

AGRICULTURE

Agriculture is still the largest sector of the economy of Pakistan in terms of labour participation and as such livelihood of the majority of the population directly or indirectly depends on it. However, during the last few decades, its contribution to GDP has gradually decreased to 19.3 percent however there is a lot of potential in the sector to increase its share in GDP through increased productivity utilization of latest agricultural technologies. Being the sector engaging the largest workforce and providing raw material to most manufacturing sector, its development not only contributes towards achieving poverty alleviation but can also uplift socio-economic structure of a major segment of the population. During FY2020, the performance of agriculture sector improved over the last year and it also performed better than other sectors. However, the challenges due to climate change, pest attacks, shortage of water etc., kept agriculture production far less than the potential. One key issue related to agriculture is that the farmers have limited direct access to the market due to which the role of middleman remains crucial. And farmers normally do not receive fair market price of their produce. In terms of potential, agriculture sector has the capacity to not only produce for the domestic population but to have surplus production for exports, which can ensure food security as well as contribute towards foreign exchange earnings.

Realising the potential of agriculture and taking cognizance of the challenges/issues related to agriculture, the present government has introduced “Prime Minister Agriculture Emergency Programme” worth Rs 277 billion to revolutionize the agriculture and livestock sectors. The objectives of the programme include improvements in water availability, soil conservation and shrimp farming. In addition, the programme also includes establishing new agriculture markets which will protect farmers from the exploitation of middlemen. The programme’s vision is “food secure Pakistan, based on modern and efficient food production and distribution systems, can best contribute towards global stability and peace”.

The recent pandemic COVID-19 poses extraordinary challenges for almost all sectors of the economy of Pakistan. The need for maintaining food security and livelihoods has also gained more importance. The cereal markets are expected to remain balanced and comfortable despite uncertainties over the impact of COVID-19. As logistical issues may pose challenges to food supply it is important to take measures for boosting agriculture production which will contribute in mitigating the socio-economic impact of COVID-19.

Agriculture Performance during FY2020

Pakistan has two cropping seasons. “Kharif”, the first sowing season, starts from April to

June and is harvested from October to December. Rice, sugarcane, cotton, maize, moong, mash, bajra and jowar are “Kharif” crops.

“Rabi”, the second sowing season, begins from October to December and is harvested from April to May. Wheat, gram, lentil (masoor), tobacco, rapeseed, barley and mustard are “Rabi” crops. Pakistan’s agricultural productivity is dependent upon the timely availability of water.

Performance of “Kharif” crops; Rice production increased by 2.9 percent to 7.410 million tonnes and Maize production by 6.0 percent to 7.236 million tonnes while Cotton production declined by 6.9 percent to 9.178 million bales and Sugarcane production declined by 0.4 percent to 66.880 million tonnes.

Wheat is the most important crop of “Rabi”, which showed growth of 2.5 percent and reached to 24.946 million tonnes. Other crops having a share of 11.53 percent in agriculture value addition and 2.23 percent in GDP, showed growth of 4.57 percent mainly due to increase in production of pulses, oilseeds and vegetables. Cotton ginning declined by 4.61 percent due to decrease in production of cotton crop.

Thus, the crops sector, overall, experienced a growth of 2.98 percent due to increase in growth of important crops by 2.90 percent mainly due to sufficient availability of inputs (adequate water, certified seeds, pesticides, and an uptick in credit disbursement) despite lower fertilizer off-take.

Livestock having share of 60.56 percent in agriculture and 11.69 percent in GDP achieved the growth at 2.58 percent. The Fishing sector having share of 2.06 percent in agriculture value addition (and 0.40 percent in GDP), grew by 0.60 percent, while Forestry sector having share of 2.13 percent in agriculture (and 0.41 percent in GDP) grew by 2.29 percent.

Thus, the performance of Agriculture during 2019-20 remained remarkable. On the aggregate, the sector recorded strong growth of 2.67 percent considerably higher than 0.58 percent growth achieved last year. (Table 2.1)

Sector	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020(P)
Agriculture	2.50	2.13	0.15	2.18	4.00	0.58	2.67
Crops	2.64	0.16	-5.27	1.22	4.69	-4.96	2.98
i) Important Crops	7.22	-1.62	-5.86	2.60	3.56	-7.68	2.90
ii) Other Crops	-5.71	2.51	0.40	-2.51	6.26	2.59	4.57
iii) Cotton Ginning	-1.33	7.24	-22.12	5.58	8.80	-12.74	-4.61
Livestock	2.48	3.99	3.36	2.99	3.70	3.82	2.58
Forestry	1.88	-12.45	14.31	-2.33	2.58	7.87	2.29
Fishing	0.98	5.75	3.25	1.23	1.62	0.80	0.60

P: Provisional

Source: Pakistan Bureau of Statistics

During 2019-20, the total availability of water for the Kharif crops 2019 reached to 65.2 million acre feet (MAF) showing an increase of 9.4 percent over 59.6 MAF of Kharif 2018 while it remained less by 2.8 percent against the average system usage of 67.1 MAF. During Rabi season 2019-20, the total water availability reached to 29.2 MAF, showing an increase of 17.7 percent over Rabi 2018-19 and 19.8 percent less than the normal availability of 36.4 MAF. (Table 2.2).

Table 2.2: Actual Surface Water Availability (Million Acre Feet)

Period	Kharif	Rabi	Total	% age increase/decrease over the average system usage (103.5 MAF)
Average system usage	67.1	36.4	103.5	-
2010-11	53.4	34.6	88.0	-15.0
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

Source: Indus River System Authority

I. Crop Situation

The important crops (wheat, rice, sugarcane, maize and cotton) account for 21.73 percent in the value addition of agriculture sector and 4.20 percent in GDP. The other crops account for 11.53 percent in the value addition of agriculture sector and 2.23 percent in GDP. The production of important crops is given in Table 2.3.

Table 2.3: Production of Important Crops (000 Tonnes)

Year	Cotton(000 bales)	Sugarcane	Rice	Maize	Wheat
2013-14	12,769	67,460	6,798	4,944	25,979
	(-2.0)	(5.8)	(22.8)	(17.2)	(7.3)
2014-15	13,960	62,826	7,003	4,937	25,086
	(9.3)	(-6.9)	(3.0)	(-0.1)	(-3.4)
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 (P)	9,178	66,880	7,410	7,236	24,946
	(-6.9)	(-0.4)	(2.9)	(6.0)	(2.5)

P: Provisional (July-March), Figures in parentheses are growth/decline rates

Source: Pakistan Bureau of Statistics

a) Important Crops

i) Cotton

Being a major cash crop of Pakistan, cotton is considered the backbone of the economy. It contributes about 0.8 percent to GDP and 4.1 percent of total value addition in agriculture. During 2019-20, cotton crop was sown on an area of 2,527 thousand hectares, which increased by 6.5 percent over last year's area (2,373 thousand hectares). Cotton production is estimated at around 9.178 million bales, which is lower by 6.9 percent over the last year's production of 9.861 million bales (see Table 2.4 and Figure 2.1). Even though the overall area increased over last year, the overall performance remained below due to unfavourable weather and low water availability during important stages of plant development along with pest attacks.

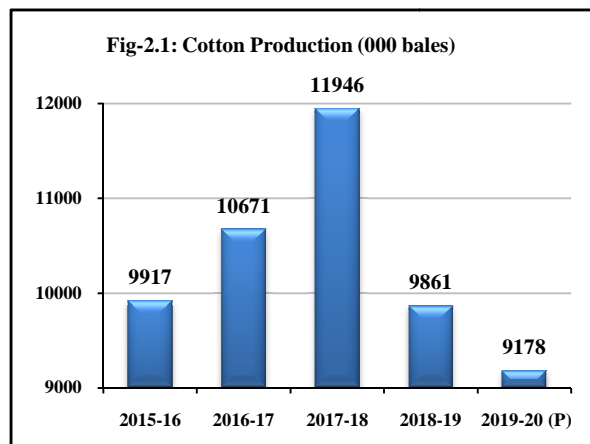


Table 2.4: Area, Production and Yield of Cotton

Year	Area		Production		Yield	
	(000 Hectare)	% Change	(000 Bales)	% Change	(Kgs/Hec)	% Change
2015-16	2,902	-	9,917	-	582	-
2016-17	2,489	-14.2	10,671	7.6	730	25.3
2017-18	2,700	8.5	11,946	11.9	753	3.1
2018-19	2,373	-12.1	9,861	-17.5	707	-6.1
2019-20(P)	2,527	6.5	9,178	-6.9	618	-12.6

P: Provisional (July-March)

Source: Pakistan Bureau of Statistics

ii) Sugarcane

Sugarcane is a high value cash crop that has significance for sugar and sugar related industries in Pakistan. It contributes about 0.6 percent to GDP and 2.9 percent of total value addition in agriculture. During 2019-20, sugarcane production decreased by 0.4 percent to 66.880 million tonnes as compared to 67.174 million tonnes of last year. The output may depict the pattern of area under cultivation i.e 1,040 thousand hectares compared to 1,102 thousand hectares, a decline of 5.6 percent, with improved yields compared to 2018-19. The area, production and yield of sugarcane during the last five years are given in Table 2.5 and Figure 2.2.

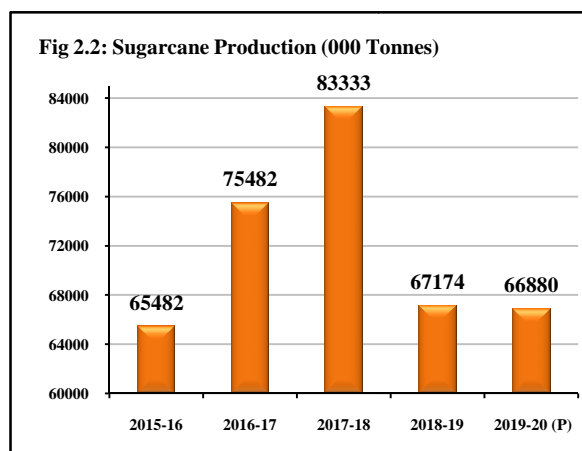


Table 2.5: Area, Production and Yield of Sugarcane

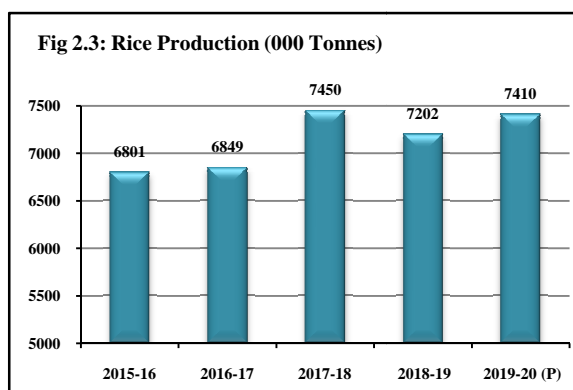
Year	Area		Production		Yield	
	(000 Hectare)	% Change	(000 Tonnes)	% Change	(Kgs/Hec.)	% Change
2015-16	1,131	-	65,482	-	57,897	-
2016-17	1,218	7.7	75,482	15.3	61,972	7.0
2017-18	1,342	10.2	83,333	10.4	62,096	0.2
2018-19	1,102	-17.9	67,174	-19.4	60,956	-1.8
2019-20 (P)	1,040	-5.6	66,880	-0.4	64,308	5.5

P: Provisional (July-March)

Source: Pakistan Bureau of Statistics

iii) Rice

Being a main food as well as cash crop, rice holds an important place in the agriculture of Pakistan. After wheat, it is the second main staple food crop and second major exportable commodity after cotton. It contributes about 3.1 percent of value added in agriculture and 0.6 percent in GDP. During 2019-20, rice cropped area of 3,034 million hectares increased by 8.0 percent compared to 2,810 thousand hectares of last year. The production increased by 2.9 percent to 7.410 million tonnes against 7.202 million tonnes of last year due to an increase in area under the crop,



driven in part by higher domestic prices and availability of inputs on subsidized rates. The area, production and yield of rice last five years are shown in Table 2.6 and Figure 2.3.

Table 2.6: Area, Production and Yield of Rice

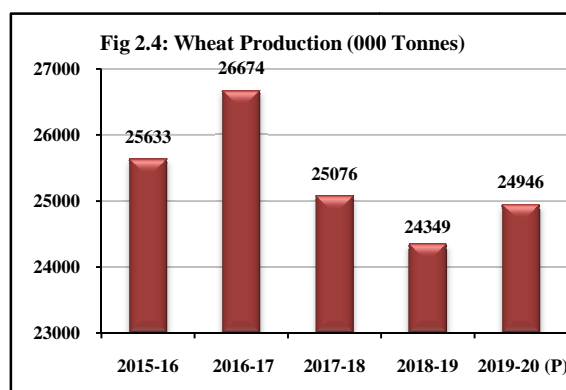
Year	Area		Production		Yield	
	(000 Hectare)	% Change	(000 Tonnes)	% Change	(Kgs/Hec.)	% Change
2015-16	2,739	-	6,801	-	2,483	-
2016-17	2,724	-0.5	6,849	0.7	2,514	1.2
2017-18	2,901	6.5	7,450	8.8	2,568	2.1
2018-19	2,810	-3.1	7,202	-3.3	2,563	-0.2
2019-20(P)	3,034	8.0	7,410	2.9	2,442	-4.7

P: Provisional (July-March)

Source: Pakistan Bureau of Statistics

iv) Wheat

Wheat accounts for 8.7 percent to value addition in agriculture and 1.7 percent to GDP. Wheat crop production increased by 2.5 percent to 24.946 million tonnes over last year's production of 24.349 million tonnes. The area under cultivation increased by 1.7 percent to 8,825 thousand hectares over last year's area (8,678 thousand hectares). The production increased due to increase in



cultivated area, healthy grain formation and better crop yield. 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
2015-16	9,224	-	25,633	-	2,779	-
2016-17	8,972	-2.7	26,674	4.1	2,973	7.0
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(P)	8,825	1.7	24,946	2.5	2,827	0.7

P: Provisional (July-March)

Source: Pakistan Bureau of Statistics

v) Maize

In Pakistan, after wheat and rice, Maize is the third important cereal crop. It contributes 2.9 percent to value addition in agriculture and 0.6 percent to GDP. During 2019-20, maize was cultivated on 1,413 thousand hectares and recorded an increase of 2.9 percent over last year's 1,374 thousand hectares. Its production increased by 6.0 percent to 7.236 million tonnes compared to last year's production of 6.826 million tonnes. The production increased due to increase in area and availability of improved variety of seed as well as better economic returns. The position is presented in Table 2.8 and Figure 2.5.

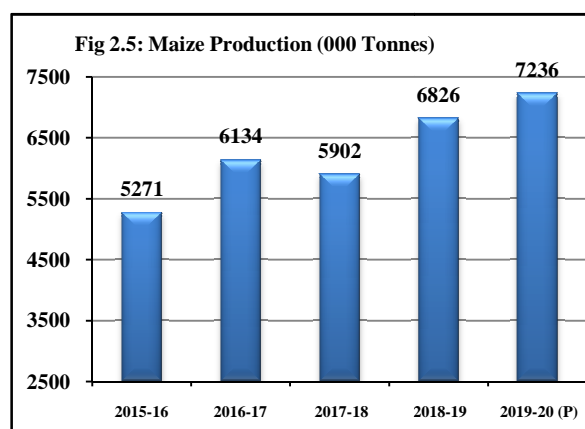


Table 2.8: Area, Production and Yield of Maize

Year	Area		Production		Yield	
	(000 Hectares)	% Change	(000 Tonnes)	% Change	(Kgs /Hec.)	% Change
2015-16	1,191	-	5,271	-	4,426	-
2016-17	1,348	13.2	6,134	16.4	4,550	2.8
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 (P)	1,413	2.9	7,236	6.0	5,121	3.1

P: Provisional (July-March)

Source: Pakistan Bureau of Statistics

b) Other Crops

During 2019-20, gram production increased by 21.9 percent to 545 thousand tonnes on account of higher yield due to favourable weather condition prevalent at the time of sowing. The production of Bajra and Tobacco increased by 9.7 percent and 5.8 percent, respectively. The production of Jawar decreased by 19.5 percent to 120 thousand tonnes. The production of Barley and Rapeseed & Mustard remained same. 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	2018-19		2019-20 (P)		% Change in production over Last year
	Area (000 Hectares)	Production (000 Tonnes)	Area (000 Hectares)	Production (000 Tonnes)	
Bajra	456	350	522	384	9.7
Jowar	241	149	199	120	-19.5
Gram	943	447	940	545	21.9
Barley	57	55	53	55	0.0
Rapeseed & Mustard	237	302	349	302	0.0
Tobacco	45	104	47	110	5.8

P: Provisional (July-March)

Source: Pakistan Bureau of Statistics

During 2019-20, the production of Chillies and Moong increased by 34.5 percent and 12.6 percent, respectively compared to production of last year. However, the production of pulse Mash, Potato and Onion decreased by 5.8 percent, 5.3 percent and 1.0 percent, respectively compared to last year's production. The production of Masoor remained the same of last year's production. The area and production of other crops are given in Table 2.10.

Table 2.10: Area and Production of Other Crops

Crops	2018-19		2019-20(P)		% Change in production over Last year
	Area (000 Hectares)	Production (000 Tonnes)	Area (000 Hectares)	Production (000 Tonnes)	
Masoor	12.9	6.0	10.4	6.0	0.0
Moong	163.2	117.8	186.7	132.7	12.6
Mash	14.1	6.9	13.9	6.5	-5.8
Potato	195.7	4,869.3	188.6	4,609.6	-5.3
Onion	148.3	2,079.6	146.1	2,058.2	-1.0
Chillies	47.3	101.7	57.8	136.8	34.5

P: Provisional (July-March)

Source: Pakistan Bureau of Statistics

i) Oilseeds

During FY2020 (July-March), 2.748 million tonnes edible oil of value Rs 321.535 billion (\$ 2.046 billion) was imported. Local production of edible oil during 2019-20 (July-March) is estimated at 0.507 million tonnes. Total availability of edible oil from all sources is provisionally estimated at 3.255 million tonnes. The area and production of oilseed crops are given in Table 2.11.

Table 2.11: Area and Production of Major Oilseed Crops

Crops	2018-19			2019-20 (Jul-Mar) (P)		
	Area (000 Acres)	Production		Area (000 Acres)	Production	
		Seed (000 Tonnes)	Oil (000 Tonnes)		Seed (000 Tonnes)	Oil (000 Tonnes)
Cottonseed	5,864	2,516	302	6,210	2,412	289
Rapeseed-Mustard	586	337	108	860	458	147
Sunflower	257	133	51	219	105	40
Canola	67	41	16	128	81	31
Total	6,774	3,027	477	7,417	3,056	507

P: Provisional

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

Ministry of National Food Security & Research (MNFS&R) has launched a mega project “National Oilseed Enhancement Programme” with a total cost of Rs 10.964 billion for five years under the National Agriculture Emergency Programme. The main objective of this project is to boost the adoption of oilseed crops. Under this project a subsidy of Rs 5,000 per acre for sowing seed/inputs and 50 percent on the purchase of oilseed machineries is being provided to oilseed growers.

Box Item-I: Desert Locust Situation in Pakistan

The unusual wider spread of desert locust during start of 2020 in main crop production areas of Pakistan pushed the government of Pakistan to declare national emergency against Desert Locust on January 31, 2020. This year (2020) Desert Locust spread is worst in 25 years in areas of concerns **i)** Horn of Africa, **ii)** Southwest Asia and Red Sea. This situation represents an unprecedented threat to food security and livelihoods, therefore, a Locust Emergency Level 3 has been declared within FAO to coordinate and ensure support to vulnerable countries.

Locust outbreak in Pakistan (towards last part of 2019 and start of 2020) turned serious and agriculture losses were reported to main crop production areas in Balochistan, Punjab and Sindh provinces. According to the initial assessment damage to over 115 thousand hectares of crops including wheat, oil seed crops, cotton, gram, fruits and vegetables, besides grazing field losses. Even some crop losses were also reported in Khyber Pakhtunkhwa. The quantum of detailed damage assessment may take some time and efforts are underway to agree on an assessment (including humanitarian aspect also) in collaboration with stakeholders.

The situation in **Iran** and **Yemen** is becoming increasingly worrisome. Swarms laid eggs along 900 km of coast in southwest **Iran** that are hatching and hopper bands are forming. The widespread heavy rains that fell in late March 2020 will allow another generation of breeding and a further increase in locusts during May 2020, which will extend to Balochistan, Pakistan. Resultantly, there will be more band and swarm formation in Pakistan. This Desert Locust evolving situation would require a strong surveillance and control operation especially in the aftermath of corona virus COVID-19 spread and precarious security environment in the regional countries. Therefore, government of Pakistan and FAO (TCPF, DIFID, South Korean support and FAO-China SSC) has mobilized resources in order to counter the emerging/imminent Desert locust challenge. The overall surveyed and treated area details are summarized as follow:

- Total Area Surveyed (ha): 1,500,000
- Total Area Treated (ha): 390,000
- Area Treated by Vehicle (ha): 363,400
- Area Treated by Aircraft (ha): 26,600

Source: Food and Agriculture Organization of the United Nations (UN FAO)

II. Farm Inputs

i) Fertilizer

Fertilizer along with irrigation water and quality seed plays an important role in raising the productivity of crops. About 52 percent of fertilizer is used in Rabi season while 48 percent in Kharif season when cotton, rice, maize and sugarcane are planted.

The domestic production of fertilizers during FY2020 (July-March) increased by 5.8 percent over the same period of last year, the increase in domestic production of fertilizer is primarily due to the supply of additional gas for the fertilizers. However, the supply of imported fertilizer decreased by 20.7 percent. Therefore, the total availability of fertilizer decreased by 0.28 percent during the prescribed period. Total offtake of fertilizer nutrients witnessed decrease by 2.6 percent. Nitrogen offtake decreased by 2.4 percent, phosphate

offtake decreased by 2.6 percent and potash offtake also decreased by 14.5 percent during FY2020 (July-March). The price of urea increased by 11.5 percent and DAP by 3.1 percent. Gas Infrastructure Development Cess (GIDC) has been reduced to Rs 5/MMBTU which has resulted in a decrease in the cost of urea by Rs 398 per bag with effect from 28th January, 2020. Following are different types of subsidies provided by the government during FY2020.

- 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 976 per bag)
- Subsidy on imported urea (Rs 1,194 per bag)
- Cash subsidy by Government of Punjab for phosphate and potash fertilizer (Rs 500 per bag of DAP)

The total availability of urea during Kharif 2019 was 3,501 thousand tonnes comprising of 135 thousand tonnes of opening inventory and 3,265 thousand tonnes of domestic production (Table 2.12). Urea offtake was about 3,023 thousand tonnes, leaving an inventory of 470 thousand tonnes for Rabi 2019-20. The availability of DAP was 1,375 thousand tonnes comprising of 599 thousand tonnes of opening inventory, 331 thousand tonnes of imported supplies, and 445 thousand tonnes of local production. DAP offtake was 974 thousand tonnes leaving an inventory of 406 thousand tonnes for the upcoming Rabi 2019-20.

Rabi 2019-20 started with an opening balance of 470 thousand tonnes of urea (Table 2.12). Domestic production during Rabi 2019-20 is estimated at around 2,994 thousand tonnes. Urea offtake during current Rabi 2019-20 was 2,867 thousand tonnes, against 3,464 thousand tonnes of total availability, leaving a closing balance of 580 thousand tonnes for next season. DAP availability during Rabi 2019-20 was 1,579 thousand tonnes, which includes 406 thousand tonnes of opening inventory, 849 thousand tonnes of imported supplies and domestic production of 324 thousand tonnes. The offtake of DAP during Rabi season is projected at about 1,094 thousand tonnes, leaving a balance of 487 thousand tonnes for next season.

Table 2.12: Fertilizer Supply Demand Situation (000 Tonnes)

Description	Kharif (Apr-Sep) 2019		Rabi (Oct-Mar) 2019-20		Kharif (Apr-Sep) 2020*	
	Urea	DAP	Urea	DAP	Urea	DAP
Opening stock	135	599	470	406	580	487
Imported supplies	101	331	0	849	0	87
Domestic Production	3265	445	2994	324	2823	420
Total Availability	3501	1375	3464	1579	3403	994
Offtake/Demand	3023	974	2867	1094	3048	956
Write on/off	-8	5	-17	2	0	0
Closing stock	470	406	580	487	355	38

*: It is assumed that Fatimafert and Agritech will remain closed for whole Kharif season

Source: National Fertilizer Development Center

The total availability of urea during Kharif 2020 will be about 3,403 thousand tonnes comprising of 580 thousand tonnes of opening balance and 2,823 thousand tonnes of

domestic production (Table 2.12). Urea offtake is expected to be around 3,048 thousand tonnes, reflecting a closing balance of 355 thousand tonnes. The total availability of DAP will be 994 thousand tonnes against the expected offtake of 956 thousand tonnes. Supply demand gap will be filled through imported supplies by the private sector.

ii) Improved Seed

Seed is the basic input for agriculture sector and has an imperative role in enhancing agriculture productivity. The world has now focused on the use of certified seed for enhancing agriculture productivity owing to its better profitability coupled with the application of internationally acceptable quality parameters. In order to improve the availability of quality seed to farmers the importance of provision of certified seed needs to be emphasized and the services of this sector need to be revitalized in accordance to the requirements of local and international challenges.

Federal Seed Certification & Registration Department (FSC&RD) is an attached department of MNFS&R having the mandate of assuring quality of seed through seed certification and variety registration. FSC&RD is a third-party regulatory department which provides seed certification services as and when requested by public and private seed agencies and has annual plan for field crop inspection and seed testing. In order to ensure improved seed certification services, FSC&RD administration is working on various aspects for strengthening of field offices, international collaboration; new initiatives for further development (Gilgit Baltistan Project, Establishment of Plant Breeder's Rights Registry).

The area, seed requirement and seed availability during 2019-20 (July-March), are given in Table 2.13.

Table 2.13: Area, Seed Requirement and Seed Availability

Crop	Sowing Area* (000 Ha)	Total Seed Requirement (MT)	Seed Availability (Metric Tonnes)			
			Public	Private	Imported	Total (Loc+Imp)
Wheat**	9,160	1,131,260	5,887	42,458	-	48,345
Cotton	2,895	57,205	89	21,755	-	21,844
Paddy	2,879	42,393	2,915	59,288	5,755	67,958
Maize	1,328	32,794	195	3,074	12,006	15,275
Pulses	1,185	42,674	504	2,313	-	2,817
Oilseeds	830	10,790	356	429	755	1,540
Vegetables	280	8,400	-	35	2,792	2,827
Fodders	2,038	61,140	10	4,270	19,590	23,870
Potato	465	1,163,500	-	-	5,211	5,211
Total	21,060	2,550,156	9,956	133,622	46,109	189,687

*:Area has been decided by the Federal Committee on Agriculture, MNFS&R

** : Seed testing is in progress and is very slow due to corona pandemic. The expected yield of wheat seed is 48,345 MT.

Source: Federal Seed Certification & Registration Department

iii) Mechanization

Accelerated farm mechanization is an important element to accelerate the growth in agriculture sector. The main constraint in increasing agricultural productivity includes non-

availability of quality tractors and other agricultural machinery at the right time and at affordable prices to the farmer community.

The domestic tractor industry has played a significant role in fulfilling the requirements of tractors to farmers. The number of operational tractors in the country is around 612,000 resulting in per acre horsepower (HP) availability of around 0.09 against the required power of 1.4 HP per acre. During 2019-20 (July-March), total tractors production was 23,137 compared to the 37,457 produced last year for similar period. The major reasons of the decline in production of tractors are low sales because of fier conditions for purchaser, low farmers' liquidity position because of low production of the cotton crop, changing market dynamics/demand, and situation arising of COVID-19 pandemic lockdown. The prices and production of locally manufactured tractors are given in Table 2.14.

Table 2.14: Prices and Production of Locally Manufactured Tractors 2019-20 (July-March)					
Tractors Model – Horse Power (HP)	Basic Price (Rs)	GST @ 05%	Total Price (Rs)	Actual Production (in Nos.)	Actual Sale (in Nos.)
M/s Al-Ghazi Tractors Limited					
480-S (55 HP)	810,350	42,650	853,000	2,278	2,310
480-S (55 HP) Hydrostatic Power Steering	831,250	43,750	875,000	725	817
480-S (55 HP) Hydrostatic Power Steering (Sindh Version)	854,050	44,950	899,000	432	406
Ghazi (65 HP)	928,150	48,850	977,000	3,191	3,252
Ghazi-WDB (65 HP)	935,750	49,250	985,000	74	78
640 (75 HP)	1,223,600	64,400	1,288,000	1,309	1,377
640-WDB (75 HP)	1,233,100	64,900	1,298,000	33	40
640-S (85 HP)	1,246,400	65,600	1,312,000	78	84
640-S WDB (85 HP)	1,249,250	65,750	1,315,000	18	20
Dabung (85HP)	1,253,050	65,950	1,319,000	287	293
NH 70-56 (85 HP)	1,676,750	88,250	1,765,000	34	34
NH TD-95 (98 HP) (Imported)	2,438,334	128,333	2,566,667	-	22
Total				8,459	8,733
M/s Millat Tractors Limited					
MF 240 (50 HP)	855,000	42,750	897,750	4,889	4,903
MF 350 Plus (50 HP) Hydrostatic Power Steering	912,600	45,630	958,230	12	10
MF 260 (60 HP)	980,000	49,000	1,029,000	3,104	3,087
MF 360 (60 HP) Hydrostatic Power Steering	1,012,000	50,600	1,062,600	297	278
MF 375 (75 HP)	1,292,000	64,600	1,356,600	1,192	1,198
MF 385 (85 HP)	1,360,000	68,000	1,428,000	4,730	4,737
MF 375-4WD (75 HP)	1,734,000	86,700	1,820,700	3	-
MF 375-4WD (85 HP)	1,875,000	93,750	1,968,750	451	399
Total				14,678	14,612
Grand Total				23,137	23,345

Source: Tractor Manufacturers, Federal Water Management Cell

iv) Irrigation

During the monsoon season (July-September) 2019, the actual rainfall was recorded at 140.4 mm showing a meagre decrease of 0.4 percent against the normal average rainfall of 140.9 mm. During the post-monsoon season (October-December) 2019, the normal average

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rainfall was 26.4 mm, while the actual rainfall recorded was 56.3 mm showing an increase of 113.1 percent. During the winter season (January-March) 2020, the normal average rainfall was 74.3 mm, the actual rainfall recorded was 123.0 mm showing an increase of 65.5 percent. Rainfall recorded during the monsoon, post monsoon and winter is given in Table 2.15.

Table 2.15: Rainfall* Recorded During 2019-20 (in Millimetres)

	Monsoon Rainfall (Jul-Sep) 2019	Post Monsoon Rainfall (Oct-Dec) 2019	Winter Rainfall (Jan-Mar) 2020
Normal**	140.9	26.4	74.3
Actual	140.4	56.3	123.0
Shortage (-)/excess (+)	-0.5	+29.9	+48.7
% Shortage (-)/excess (+)	-0.4	+113.1	+65.5

*:Area Weighted,**:Long Period Average (1961-2010)

Source: Pakistan Meteorological Department

Canal water withdrawals increased by 9 percent during Kharif (April-September) 2019 to 65.23 MAF compared to 59.62 MAF during the same period last year. During Rabi (October-March) 2019-20, it witnessed an increase of 18 percent to 29.20 MAF compared to 24.76 MAF during the same period last year. The province-wise details are shown in Table 2.16.

Table 2.16: Canal Head Withdrawals (Below Rim Stations) Million Acre Feet (MAF)

Province	Kharif (Apr-Sep) 2018	Kharif (Apr-Sep) 2019	% Change in Kharif 2019 Over 2018	Rabi (Oct-Mar) 2018-19	Rabi (Oct-Mar) 2019-20	% Change in Rabi 2019-20 Over 2018-19
Punjab	29.19	34.42	18	13.25	14.67	11
Sindh	27.75	28.04	1	10.10	12.92	28
Balochistan	1.69	1.87	11	0.97	1.24	29
Khyber Pakhtunkhwa	0.99	0.91	-8	0.45	0.36	-19
Total	59.62	65.23	9	24.76	29.20	18

Source: Indus River System Authority

Agriculture sector has the largest water consumption, so efficient use of water is an important requirement for its sustainable growth. In this regard, National Water Policy (NWP) aims to promote solar pumping in the areas bearing shallow aquifers and to ensure sustainable use of water in cultivation of crops. Subsidies are also being offered to install solar pumps, where viable. Since Irrigation and agriculture are provincial subjects in the post 18th Constitutional Amendment scenario, provinces are being encouraged to take initiatives on their own, in accordance with NWP.

Major goals of National Water Policy 2018 are summarized as under:

- Reduction of 33 percent in conveyance losses through watercourses lining
- Increase storage capacity by adding 10 MAF live storage
- 20 percent increase in water use efficiency by introducing modern irrigation techniques
- Refurbishment of irrigation infrastructure

- Real-time monitoring of water distribution for transparent water accounting and
- Development of a unified authentic database to have reliable water resources assessment

During the FY2020, an amount of Rs 70.384 billion were allocated for the water sector's development projects/programmes (including Mohmand Rs 15.000 billion and Diamer Basha Dam Rs 16.000 billion). Out of this, about Rs 47.00 billion have been released, it is expected that the entire water sector's allocation will be utilized by June, 2020.

Key Achievements of FY2020

- Initial/preparatory works for the construction of Diamer Bhasha Dam and Mohmand Damis in progress
- Operationalization of Kachhi Canal (Phase-I) in Balochistan & Raineer Canal in Sindh. About 40,000 acres of command area for Kachhi canal has been developed
- Initiation of about 30 new schemes of small dams/recharge/check having a cost of about Rs 28.60 billion with an allocation of Rs 2.74 billion in Balochistan
- More than 45 percent works completed on Kurram Tangi Dam (Phase-I) in North Waziristan tribal district
- To save the water losses of the existing irrigation system, Rs 532 million would be utilized for lining and improvement of small canals & minors in Punjab, Sindh and Khyber Pakhtunkhwa
- Concept Clearance has been accorded for the formulation of "National Flood Protection Plan IV" to protect infrastructure, flood embankments, spurs, flood forecasting & warning system in Pakistan
- In Balochistan, Sindh, Punjab and Khyber Pakhtunkhwa about Rs 22.771 billion are utilized during FY2020 on the construction of medium/small/delay action dams and recharge dams. Province-wise detail is as under:
 - a) Punjab Rs 2,912 million (Ghabir & Papin dam).
 - b) Sindh Rs 2,813 million (Darawat & Nai Gaj, Small dams in Kohistan and Nagarparkar areas of Sindh).
 - c) Khyber Pakhtunkhwa Rs 4,306 million (Kurram Tangi, Kundal/Sanam dam, Baran dam & 20 small dam in Nowshera, Karak, Swabi, Haripur & Kohat Districts).
 - d) Balochistan Rs 8,867 million (Naulong, Garuk Dam, Bathozai, Construction of 100 small dams (Package-II & III), Basol, Mangi dam & many small dams in different Districts).
- Rs 2,821 million will be utilized for the completion of RBOD-I & III Projects to protect & reclaim waterlogged & salt affected Irrigated land and Manchar Lake.

Physical progress of major on-going projects is given in Table 2.17.

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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.)	ECNEC approved Dam part of the project on 14-11-2018 (out of Rs 479 billion, an amount of Rs 237 billion will be federal grant, Rs 144 billion commercial financing and Rs 98 billion WAPDA equity). Initial Work in Progress.
Gomal Zam Dam	Khyber Pakhtunkhwa	20,626	0.892 MAF	191,139 Acres (17.4 MW Power Gen.)	Completed & Operational. Out of 191,139 acres CCA about 110,000 acres have been developed (58%) uptill now.
Kachhi Canal (Phase-I)	Balochistan	80,352	-	72,000 Acres	Phase-I completed. Out of 102,000 acres CCA about 40,000 acres have been developed (40%) of Dera Bugti district of Balochistan.
Darawat Dam	Sindh	9,300	89,192 (Acre Ft)	25,000 Acres (0.30 MW Power Gen.)	Physically completed. Command Area Development needs to be expedited by the Govt of Sindh.
Nai Gaj Dam	Sindh	26,236	160,000 (Acre Ft)	28,800 Acres (4.2 MW Power Gen.)	52 % Physical works completed 2 nd Revised PC-I costing Rs 46 billion in approval process.
Kurram Tangi 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.)	45% 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 nd revised PC-I costing Rs 28,465 million approved by ECNEC on 26-03-2020.
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.)	Phase-I ECNEC approved on 30-06-018 at a Total cost of Rs 309.558 billion (Dam part+ Power cost). Initial works in progress.
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	-		95% completed
RBOD-II	Sindh	61,985	-		72% completed
RBOD-III	Balochistan	10,804	-		98% completed

Source: Ministry of Planning, Development & Special Initiatives

During FY2020, following projects have been launched under Prime Minister's Agriculture Emergency Programme to "Conserve and Increase Productivity of Water":

a) National Programme for Improvement of Watercourses in Pakistan-Phase-II:

The programme envisages lining of upto 50 percent of the total length of 62,210 water courses (reconstruction, additional lining, and new) inclusive of 14,932 Water Storage Tanks. This also includes the provision of 11,610 Laser Land Levelers on a 50 percent

cost sharing basis (government's share to be capped at Rs 250,000 per beneficiary). Total project cost is Rs 110.812 million over a period of 05 years. Project will be implemented in the provinces of Punjab, Khyber Pakhtunkhwa, Balochistan including Gilgit-Baltistan (GB), Azad Jammu and Kashmir (AJK) and Islamabad Capital Territory (ICT). The key objectives are:

- Social mobilization through capacity building of Water User's Associations/ Farmer Organizations
- Minimization of conveyance and field application losses
- Reduction in waterlogging 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

The work on improvement of 2,934 watercourses (inclusive of 395 water storage tanks) has been initiated whereas work on the improvement of 1,301 watercourses (inclusive of 207 water storage tanks) has so far been completed. Additionally, 1,200 units of laser land levelers have been distributed amongst the beneficiaries.

b) National Programme for Enhancing Command Area in Barani Areas of Pakistan was approved by ECNEC on 26th March, 2020 at a cost of Rs 25.345 billion. The project will be implemented in all provinces including GB, AJK and ICT over a period of 05 years. The key project outputs are:

- Construction of **2,664** farm ponds for storing rainwater from various sources
- Installation of **2,664** solar pumping systems on farm ponds for the operation of high efficiency irrigation systems
- Development of **4,156** dug wells for developing of the water source to promote irrigated agriculture
- Installation of **4,106** solar pumping systems at dug wells for the operation of high efficiency irrigation systems (in addition 50 Hydro Ram Pumps will be installed in GB to lift water from the river)
- Development/improvement of **2,432** watercourses carrying water from various sources for enhancing water conveyance efficiency at farm level
- Provision of **1,106** Laser Land Levelers to the farmers/service providers. Rough Land Levelling will also be done on **34,000** acres in Khyber Pakhtunkhwa
- Provision of fruit plants, oilseeds/pulses crops and fodder/forage/range on **45,518**, **112,189** and **81,676** acres, respectively, in command area of small/mini dams to ensure irrigated agriculture

- c) Project “Water Conservation in Barani Areas of Khyber Pakhtunkhwa” was developed at a cost of Rs 14.178 billion over a period of 05 years.

iv) Agricultural Credit

Agricultural Credit Advisory Committee (ACAC) set the indicative agricultural credit disbursement targets of Rs 1,350 billion for FY2020 which is 15 percent higher than the last year’s disbursement of Rs 1174.0 billion. Currently, 49 agriculture lending institutions are providing agricultural loans to the farming community, which include five major commercial banks, two specialized banks (ZTBL & PPCBL), 14 domestic private banks, five Islamic Banks, 11 Microfinance Banks and 12 Microfinance Institutions/Rural Support Programmes (MFIs/RSPs).

The total annual agriculture credit target has been further assigned amongst different banks. An amount of Rs 705 billion has been assigned to the five major commercial banks, Rs 253.6 billion to 14 domestic private banks, Rs 100 billion to ZTBL, Rs 13 billion to Punjab Provincial Cooperative Bank and Rs 55 billion to five Islamic Banks. Amongst the microfinance institutes the disbursement target of Rs 184 billion has been assigned to 11 Microfinance Banks and Rs 39.4 billion to 12 MFIs/RSPs for the current FY2020.

During FY2020 (July-March), the banks have disbursed Rs 912.2 billion which is 67.6 percent of the overall annual target and 13.3 percent higher than the disbursement of Rs 804.9 billion made during the same period of last year. Similarly, the outstanding portfolio of agriculture loans have increased by Rs 42.2 billion i.e. from Rs 529.9 billion to Rs 572.1 billion or 7.9 percent at the end March 2020 as compared to the same period of last year. In terms of outreach, the numbers of outstanding borrowers have reached to 3.85 million in March 2020. The comparative disbursements of agriculture lending banks/institutions against their annual indicative targets are appended in Table 2.18:

Table 2.18: Agricultural Credit Targets and Disbursement (Rs billion)

Banks	Target FY2020	FY2020 (July-March)		Target FY2019	FY2019 (July-March)		% Change over the Period
		Disbursed	Achieved (%)		Disbursed	Achieved (%)	
5 Major Commercial Banks	705.0	515.2	73.1	651.0	450.0	69.1	14.5
ZTBL	100.0	52.5	52.5	100.0	45.1	45.1	16.4
PPCBL	13.0	6.4	48.8	13.0	5.5	41.9	16.4
DPBs (14)	253.6	169.3	66.8	245.0	143.3	58.5	18.2
Islamic Banks (5)	55.0	31.0	56.3	50.0	22.4	44.7	38.5
MFBs (11)	184.0	115.2	62.6	156.0	114.7	73.5	0.4
MFIs/RSPs	39.4	22.6	57.5	35.0	24.0	68.8	-5.9
Total	1,350.0	912.2	67.6	1,250	804.9	64.4	13.3

Source: State Bank of Pakistan

Box Item-II:

i) Credit Disbursement to Farm & Non-Farm Sectors

While reviewing the sector wise agriculture disbursement performance, farm/crop sector credit received Rs 459.6 billion or 50.4 percent of the total disbursement with 17.2 percent growth during FY2020 (July-March). Similarly, Rs 452.6 billion or 49.6 percent disbursed to the non-farm non-crop sector with incremental growth of 9.6 percent during the period under review. The distribution of disbursement under various land holding/size of farms categories are shown in Table 2.19:

Sector (Land Holding/Farm size)		FY2020 (July-March)		FY2019 (July-March)	
		Disbursement	% Share within Total	Disbursement	% Share within Total
A	Farm Credit	459.6	50.4	392.0	48.7
1	Subsistence Holding	138.3	15.2	128.1	15.9
2	Economic Holding	53.5	5.9	52.5	6.5
3	Above Economic Holding	267.8	29.4	211.4	26.3
B	Non-Farm Credit	452.6	49.6	412.9	51.3
1	Small Farms	118.8	13.0	118.8	14.8
2	Large Farms	333.8	36.6	294.1	36.5
Total (A+B)		912.2	100.0	804.9	100.0

ii) Credit Disbursement Sector & Purpose wise

In terms of sectoral and purpose wise performance of agriculture credit sector, the production loans of farm sector grew by 17.0 percent, and development loans increased by 20.7 percent during FY2020 (July-March). However, the livestock/dairy & meat sector witnessed 12.4 percent growth and the poultry sector recorded 78.9 percent growth during the period under review. The sector wise/purpose wise agriculture credit disbursements showed in Table 2.20:

Sector & Purpose		FY2020 (July-March)		FY2019 (July-March)	
		Disbursement	% Share within sector	Disbursement	% Share within sector
A	Farm Sector	459.6	50.4	392.1	48.7
1	Production Loans	430.9	93.8	368.3	93.9
2	Development Loans	28.7	6.2	23.8	6.1
B	Non-Farm Sector	452.6	49.6	412.9	51.3
1	Livestock Dairy & Meat	236.7	52.3	210.6	51.0
2	Poultry	177.9	39.3	99.4	24.1
3	Fisheries	4.1	0.9	2.9	0.7
4	Forestry	0.01	0.003	0.04	0.01
5	Others	33.9	7.5	99.9	24.0
Total (A+B)		912.2	100.0	804.9	100.0

Source: State Bank of Pakistan

SBP's Initiatives for the Promotion of Agriculture Financing

SBP in collaboration with government, banks, and other stakeholders has taken a number of policy and regulatory initiatives for the promotion of agricultural financing in the country. In order to mitigate the negative impact of COVID-19 pandemic situation and to strengthen the agriculture sector the banks are allowed to give the relaxation upon the written request of the borrowers. Defer repayment of principal loan amount by one year; provided that the borrowers will continue to service the mark-up amount as per agreed terms & conditions. Rescheduled/restructuring of facilities of such borrowers who are unable to service the mark-up amount or need deferment exceeding one year. If the rescheduling/restructuring is done within 90 days of the loans being past due, such financing facility will continue to be treated as regular. Some of the major initiatives taken by SBP in collaboration with government are as under:

- Revision in Indicative Credit Limits and Eligible Items for Agriculture Financing

- Crop Loan Insurance Scheme
- Livestock Insurance Scheme for Borrowers
- Electronic Warehouse Receipt Financing
- Government of Punjab E-Credit Scheme
- Adoption of Automation of Land Record for Agriculture Financing
- Implementation of Credit Guarantee Scheme for Small and Marginalized Farmers
- Workshops/Trainings/Capacity & Awareness Building

Box Item-III: Impact of COVID-19 on Food Security and Food Supply Chain

Like many other countries across the globe, COVID-19 pandemic has also spread in Pakistan. However, the COVID-19 emergency came at a time when economy of Pakistan was already in stabilization mode. According to FAO, food security will be second most important area of concern after health if COVID-19 emergency is extended beyond a certain limit in Pakistan.

According to COVID-19 Emergency in Pakistan, Pakistan is already home to around 53 million poor people (a quarter of Pakistan's population) who live below the national poverty line, where as around 84 million people (around two-fifth of the population) are multi-dimensionally poor. Similarly, food insecurity is also very high and between 20-30 percent population (40 to 62 million people) is food insecure Pakistan. Given the scale of this emergency, while the situation is still evolving, there is strong likelihood that number of poor and food insecure people will rise, especially in cities and those areas which already had high incidence of poverty and prevalence of food insecurity. The most affected will be poor and most vulnerable segments of society, daily laborers in agriculture and non-agriculture sectors, small scale farmers/livestock holders, small and medium businesses and already vulnerable population living in the vulnerable districts.

Despite the good intention of the government to not disrupt the food and agriculture supply chain, the lockdown and restrictions on movements of goods and people, and logistics issues are impacting the supply/availability, demand and prices of food items, and agriculture/livestock inputs and the transportation costs. The livelihoods and incomes of the farmers and livestock holders generated through sale of crops and livestock produce, and of those associated with agriculture and food related business have been adversely affected. Particularly, the current lockdown and restrictions on movements of goods and people are adversely impacting the livelihoods and incomes of those engaged in informal sector and are in vulnerable employment, particularly small farmers and livestock holders, own account workers and daily wagers in all sectors. Small-scale farmers' income generating opportunities have suffered a lot due to less sale of their produce, high transportation cost, and loss of income from other sources. Farmers are experiencing difficulties in transporting fresh produce to local and urban markets. Incomes of the agriculture and non-agriculture workers, suppliers of livestock products, and middle men engaged in agri-based activities in the fruits, vegetables and livestock markets have also been reduced either due to closure of the markets or less market activities currently taking place in several parts of the country.

The restrictions on movements has affected the livestock sector adversely which has 60.6 percent share in agriculture GDP and 11.7 percent in overall GDP. The poultry sector is the hardest hit by COVID-19 response and demand and prices of poultry has reduced considerably. Both supply and demand for livestock products (meat, milk, eggs) has reduced due to reduction in demand, and logistics issues/movement restrictions.

In order to mitigate the negative impact of COVID-19 on overall economy, the government has announced economic relief and stimulus package of Rs 1.24 trillion which will also strengthen the agriculture sector. Moreover, even in the lockdown livestock products, food, fruits and vegetables items were allowed to continue their supply.

Source: Food and Agriculture Organization of the United Nations (UN FAO)

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 the forestry having meager share of 2.1 percent in agriculture, it provide foundations of life on earth through ecological functions, regulates the climate and water resources and serves as habitat for plants and animals.

To meet the domestic needs and to improve the forest cover, the federal government has launched Ten Billion Tree Tsunami Programme by replicating the Billion Tree Afforestation Project (BTAP) implemented by Government of Khyber Pakhtunkhwa. The project aims at, inter alia, combating the effects of global warming. This is an umbrella project covering all the provinces including AJK and GB with provincial budgetary share. All segments of society such as students, youth, and farmers are strongly involved in the afforestation activities.

IV. Livestock and Poultry

a) Livestock

Livestock over the years has emerged as the largest sub-sector in agriculture. It is a source of foreign exchange earnings and contributes about 3.1 percent in total exports. More than 8 million rural families are engaged in livestock production and deriving more than 35-40 percent of their income from this sector. The government has now focused this sector for economic growth, food security and poverty alleviation in the country.

The overall livestock development strategy revolves 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 of trade and economic importance. The objective is to exploit the livestock sector and its potential for economic growth, food security and rural socio-economic uplift.

Over the years, livestock as subsector has surpassed the crop subsector as the biggest contributor to value addition in agriculture. Presently it contributes 60.6 percent to the overall agriculture and 11.7 percent to the GDP during 2019-20. Gross value addition of livestock has increased from Rs 1,430 billion (2018-19) to Rs 1,466 billion (2019-20), showing an increase of 2.5 percent over the same period of last year.

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

Species	2017-18 ¹	2018-19 ¹	2019-20 ¹
Cattle	46.1	47.8	49.6
Buffalo	38.8	40.0	41.2
Sheep	30.5	30.9	31.2
Goat	74.1	76.1	78.2
Camels	1.1	1.1	1.1
Horses	0.4	0.4	0.4
Asses	5.3	5.4	5.5
Mules	0.2	0.2	0.2

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

Source: Ministry of National Food Security & Research

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

Species	2017-18 ¹	2018-19 ¹	2019-20 ¹
Milk (Gross Production)	57,890	59,759	61,690
Cow	20,903	21,691	22,508
Buffalo	35,136	36,180	37,256
Sheep ²	40	40	41
Goat	915	940	965
Camel ²	896	908	920
Milk (Human Consumption)³	46,682	48,185	49,737
Cow	16,722	17,353	18,007
Buffalo	28,109	28,944	29,805
Sheep	40	40	41
Goat	915	940	965
Camel	896	908	920
Meat⁴	4,262	4,478	4,708
Beef	2,155	2,227	2,303
Mutton	717	732	748
Poultry meat	1,391	1,518	1,657

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	2017-18 ¹	2018-19 ¹	2019-20 ¹
Eggs	Million Nos.	18,037	19,052	20,133
Hides	000 Nos.	16,974	17,547	18,139
Cattle	000 Nos.	8,734	9,063	9,405
Buffalo	000 Nos.	8,131	8,373	8,622
Camels	000 Nos.	109	111	112
Skins	000 Nos.	56,805	58,116	59,460
Sheep Skin	000 Nos.	11,532	11,669	11,807
Goat Skin	000 Nos.	28,560	29,334	30,129
<u>Fancy Skin</u>	000 Nos.	<u>16,712</u>	<u>17,113</u>	<u>17,524</u>
Lamb skin	000 Nos.	3,425	3,466	3,507
Kid skin	000 Nos.	13,287	13,647	14,017
Wool	000 Tonnes	46.2	46.8	47.3
Hair	000 Tonnes	27.9	28.6	29.4
Edible Offal's	000 Tonnes	416	428	440
Blood	000 Tonnes	69.5	71.3	73.1
Casings	000 Nos.	57,387	58,712	60,069
Guts	000 Nos.	18,048	18,654	19,280
Horns & Hooves	000 Tonnes	60.6	62.4	64.3
Bones	000 Tonnes	904.9	932.5	961.0

Table: 2.23 Estimated Livestock Products Production

Species	Units	2017-18 ¹	2018-19 ¹	2019-20 ¹
Fats	000 Tonnes	287.3	295.8	304.5
Dung	000 Tonnes	1,282	1,322	1,362
Urine	000 Tonnes	390	401	413
Head & Trotters	000 Tonnes	259.6	267.0	274.6
Ducks, Drakes & Ducklings	Million Nos.	0.42	0.40	0.38

¹: 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 vibrant subsector of the livestock sector. The current investment in Poultry Industry is more than Rs 700 billion. This industry is progressing at an impressive growth rate of 8 percent per annum over last few years. Pakistan has become the 11th largest poultry producer in the world with the production of 1,163 million broilers annually. This sector provides employment (direct/indirect) to over 1.5 million people.

Poultry today has been a balancing force to keep a check on the prices of mutton and beef. Poultry meat contributes 35 percent to 1,657 thousand tonnes of the total meat production of 4,708 thousand tonnes in the country. Poultry meat production showed a growth rate of 9.1 percent whereas egg production showed a growth of 5.6 percent to 20.0 billion Nos. during 2019-20 as compared to previous year. The transformation of poultry production in the controlled shed system is making a tremendous difference of quantity and quality of poultry production. There are now over 6,500 controlled environment poultry sheds in the country which indicates that poultry sector is moving in the direction of modernization and using advance technology.

The Poultry Development Strategy revolves around disease control; hi-tech poultry production in intensive poultry; processing and value addition; improving poultry husbandry practices and development. Government of Pakistan has always been supportive to poultry industry in providing the most enabling environment for its growth.

Poultry Development Policy visions sustainable supply of wholesome poultry meat; eggs and value added products to the local and international markets. It aimed at facilitating private sector-led development for sustainable poultry production. The strategy revolves around supporting the private sector through regulatory measures.

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	2017-18 ¹	2018-19 ¹	2019-20 ¹
Domestic Poultry	Million Nos.	87.16	88.49	89.84
Cocks	Million Nos.	11.86	12.18	12.51
Hens	Million Nos.	42.39	43.15	43.93
Chicken	Million Nos.	32.91	33.16	33.40
Eggs ²	Million Nos.	4,239	4,315	4,393
Meat	000 Tonnes	119.89	122.28	124.72

Table 2.24: Estimated Domestic/Rural & Commercial Poultry

Type	Units	2017-18 ¹	2018-19 ¹	2019-20 ¹
Duck, Drake & Duckling	Million Nos.	0.42	0.40	0.38
Eggs ²	Million Nos.	18.70	17.93	17.18
Meat	000 Tonnes	0.57	0.54	0.52
Commercial Poultry	Million Nos.	1,122.29	1,232.33	1,353.24
Layers	Million Nos.	52.25	55.91	59.82
Broilers	Million Nos.	1,057.65	1,163.42	1,279.76
Breeding Stock	Million Nos.	12.39	13.01	13.66
Day Old Chicks	Million Nos.	1,104.72	1,215.19	1,336.71
Eggs ²	Million Nos.	13,779	14,719	15,723
Meat	000 Tonnes	1,270.69	1,395.02	1,531.60
Total Poultry				
Day Old Chicks	Million Nos.	1,138	1,248	1,370
Poultry Birds	Million Nos.	1,210	1,321	1,443
Eggs	Million Nos.	18,037	19,052	20,133
Poultry Meat	000 Tonnes	1,391	1,518	1,657

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

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

Source: Ministry of National Food Security & Research

The present government under Prime Minister's Agriculture Emergency Programme developed a project "Backyard Poultry Programme" worth Rs 329.13 million over a period of four years. The key objectives identified are:

- Opportunity for the landless farmer, mostly women
- Small flock sizes in traditional sheds
- Feed on household/organic waste
- Free range requiring minimal input
- Source of eggs and meat for the poor; nutritional support
- Poverty alleviation through supplemental income from poultry products

Government Policy Measures

MNFS&R under the 18th Constitutional Amendment continued regulatory measures that included allowing import of high yielding dairy cattle breeds of Holstein-Friesian and Jersey; genetic material of these breeds (semen and embryos) for the genetic improvement of indigenous low producing dairy animals; allowing import of high quality feed stuff/micro ingredients for improving the nutritional quality of animals & poultry feed and allowing import of dairy, meat and poultry processing machinery/equipment at concessional tariff/duty in order to encourage and promote the establishment of value added industry in the country.

The government has provided necessary facilitation for the export of meat and meat products. A total of 53.4 thousand tonnes of meat and meat products were exported during 2019-20 (July-March) that fetched Rs 29.9 billion from the thirty five export oriented registered slaughter houses in the private sector. The export of other livestock by-products

such as animal casings, bones, horns, hooves, gelatin etc was also facilitated. The efforts continued for market access with the relevant authorities in China, South Africa, Jordan and Indonesia using diplomatic channels for export of various meat and meat products.

The government has also allowed the import of 654.5 thousand doses of superior quality semen and 7,200 high yielding exotic dairy cattle of Holstein-Friesian and Jersey breeds during 2019-20 (July-March). The policy objective of these permissions is the genetic improvement of indigenous dairy animals in terms of per unit productivity. The imported dairy cows added approximately 61 million tonnes of milk per annum in the commercial milk chain/system.

In order to promote the corporate dairy sector, import of calf milk replacer & cattle feed premixes has been allowed at concessional tariffs. During 2019-20 (July-March), 220.2 metric tonnes of calf milk replacer & 120.6 metric tonnes of cattle feed premix has been imported for feeding to our dairy herd.

During 2019-20 (July-March), the Animal Quarantine Department (AQD) provided quarantine services and issued 36,853 health certificates for export of live animals, mutton, beef, eggs, and other livestock products having a value of \$ 337.162 million. The AQD generated non-tax revenue of Rs 132.162 million during same year as certificate/laboratory examination fee of animal and animal products have been charged on their exports.

MNFS&R collaborated with international (Office International des Epizooties OIE, Food and Agriculture Organization FAO) and regional organizations (SAARC, ECO, APHCA and EU) for Human Resource Development and capacity building of national and provincial livestock institutions for diagnosis and control of animal diseases. Inter Provincial Coordination is being done to Control Foot & Mouth Disease (FMD) and Peste des Petitis (PPR) disease in the country. Pakistan has been progressing on OIE FMD freedom pathway and moved to stage 02 of the 06 stage pathways. A National FMD Control Programme at a cost of Rs 822.20 million for the period of six years has been approved by the competent forums to sustain and continue project activities related to the FMD during subsequent years. This will help in improving the animal health status of the country regarding Transboundary Animal Diseases (TADs), which are a technical barrier in the international trade of our livestock and livestock products. FAO Pakistan will implement this project under Unilateral Trust Fund (UTF) Agreement.

Moreover, to attract further investment in the dairy sector, protect small dairy farmers and corporate dairy sector besides discouraging import and to mitigate use of synthetic milk and recipe products/tea whiteners, a regulatory duty to the tune of 25 percent has been imposed on import of Skimmed Milk Powder (SMP) and Whey Powder (WP). Now the existing duty on import of powdered milk is 45 percent (import duty 20 percent and regulatory duty 25 percent).

Impact of COVID-19 on Livestock Sector

Besides human loss, COVID-19 pandemic posed a negative impact on Pakistan's economy. By the side of demand and supply chains the pandemic affected all sectors of the economy including livestock. The lockdown has not only struck the domestic demand for livestock commodities, but has also generated supply and demand issues for exports. This situation

has negatively impacted the livelihoods of farmers and other players along the entire value chain of the livestock commodities and they are facing challenges in repaying their outstanding loans.

V. Fisheries

Fisheries is a sub-sector of agriculture and plays an important role in the national economy. It also contributes towards food security of the country as it reduces the existing pressure on demand for mutton, beef and poultry. The fishery is considered to be a source of livelihood for the coastal inhabitants and a source of export earnings. Apart from marine fisheries, inland fisheries (based in rivers, lakes, ponds, dams, etc.) is also a vital economic activity throughout the country. Fisheries share in GDP (0.4 percent) although very little but it adds substantially to the national income through export earnings.

During 2019-20 (July-March), total marine and inland fish production was estimated at 701,726 metric tonnes out of which 474,025 metric tonnes were from marine waters and the remaining catch from inland waters. Whereas the fish production for the period 2018-19 (July-March) was estimated to be 639,527 metric tonnes in which 426,261 metric tonnes were from marine and the remaining was produced by the inland fishery sector. The total production of fish & fishery products has increased by 9.7 percent whereas marine and inland increased by 11.2 percent and 6.8 percent, respectively.

During the year 2019-20 (July-March), a total quantity of 133,226 metric tonnes of fish and fishery products valued \$ 317.307 million (Rs 49,528 million) were exported. Pakistan's major buyers are China, Thailand, Malaysia, Middle East, Sri Lanka, Japan, etc. Whereas the export during 2018-19 (July-March) was 129,704 metric tonnes of fish and fishery products earning \$ 293.895 million (Rs 39,246 million). The export of fish & fishery products has increased by 2.7 percent in quantity term whereas in value terms it increased by 8.0 percent and in rupee terms it increased by 26.2 percent during 2019-20 (July-March).

Export of fish and fishery products to the European Union (EU) countries: Since the resumption of export to the EU countries different consignments of fish, cuttlefish, and shrimps sent from one company to the EU have been successfully cleared after 100 percent laboratory analysis at EU border. To further enhance seafood export to EU countries, six more processing plants are in pipeline and their cases for approval is under process with EU authorities. Export of seafood to EU countries is given in Table 2.25:

Table 2.25: Export of Fish and Fishery Products to European Union (EU) 2019-20 (P)

Commodity / Country	Fish		Cuttlefish		Shrimp		Total	
	Quantity (MT)	Value \$ (000)	Quantity (MT)	Value \$ (000)	Quantity (MT)	Value \$ (000)	Quantity (MT)	Value \$ (000)
Belgium	105	289	101	192	145	326	351	807
Netherlands	92	197	-	-	162	377	254	574
Spain	101	204	240	963	-	-	341	1,167
Italy	116	275	-	-	-	-	116	275
UK	135	1,025	-	-	132	763	267	1,788
Total	549	1,990	341	1,155	439	1,466	1,329	4,611

P: July-March

Source: Marine Fisheries Department

The government of Pakistan has taken various steps to improve the fisheries sector and its exports. In this context a number of initiatives both at micro and macro level are being taken by federal and provincial fisheries departments which consist of *inter alia* strengthening of extension services, introduction of new fishing methodologies, development of value added products, enhancement of per capita consumption of fish, upgradation of socio-economic conditions of the fishermen's community & review of Deep Sea Fishing Policy 2018.

Conclusion:

The government has introduced “Prime Minister’s Agriculture Emergency Programme” for the next 5 years. The programme aims to increase agricultural productivity, value addition, reduce dependence on imports and improve lives of farming community. This will also ensure food security in the country and increase the hard-earned income of the farmers. The development of agriculture sector will further provide stimulus to agro-based industries and overall growth of the economy. Blessed with the fertile land and hard working farmer community we can enhance the agricultural productivity to ensure smooth supply of essential food items during the COVID-19.
