfinance borrowers and relief of Rs 11.6 billion to 27,216 agricultural borrowers.
- 2. Crop Loan Insurance Scheme (CLIS):** In 2008, the Government of Pakistan (GoP) introduced the mandatory crop loan insurance scheme for five major crops i.e. wheat, rice, cotton, sugarcane and maize to mitigate the risk of losses of farmer in case of calamities. The insurance premium is borne by the government up to maximum of 2 percent per crop per season for the farmers having land holding up to 25 acres in all provinces except Balochistan where the eligibility of land holding is 32 acres. During the period July 2008 to December 2020, banks have submitted premium claims of Rs 9.4 billion against 6.54 million beneficiaries.
- 3. Livestock Insurance Scheme for Borrowers (LISB):** To minimize the risk of disease or death of animals due to accidents and natural calamities in livestock & dairy sector, the farmers' have improved access to LISB since 2013. The scheme covers small farmers having up to 10 animals and the government bears premium subsidy up to 4 percent per annum. During the period July 2014 to December 2020, banks have submitted premium claims of Rs 2.84 billion against 0.82 million beneficiaries.

- 4. Adoption of Automation of Land Record for Agriculture Financing:** SBP facilitated in creating partnerships between Punjab Land Revenue Authority (PLRA) and banks for integration of the Land Record Management Information System (LRMIS) with the banks to enable online assessment and charge creation on agricultural land for loans to farmers. As many as 35 agriculture lending banks have signed MOUs with PLRA, of which 25 banks have been brought on board and are verifying revenue documents and also generating 'Fard' (title document) through this integrated online system. Further, to help other provinces gear up their land record automation efforts, SBP has facilitated peer learning of provincial and regional land revenue authorities by organizing online knowledge sharing sessions.
- 5. Implementation of Credit Guarantee Scheme for Small and Marginalized Farmers:** The government announced the Credit Guarantee Scheme for Small & Marginalized Farmers in federal budget 2014-15. The scheme aims to encourage financial institutions to lend to those small farmers who do not have adequate collateral (acceptable to banks) to meet their working capital requirements. Since 2016, more than 114,000 borrowers have benefitted from the scheme with loans amounting to Rs19.4 billion.
- 6. Regulatory Space for Innovative Financing:** Relevant Prudential Regulations have been amended to allow Electronic Warehouse Receipt (EWR) as acceptable collateral for bank financing. Further, the maximum tenure for agriculture development loans have been increased to 10 years to encourage development and mechanization for efficiency, resource conservation and yield enhancement. Additionally, Report on Indicative Credit Limits and Eligible Items for Agriculture Financing has also been revised to allow banks to provide loans to farmers as per their internal policies. This will also facilitate provincial planning departments in estimating the total financial and credit requirements of provinces/regions for agriculture sector.
- 7. Government of Punjab E-Credit Scheme:** SBP has facilitated the Government of Punjab in designing and implementing the E-Credit scheme wherein E-Passbook and other automated land revenue records, accessible through an online portal, are being used by participating financial institutions (ZTBL, NBP, Telenor Microfinance Banks, Akhuwat and NRSP) to provide interest free loans to small farmers. Up to Rabi 2019-20, total loan amount of around Rs 62 billion had been disbursed to 890,000 small farmers.
- 8. Workshops/Trainings/Capacity & Awareness Building:** SBP regularly organizes various training programmes and awareness sessions both on-field and virtual to meet demand and supply side capacity building requirements of agriculture finance stakeholders including banks and farmers. These training programmes include Farmers Financial Literacy Programmes and awareness sessions on Agricultural Value Chain Financing, Job Fairs for Agriculture Graduates, Warehouse Receipt Financing, Islamic Agricultural Financing etc.

### III. Forestry

Pakistan is a forest deficient country, mainly due to arid and semi-arid climate in large parts of the country. The country is maintaining 4.51 million hectares, to 5.01 percent area under forest cover out of which 3.44 million hectares forests exist on state-owned

lands and remaining on communal and private lands. Though forests have a meager share of 2.1 percent in agriculture, they provide foundations of life, regulate climate and water resources, and serve as a habitat for plants and animals.

Rapidly growing population coupled with poverty and lack of awareness has led to illegal and unsustainable logging, and overharvesting of wood for fuel and charcoal. Forest fires, natural hazards, pests and diseases further contribute to the declining forest cover. These challenges threaten the survival of species, people's livelihoods and undermine the vital services that forests provide.

#### IV. Livestock and Poultry

##### a) Livestock

Over the years livestock has emerged as the largest subsector in agriculture. The sector contributed 60.1 percent to the agriculture value addition and 11.5 percent to the GDP during FY2021. More than 8 million rural families are engaged in livestock production and deriving more than 35-40 percent of their income from this source. Gross value addition of livestock increased to Rs 1,505 billion (2020-21) from Rs 1,461 billion (2019-20), an increase of 3.0 percent.

The government has renewed its focus on the livestock sector for economic growth, food security, and poverty alleviation in the country. The overall livestock development strategy resolves to foster "private sector-led development with public sector providing enabling environment through policy interventions". The regulatory measures are aimed at improving per unit animal productivity by improving health coverage, management practices, animal breeding practices, artificial insemination services, use of balanced ration for animal feeding, and controlling livestock diseases.

To address investment related issue in the value added livestock export sector, government is considering to develop meat export processing zones, (for Foot & Mouth Disease (FMD), Peste des Petitis Ruminants (PPR), Highly Pathogenic Avian Influenza (HPAI), facilitate setting up of modern slaughterhouses and introduce various schemes to facilitate access to finances. The focus is on breed improvement for enhanced productivity, establishment of nucleus herd and identification of breeds that are well adapted to various agriculture climatic zones of Pakistan.

The national herd population of livestock for the last three years is given in Table 2.21.

Species	2018-19 <sup>1</sup>	2019-20 <sup>1</sup>	2020-21 <sup>1</sup>
Cattle	47.8	49.6	51.5
Buffalo	40.0	41.2	42.4
Sheep	30.9	31.2	31.6
Goat	76.1	78.2	80.3
Camels	1.1	1.1	1.1
Horses	0.4	0.4	0.4
Asses	5.4	5.5	5.6
Mules	0.2	0.2	0.2

<sup>1</sup>: Estimated figure based on inter census growth rate of Livestock Census 1996 & 2006

Source: Ministry of National Food Security & Research

The position of milk and meat production for the last three years is given in Table 2.22.

Species	2018-19 <sup>1</sup>	2019-20 <sup>1</sup>	2020-21 <sup>1</sup>
<b>Milk (Gross Production)</b>	<b>59,759</b>	<b>61,690</b>	<b>63,684</b>
Cow	21,691	22,508	23,357
Buffalo	36,180	37,256	38,363
Sheep <sup>2</sup>	40	41	41
Goat	940	965	991
Camel <sup>2</sup>	908	920	932
<b>Milk (Human Consumption)<sup>3</sup></b>	<b>48,185</b>	<b>49,737</b>	<b>51,340</b>
Cow	17,353	18,007	18,686
Buffalo	28,944	29,805	30,691
Sheep	40	41	41
Goat	940	965	991
Camel	908	920	932
<b>Meat<sup>4</sup></b>	<b>4,478</b>	<b>4,708</b>	<b>4,955</b>
Beef	2,227	2,303	2,380
Mutton	732	748	765
Poultry meat	1,518	1,657	1,809

1: The figures for milk and meat production for the indicated years are calculated by applying milk production parameters to the projected population of respective years based on the inter census growth rate of Livestock Census 1996 & 2006.

2: The figures for the milk production for the indicated years are calculated after adding the production of milk from camel and sheep to the figures reported in the Livestock Census 2006.

3: Milk for human consumption is derived by subtracting 20 percent wastage (15 percent faulty transportation and lack of chilling facilities and 5 percent in suckling calf nourishment) of the gross milk production of cows and buffalo.

4: The figures for meat production are of red meat and do not include the edible offal's.

Source: Ministry of National Food Security & Research

The estimated production of other livestock products for the last three years is given in Table 2.23.

Species	Units	2018-19 <sup>1</sup>	2019-20 <sup>1</sup>	2021-21 <sup>1</sup>
Eggs	Million Nos.	19,052	20,133	21,285
<b>Hides</b>	<b>000 Nos.</b>	<b>17,547</b>	<b>18,139</b>	<b>18,751</b>
Cattle	000 Nos.	9,063	9,405	9,759
Buffalo	000 Nos.	8,373	8,622	8,878
Camels	000 Nos.	111	112	114
<b>Skins</b>	<b>000 Nos.</b>	<b>58,116</b>	<b>59,460</b>	<b>60,837</b>
Sheep Skin	000 Nos.	11,669	11,807	11,947
Goat Skin	000 Nos.	29,334	30,129	30,946
Fancy Skin	000 Nos.	17,113	17,524	17,945
Lamb skin	000 Nos.	3,466	3,507	3,548
Kid skin	000 Nos.	13,647	14,017	14,397
Wool	000 Tonnes	46.8	47.3	47.9
Hair	000 Tonnes	28.6	29.4	30.2
Edible Offal's	000 Tonnes	428	440	452
Blood	000 Tonnes	71.3	73.1	75.0
Casings	000 Nos.	58,712	60,069	61,461
Guts	000 Nos.	18,654	19,280	19,929
Horns & Hooves	000 Tonnes	62.4	64.3	66.2
Bones	000 Tonnes	932.5	961.0	990.3

**Table 2.23: Estimated Livestock Products Production**

Species	Units	2018-19 <sup>1</sup>	2019-20 <sup>1</sup>	2021-21 <sup>1</sup>
Fats	000 Tonnes	295.8	304.5	313.6
Dung	000 Tonnes	1,322	1,362	1,405
Urine	000 Tonnes	401	413	425
Head & Trotters	000 Tonnes	267.0	274.6	282.4
Ducks, Drakes & Ducklings	Million Nos.	0.40	0.38	0.37

<sup>1</sup>: The figures for livestock product for the indicated years were calculated by applying production parameters to the projected population of respective years.

Source: Ministry of National Food Security & Research

## b) Poultry

Poultry sector is one of the most important sub-sectors of livestock sector as it provides employment to more than 1.5 million people in country. With an investment of more than Rs 750 billion, this industry is growing at an impressive rate of approximately 7.5 percent per annum over the last decade. Pakistan is now placed at the 11<sup>th</sup> position among the largest poultry producers of the world and has ample space for further improvement.

The Poultry Development Strategy revolves around disease control, hi-tech poultry production, processing, value addition, improving poultry husbandry practices and diversification of products. Through farmer friendly policies, the government has been encouraging rural as well as commercial poultry production. The estimated production of commercial and rural poultry products for the last three years is given in Table 2.24.

**Table 2.24: Estimated Domestic/Rural & Commercial Poultry**

Type	Units	2018-19 <sup>1</sup>	2019-20 <sup>1</sup>	2020-21 <sup>1</sup>
<b>Domestic Poultry</b>	<b>Million Nos.</b>	<b>88.49</b>	<b>89.84</b>	<b>91.22</b>
Cocks	Million Nos.	12.18	12.51	12.85
Hens	Million Nos.	43.15	43.93	44.72
Chicken	Million Nos.	33.16	33.40	33.65
Eggs <sup>2</sup>	Million Nos.	4,315	4,393	4,472
Meat	000 Tonnes	122.28	124.72	127.22
<b>Duck, Drake &amp; Duckling</b>	<b>Million Nos.</b>	<b>0.40</b>	<b>0.38</b>	<b>0.37</b>
Eggs <sup>2</sup>	Million Nos.	17.93	17.18	16.47
Meat	000 Tonnes	0.54	0.52	0.50
<b>Commercial Poultry</b>	<b>Million Nos.</b>	<b>1,232.33</b>	<b>1,353.24</b>	<b>1,486.09</b>
Layers	Million Nos.	55.91	59.82	64.01
Broilers	Million Nos.	1,163.42	1,279.76	1,407.73
Breeding Stock	Million Nos.	13.01	13.66	14.34
Day Old Chicks	Million Nos.	1,215.19	1,336.71	1,470.38
Eggs <sup>2</sup>	Million Nos.	14,719	15,723	16,797
Meat	000 Tonnes	1,395.02	1,531.60	1,681.64
<b>Total Poultry</b>				
Day Old Chicks	Million Nos.	1,248	1,370	1,504
Poultry Birds	Million Nos.	1,321	1,443	1,578
Eggs	Million Nos.	19,052	20,133	21,285
Poultry Meat	000 Tonnes	1,518	1,657	1,809

<sup>1</sup>: The figures for the indicated years are statistically calculated using the figures of 2005-06.

<sup>2</sup>: The figures for Eggs (Farming) and Eggs (Desi) are calculated using the poultry parameters for egg production.

Source: Ministry of National Food Security & Research

### Ongoing Projects

The federal government has launched following programmes under the “Prime Minister’s National Agriculture Emergency Programme”:

**Back Yard Poultry:** Under this project five million pre-vaccinated high laying backyard birds will be distributed among public across the country at subsidized rates in four years. This will provide livelihood and adequate animal protein to undernourished population. The total cost of the project is Rs 1.6 billion and 30 percent will be contributed jointly by federal and provincial governments while rest of the cost is expected to be borne by the beneficiary.

**Safe the Calf:** Under this project, 380,000 male calves have been projected to be saved from early slaughter in 4 years period through financial incentive of Rs 3,000 per calf to farmers besides reducing mortality with improved nutrition and husbandry practices. The intervention will provide stock for feedlot fattening for enhanced productivity and quality beef which ultimately result in high profit margins for the farmers and reduced rural poverty. The total cost of the project is Rs 3.4 billion. The federal government will contribute 20 percent of total cost while the remaining will be shared by provincial governments.

**Calf Feedlot Fattening in Pakistan:** Under this programme Rs 4,000 for each calf has been allocated as financial incentive to persuade farmers to produce healthy and nutritious beef in the country. The intervention will promote feedlot fattening business in the country. The total cost of the project is Rs 2.4 billion.

The following two projects are also being launched by federal government:

- i. **Development of Yak at High Altitude Area of Pakistan (Gilgit-Baltistan):** The main objective of the project is to increase the population of Yak in potential valleys of Gilgit–Baltistan through support and training to Yak farmers for proper feedings, breeding, disease control, fattening and marketing. Under this project assistance will also be provided for development of hygienic butcheries in the private sector with the aim to improve livelihood of farmers and self-sustaining Yak entrepreneurs. The total cost of the project is Rs 54.0 million.
- ii. **National Peste Des Petits Ruminants (PPR) Eradication Programme:** Under this project efforts will be made to move Pakistan into Stage 3 of the progressive step-wise approach of Office International des Epizooties (OIE) for PPR eradication in next five years. This will be achieved by maintaining an efficient surveillance system through better coordination between different laboratories and the use of bio-molecular techniques for epidemiology of PPR in Pakistan. The total cost of the project is Rs 1.8 billion.

### Government Policy Measures

M/o NFS&R with its re-defined role under the 18<sup>th</sup> Constitutional Amendment undertook the following measures: i) Import of high yielding dairy cattle breeds of Holstein-Friesian and Jersey for enhanced milk production ii) Provision of semen and



embryos of high yielding animals for the genetic improvement of indigenous low producing animals iii) Import of high quality feed stuff/micro ingredients for improving the nutritional quality of animals & poultry feed, and iv) Import of dairy, meat and poultry processing machinery/equipments at concessional tariff/duty in order to encourage and promote the establishment of value addition in the country.

### **Future Plans**

M/o NFS&R plans to focus on the following in future:

- Inter-provincial coordination for development of livestock sector
- Coordination with private sector to promote value addition in livestock industry and diversification of livestock production
- Control of Trans-boundary Animal Diseases (FMD, PPR, Zoonotic diseases) of trade and economic importance through provincial participation
- Bringing more investments in livestock sector
- Exploring new markets for export of meat and dairy products with focus on global Halal food trade market
- Development of national breeding policy

### **V. Fisheries**

Fisheries as a subsector of agriculture, plays an important role in the national economy and towards food security of the country by reducing pressure on demand for mutton, beef, and poultry. It is also considered to be an important source of livelihood for the coastal population. Besides marine fishery, inland fishery (based in rivers, lakes, dams etc.) is also an important activity throughout the country. Although the share of fisheries in GDP is negligible, it contributes to the national income through export earnings.

During FY2021 (July-March), fish production remained at 690.600 thousand metric tonnes of which 465.200 thousand metric tonnes was from marine and the remaining was produced by inland fishery sector. Fish production in FY2020 (July-March) was 701.726 thousand metric tonnes in which 474.025 thousand metric tonnes was from marine and the remaining from the inland fishery sector. The production of fish & fishery products has witnessed a decreased of 1.5 percent.

During FY2021 (July-March), 136.370 thousand metric tonnes of fish and fishery preparation valued, at US\$ 303.606 million (Rs 48,945 million), were exported. Pakistan's major buyers are China, Thailand, Malaysia, Middle East, Sri Lanka, and Japan. Export during FY2020 (July-March) were 130.148 thousand metric tonnes which earned US\$ 317.305 million (Rs 49,527 million). The exports have, therefore, increased by 4.78 percent in quantity term whereas in US\$ value terms it decreased by 4.32 percent.

Government of Pakistan is undertaking several steps to improve the fisheries sector and its exports. A number of initiatives are being taken by federal and provincial fisheries departments including strengthening of extension services, introduction of new fishing methodologies, development of value added products, enhancement of per capita

consumption of fish, up gradation of socio-economic conditions of the fishermen community and a review of Deep Sea Fishing Policy of 2018.

**Export of Fish and Fishery Products to the European Union (EU) countries:** Since resumption of exports to the EU countries, several consignments of fish, cuttlefish and shrimps have been sent by 02 companies to the EU. These were cleared successfully after 100 percent laboratory analysis at EU borders. For further enhancement of seafood export to EU countries, six more processing plants are in pipeline and their cases for approval are under process with EU authorities. Export of seafood to EU countries is given in Table 2.25:

**Table 2.25: Export of Seafood to EU Countries FY2021 (July-March)**

Commodity / Country	Fish		Squids		Shrimp		Crabs		Total	
	Quantity (MT)	Value \$ (000)	Quantity (MT)	Value \$ (000)	Quantity (MT)	Value \$ (000)	Quantity (MT)	Value \$ (000)	Quantity (MT)	Value \$ (000)
Belgium	314	750	-	-	1,304	6,761	-	-	1,618	7,511
Netherland	209	595	3	14	47	169	-	-	259	778
Spain	-	-	191	356	-	-	-	-	191	356
UK	979	3,528	22	76	213	726	3	13	1,217	4,343
<b>Total</b>	<b>1,502</b>	<b>4,873</b>	<b>216</b>	<b>446</b>	<b>1,564</b>	<b>7,656</b>	<b>3</b>	<b>13</b>	<b>3,285</b>	<b>12,988</b>

Source: Marine Fisheries Department

**Box Item-III: Impact of COVID-19 and Other Shocks on Food Security and Livelihood of Rural Population**

Food and Agriculture Organization of the United Nations (FAO) and the World Food Programme (WFP), in collaboration with the Food Security & Agriculture Working Group (FSAWG) conducted a Food Security and Livelihood Assessment (FSLA) in 21 vulnerable districts in Sindh, Balochistan and Punjab provinces in Pakistan during October-November 2020, to better understand the food security and livelihood situation of the households in the areas affected by multiple shocks (Locust, COVID-19, monsoon rains/flooding etc.). In total, 4,700 households were surveyed during the assessment in the 21 rural districts of Pakistan (9 in Sindh, 10 in Balochistan and 2 in Punjab).

As per the assessment results, overall around two-third of the surveyed households were moderately food insecure, whereas about two-fifth were severely food-insecure based on 12 months reference period. The analysis by provinces showed highest prevalence of moderate food insecurity in surveyed districts of Balochistan (70.7 percent) followed by surveyed districts of Sindh (58.2 percent) and two surveyed districts of Punjab (52.6 percent). Further, prevalence of severe food insecurity was also remained highest in Balochistan (49.1 percent) followed by Sindh (42.7 percent) and Punjab (25.4 percent).

In terms of impact of COVID-19 on food insecurity, the analysis of FIES data shows that apparently COVID-19 has contributed to high prevalence of food insecurity as overall around half (48 percent) of the surveyed households were moderately food insecure because of COVID-19, whereas one-third were severely food-insecure. Provincial analysis depicts highest prevalence of moderate food insecurity because of COVID-19 in Balochistan (60 percent) followed by Sindh (45 percent) and Punjab (27 percent). Whereas severe food insecurity due to COVID-19 was also highest in Balochistan (38 percent) followed by Sindh (34 percent) and Punjab (14 percent).

In contrast, prevalence of food insecurity (due to COVID-19) is slightly lower among households with agriculture based livelihood sources than in other two groups of households. Further, the analysis by livelihood sources shows slightly higher prevalence of food insecurity (general) among surveyed households who earn their income/livelihood from agriculture based activities, than those which earn livelihood/income from non-agriculture wage labour and other sources. Though no significant

difference was found in prevalence of food insecurity across the households with three livelihood groups

Overall, around two-fifth (43 percent) of the surveyed households reported their household livelihood/income was severely affected by locust infestation followed by (26 percent) moderately affected and remaining (31 percent) slightly/not affected. Provinces-wise surveyed households reported their livelihood/income affected by locust, severely (27 percent in Sindh, 69 percent in Punjab and 53 percent in Balochistan) and moderately (32 percent in Sindh, 11 percent in Punjab and 24 percent in Balochistan).

In case of impact of rains/flooding on household livelihood/income, 37 percent of the surveyed households reported were severely affected followed by moderately affected (26 percent), whereas 37 percent slightly/not affected. Across the provinces, 36 percent in Sindh, 37 percent in Punjab and 39 percent in Balochistan reported severely affected whereas 29 percent in Sindh, 28 percent in Punjab and 20 percent in Balochistan reported moderately affected.

Furthermore, 31 percent of the surveyed households reported their household livelihood/income was severely affected by COVID-19/lockdown followed by 30 percent moderately affected and 39 percent slightly/not affected. Across the provinces, 25 percent surveyed households in Sindh, 13 percent in Punjab and 40 percent in Balochistan reported severely affected, whereas moderate effect of COVID-19/lockdown was reported by 37 percent surveyed households in Sindh, 21 percent in Punjab and 26 percent in Balochistan. More than half of the surveyed households (53 percent) reported reduction in their income due to COVID-19/lockdown; 54 percent of the surveyed households in Sindh, 41 percent in Punjab, and 55 percent in Balochistan.

Source: FAO, Pakistan

### Way Forward:

Agriculture sector has a strong linkage with food security and growth of other sectors of economy. The present government has assigned high priority to growth of agriculture sector on sustainable basis and is implementing the most appropriate policies to achieve the desired outcome. The government's Rabi/Kharif packages for growth of agriculture will further improve its output and trickle down to farmers. The emphasis is on the use of better quality seed, and modern technologies to ameliorate agriculture outlook and food security.