MINISTRY OF NATIONAL FOOD SECURITY AND RESEARCH

SUPARCO

PAK-SCMS BULLETIN

PAKISTAN: SATELLITE BASED CROP MONITORING SYSTEM

Volume XII, Issue 10, Serial No. 142 1-September 2022

SUPARCO, the National Space Agency of Pakistan, started the program on "Monitoring of Crops through Satellite Technology" during the year 2005. This is a perpetual study encompassing all growing seasons around the year. The purpose of this initiative is to reinforce support for policy makers, planners and private sector for food security, stocking, marketing, trade and industrial management. The final crop estimates are released by end of March for Rabi crops and mid of October for Kharif crops.

Food and Agriculture Organization of United Nations, (FAO-UN) provided technical backstopping for analytics and transfer of technology.
Wheat, cotton, rice, sugarcane, maize and potato crops are being covered under this program. In addition, large scale geospatial applications of satellite remote sensing technology have been made for monitoring/mitigation of natural disasters (floods, flash floods, and drought) and providing reconnaissance detailed information ordained for the uplift of agriculture and allied pursuits.

INSIDE THIS ISSUE

CROP SITUATION: SEPTEMBER 2022

Summary

By the end of September 2022, decreasing values of Satellite based Normalized Difference Vegetation Index (NDVI) manifest maturity/harvesting of Kharif crops. Generally, above normal day time temperatures were observed in most parts of the country. 2-3 rain spells with light to moderate precipitation were received in parts of Punjab, Khyber Pakhtunkhwa, Baluchistan, lower Sindh, Gilgit-Baltistan and Kashmir except few heavy rainfall were reported in parts of Punjab and Sindh.

Monsoon season 2022 (Jul-Sep) witnessed above normal rainfall defying some historical high records particularly in Sindh and parts of Balochistan. Episodes of wide spread rain spells during July and August caused torrential, flash and riverine floods in different parts of country causing damage to agriculture, infrastructure, roads, settlements and small dams. SUPARCO carried out satellite based rapid crop damage assessment based on analysis of multi-temporal satellite imagery and worked out inundated area and damages of major Kharif crops cotton, sugarcane, rice and other crops.

Cotton crop picking was at its peak during the month of September. During current Kharif season, cotton crop health was at par with last year. However, stressed crop condition was observed in areas with brackish underground water. According to Pest Warning Department Punjab, Sporadic attack of insect pests particularly pink boll worm and infestation of CLCV were reported in some areas of the Punjab.

As per report of Pakistan Cotton Ginning Association (PCGA) on 1st October 2022, cotton arrivals in ginning factories of Pakistan were 2936.153 thousand bales as compared to 3846.463 thousand bales showing a decrease of 23.67 percent. In Punjab the cotton arrivals during the reported period were higher by 3.33 and short by 40.48 percent in Sindh, as compared to the same period of last year.

In local market, average ex-gin cotton price during September 2022 was higher by about 39.10 percent compared to September 2021. Approximate average ex-gin price during September 2022 was Rs. 23439.4 per 40 kg against Rs. 14272.9

during September 2021 showing an increase of Rs.9166.6 per 40 kg.

Sugarcane crop growth was generally satisfactory. Sugarcane productivity may increase this year mainly due to increase in crop area sown and effective and timely crop management activities.

Harvesting of early sown coarse rice has been started in most parts of country. In the Kalar tract of Punjab, basmati rice has reached at maturity stage.

As per report of Indus River System Authority (IRSA) for September 2022, the irrigation water supply was 8.40 MAF against the last year's supply of 12.66 MAF, decreased by 33.64 percent. As compared to the same period of last year.

As per report of National Fertilizer Development Centre (NFDC), total availability of Urea in August 2022 was 745 thousand tons whereas total availability of DAP was 451 thousand tons. During August 2022, off take of Nitrogen, phosphate and Potash decreased by 24.3, 84.4 and 93.6 percent respectively, as compared to the same period of last year.

Normalized Difference Vegetation Index (NDVI) 30th September 2022

Kharif Crops

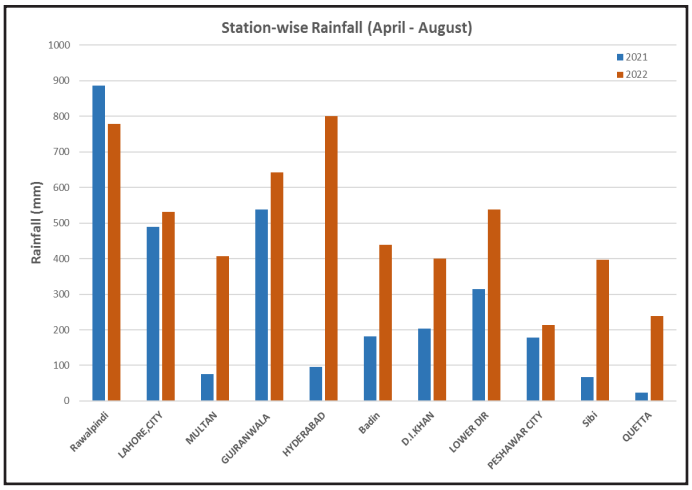
Review of Crop Input Parameters during Kharif 2022-23

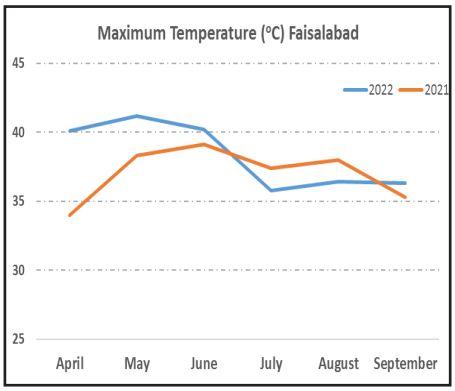
Weather Situation

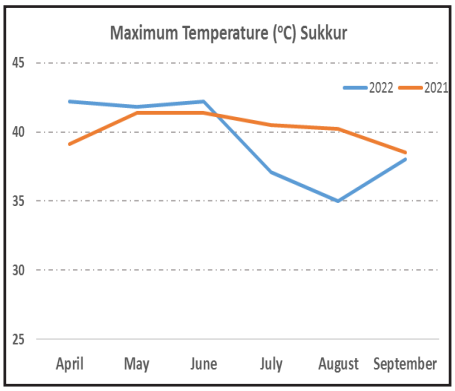
Kharif 2022-23 witnessed unprecedented weather conditions starting from lesser rains and high temperatures early in season and historical heavy rains and cool temperatures during peak growth season.

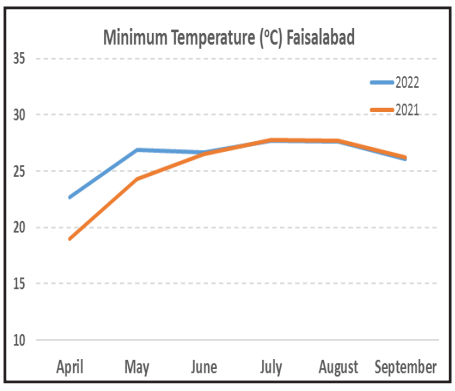
Rainfall during this season were much higher than last year except for the months of April, May and September. During the months of July and August 2022, cumulative rains were 2 to 3 times higher than last year and broke historical records in many cities of Sindh and Balochistan. September, however, had approximately one third of cumulative rains as compared to cumulative rains during the same month of 2021.

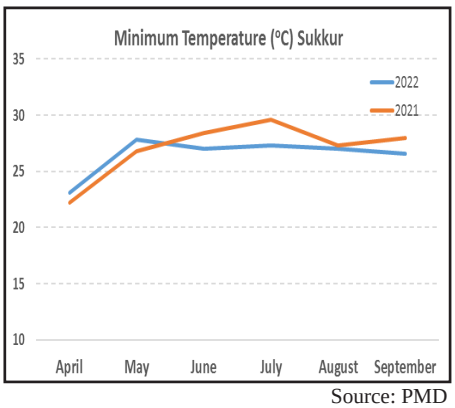
Temperature regime in agriculture areas were generally at par for monthly mean of minimum temperatures as compared to same period of last year. While monthly mean of maximum temperature from June-September, 2022 was generally below as compared to June-September, 2021. This was mainly due to high rains that caused prevailing less warm temperatures as compared to last year.











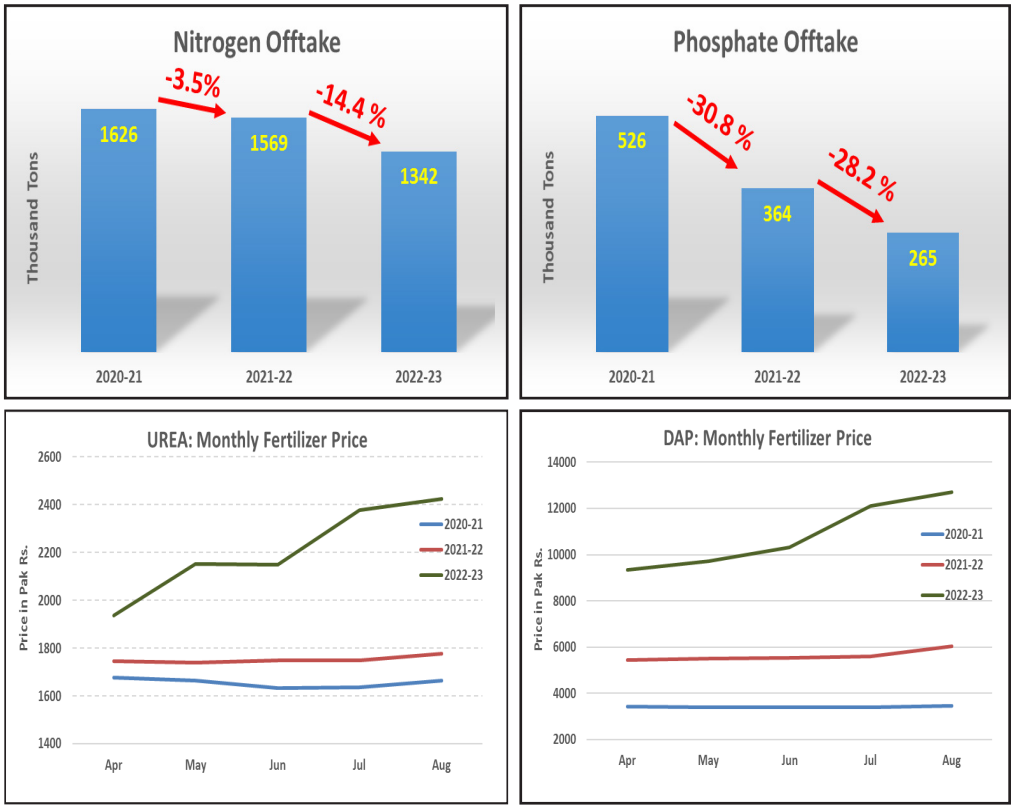
Source: PMD

CROPS SITUATION

This overall weather situation during Kharif 2022-23 generally remained unfavorable for cotton crop due to high rains that flourished pest pressure and hinder crop husbandry measures. This resulted in significant decrease in yield of cotton crop with a positive effect on unaffected rice and sugarcane crops from floods

Fertilizer Situation

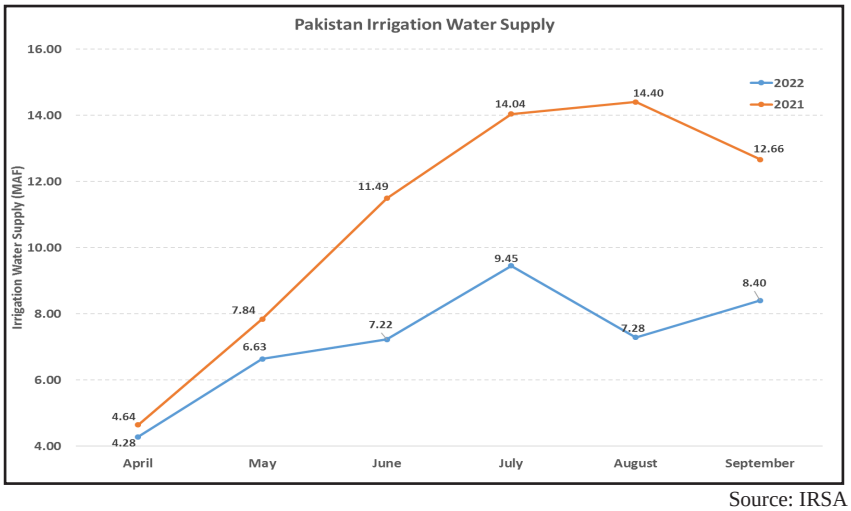
Total Nitrogen, Phosphate and Potash off take during April to August, 2022 decreased by 14.4, 27.2 and 60.7 percent respectively as compared to same period of last year. This less offtake had a significant impact on overall Kharif crops productivity. Less offtake of fertilizers since last two years is mainly attributed to continuously higher upward prices. Average urea and DAP prices during Apr to August 2022 showed an increase of 26.01 and 92.83 percent respectively, as compared same period of last year. Graphs showing offtake of Nitrogen and Phosphate whereas prices of Urea and DAP are given below;



Source: NFDC

Irrigation Water Supplies Situation during April-September 2022

At the start of Kharif season (April-June 2022) irrigation water supply was 18.13 MAF against the last year's supply of 23.97 MAF, down by 5.84 MAF as compared to last year. This indicates a decrease in irrigation water supply by 24.36 percent compared to last year. This situation, however was mitigated by heavy rains during the months of July and August 2022 in Punjab. These rains however, caused flood in Sindh and Balochistan damaging large areas of Kharif crops.



Source: IRSA

Cotton Crop 2022-23

Cotton crop picking was at its peak during the month of September. During current Kharif season, cotton crop health was at par with last year. However, stressed crop condition was observed in areas with brackish underground water.

During the start of season, less irrigation supply affected cotton crop sowing and growth hence limiting to achieve target for sowing cotton crop. Although cotton area sown was higher than last year yet none of the provinces achieved its target. As per report of relevant departments, Punjab has high and Sindh has less cotton area than last year.

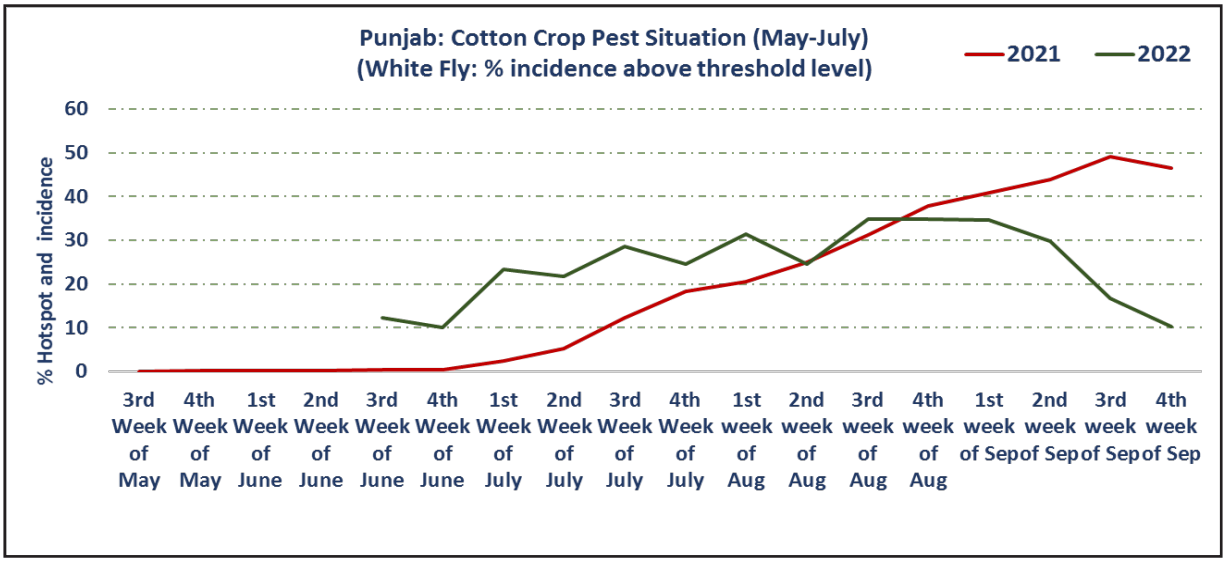
Extreme weather relevant stresses affected cotton since its cultivation. Drought and high temperature during sowing duration (April-June) affected cotton especially in Sindh. In the later stage, above normal rains in South Punjab, cotton belt of Sindh and Balochistan resulted severe damages to standing crop. High humidity due to rains flourished insect pest attacks on large areas to affect cotton productivity. High cost of inputs with limited increase in cotton yield due to adverse weather conditions is another limiting factor to discourage cotton growers to invest on crop. Thus, this season not only cotton area is affected but achieving yield targets or level of last year is also not possible. This indicates a high import of cotton to meet textile industry demand for raw material.

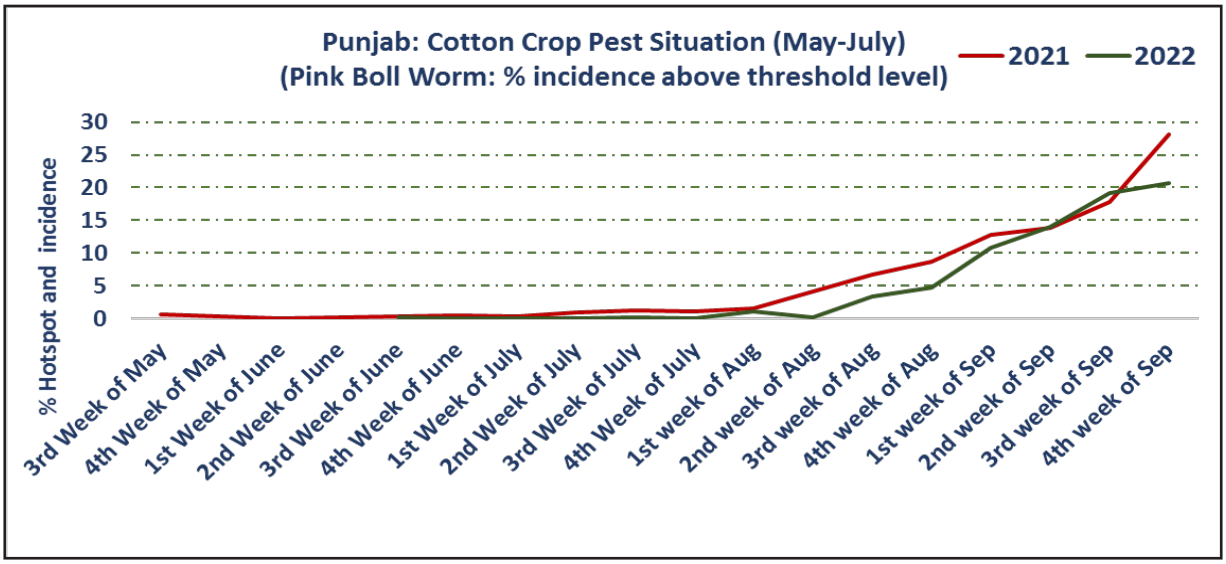
As per report of Pakistan Cotton Ginning Association (PCGA) on 1st October 2022, cotton arrivals in ginning factories of Pakistan were 2936.153 thousand bales as compared to 3846.463 thousand bales showing a decrease of 23.67 percent. In Punjab the cotton arrivals during the reported period were higher by 3.33 and short by 40.48 percent in Sindh, as compared to the same period of last year.The details of cotton arrivals are given below:

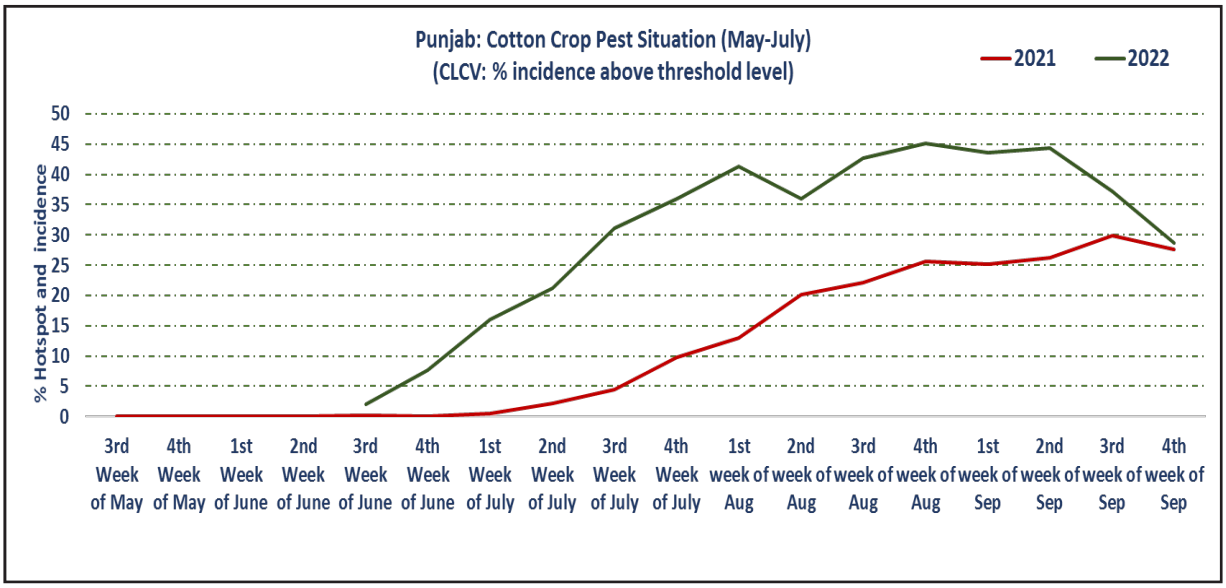
Province	2022	2021	Difference	
	(000 Bales)			Percent
Punjab	1545.632	1495.878	49.754	3.33
Sindh	1390.521	2350.585	-960.064	-40.84
Total	**2936.153**	**3846.463**	**-910.310**	**23.67**

Source: PCGA

According to Pest Warning Department Punjab, Sporadic attack of insect pests particularly whitefly, pink boll worm and infestation of CLCV were reported in some areas of the Punjab. There is an increased infestation as compared to same period of last year. Situation of Punjab province in comparison to last year is given below;





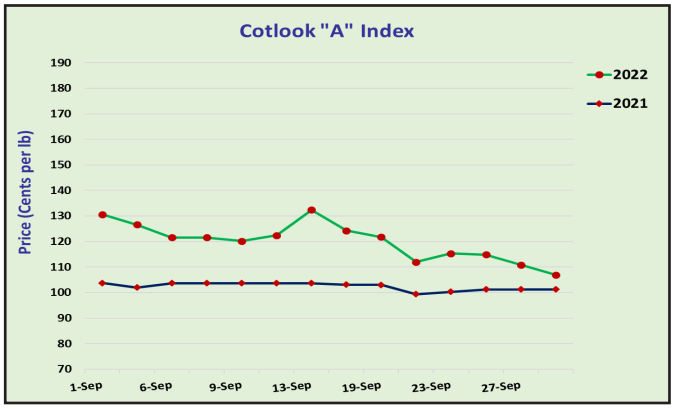


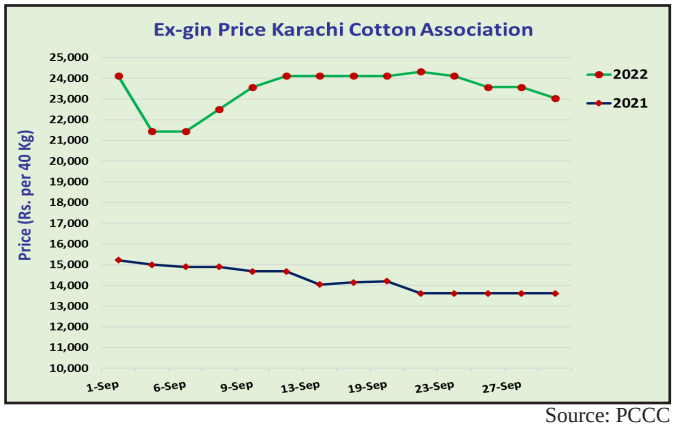
Source: DG Pest Warning & Quality Controls of Pesticides, Punjab

Market Prices of Cotton during September 2022

In the international market, average cotton price during September 2022 was 120.09 cents per lb as compared to average price of 102.40 cents per lb during September 2021, showing an increase of 17.69 cents per lb (up by14.72 percent).

In local market, average ex-gin cotton price during September 2022 was higher by about 39.10 percent compared to September 2021. Approximate average ex-gin price during September 2022 was Rs. 23439.4 per 40 kg against Rs. 14272.9 during September 2021 showing an increase of Rs.9166.6 per 40 kg.





Source: PCCC

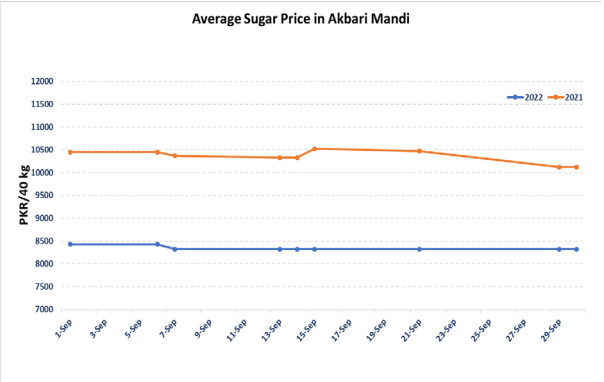
Sugarcane Crop 2022-23

Sugarcane crop growth was generally satisfactory and insect pest situation was also under control. Sugarcane productivity may increase this year mainly due to increase in crop area sown and effective and timely crop management activities. Moreover sugarcane was less affected crop due to current rains / flood. These rain spells may have positive impact on sugarcane productivity in other than continuous inundated areas because of higher sugar price and better sugarcane procurement price in the market.

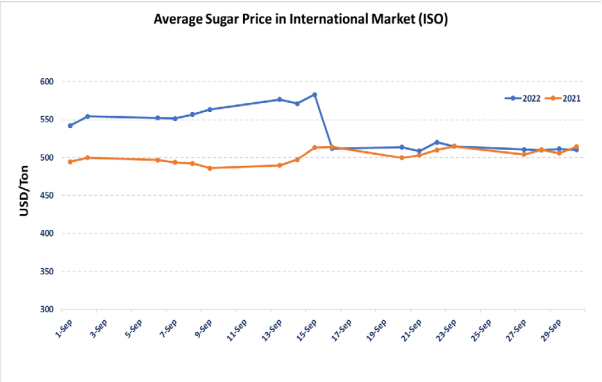
Sugar price in the international market (White Sugar Price Index) during September 2022 was approximately 6.44 Percent higher compared to September 2021. Average sugar price during September 2022 was USD 536.914 per ton against the average sugar price of USD 502.297 per ton during September 2021, showing average increase of USD 34.62 per ton.

Sugar prices in the local market (Akbari Mandi) also remained lower during September 2022 as compared to September 2021. Average sugar price during September 2022 was around Rs. 8348.33 per 100 kg as against the average sugar price of Rs. 10353.33 per 100 kg showing a decrease of around Rs. 2005.00 per 40 kg (approx. 24.01 percent lower).

Graphs showing daily white sugar price index in the International market (International Sugar Organization) and daily average sugar price in the local market (Akbari Mandi) are given below:



Source: Akbari Mandi



Source: ISO

Rice Crop 2022-23

Rice particularly of basmati transplantation / sowing operations ended during the month of August. Rice transplantation remained at peak during July with late transplantation during August. Rice was at varying growth stages from transplantation to maturity / grain formation depending upon sowing timelines.

Pakistan had highest rice production in the last year due to significant increase in rice area. This high rice production resulted in increased rice export from the country. Pakistan rice exports showed an increase of 32 percent in terms of quantity and 38 percent in terms of value during 2021-22 in comparison to 2020-21. Table showing comparison of basmati and other rice varieties exports during the financial years 2021-22 and 2020-21 are given below;

Proposed Rice Exports (July-June) Comparison						
Rice Type	Quantity (Tons)			Value (USD)		
	2021-22	2020-21	% difference	2021-22	2020-21	% difference
Basmati	750,517	619,428	21	124,021	90,767	37
Other	4,126,674	3,065,509	35	325,850	234,819	39
Total	4,877,191	3,684,937	32	449,871	325.586	38

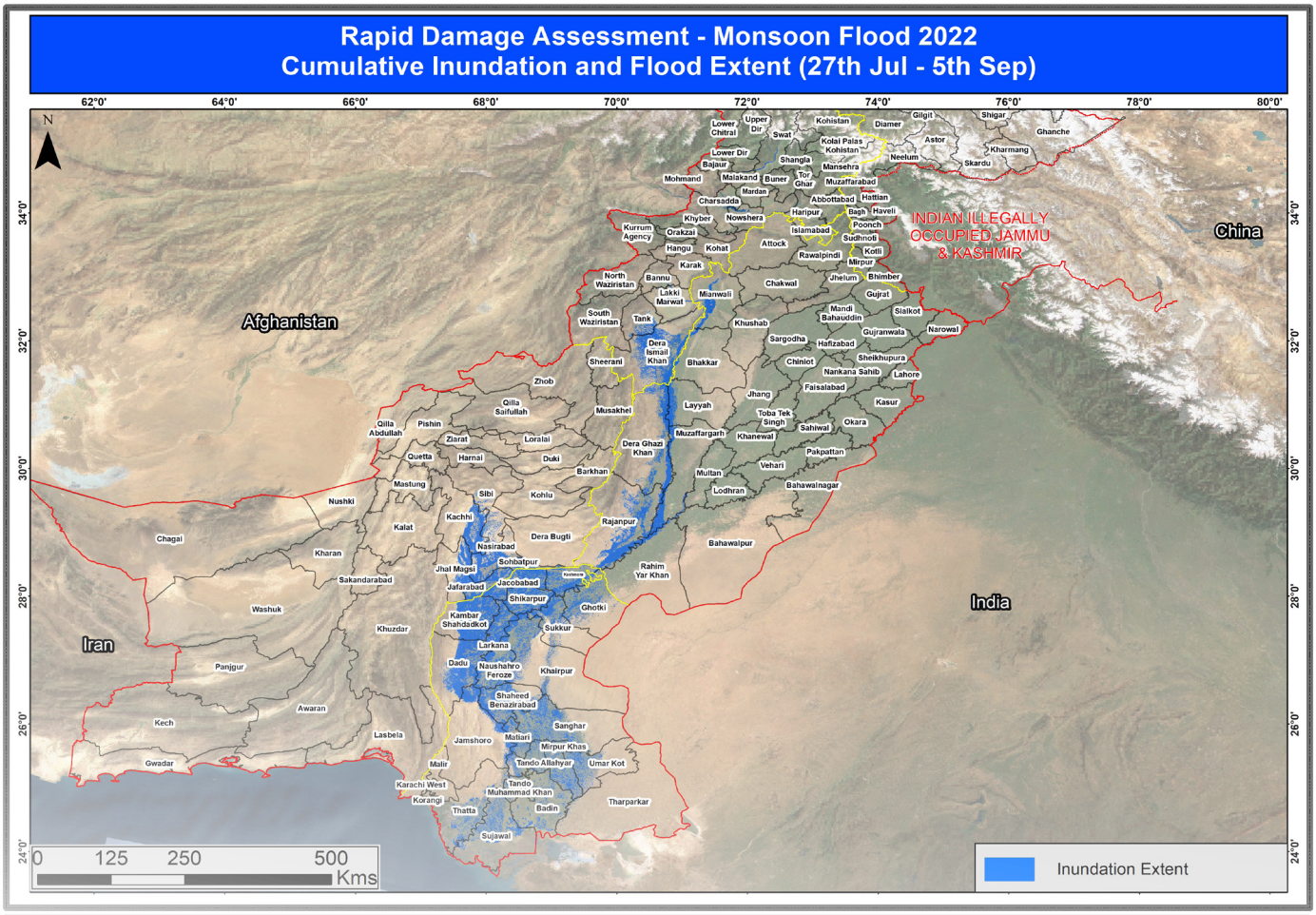
Floods / Rains 2022: Crops Damages Assessment

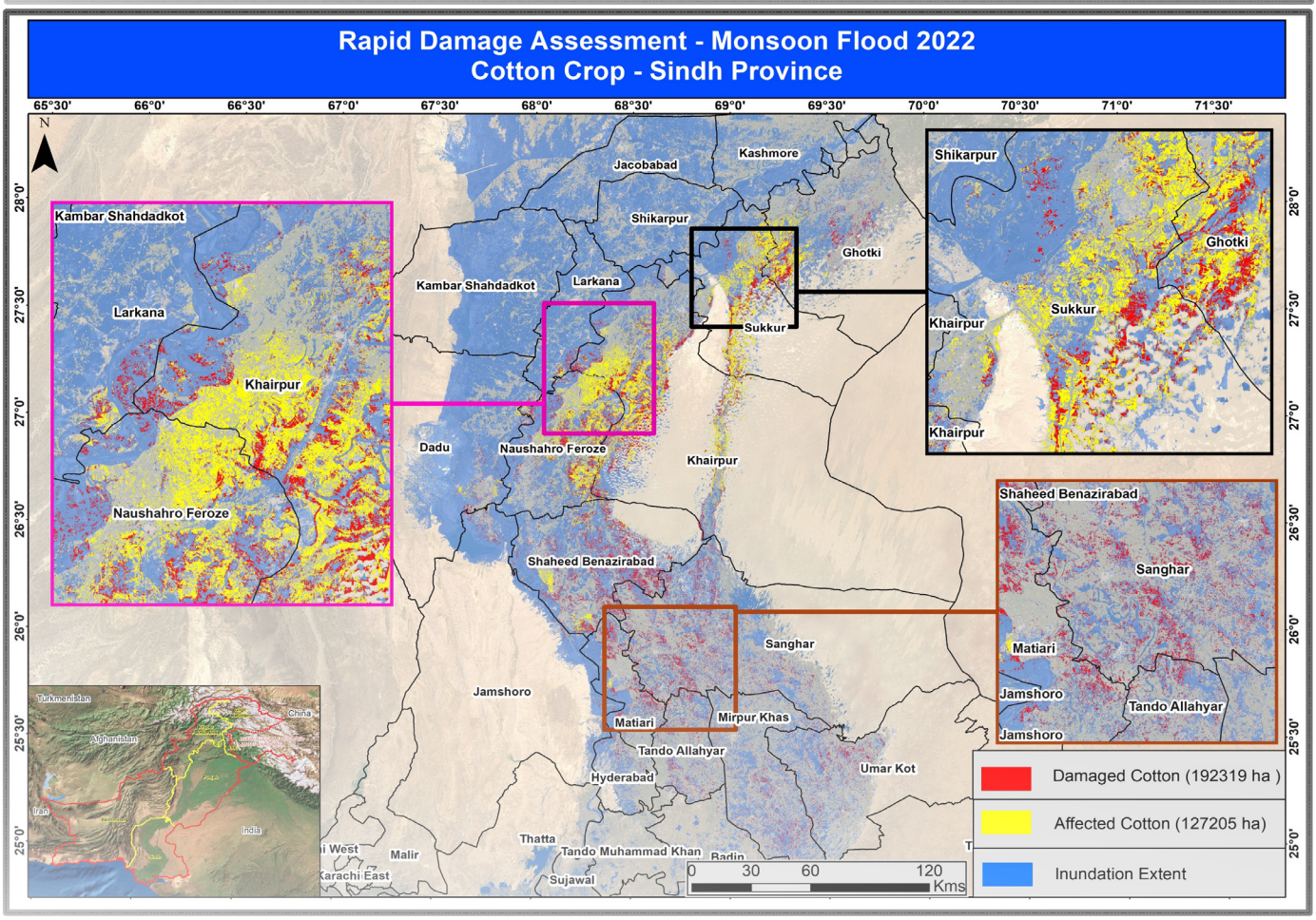
Monsoon season 2022 (Jul-Sep) had above normal rainfall inline with the forecast of PMD. The magnitude of above normal rains were however, beyond expectations with historical high records particularly in Sindh and parts of Balochistan. Satellite based hydro-meteorological analysis showed that current monsoon weather systems were more intense over Sindh followed by Balochistan, Khyber Pakhtunkhwa, Gilgit Baltistan, Azad Kashmir and Punjab. Episodes of wide spread rain spells during July and August caused torrential, flash and riverine floods in different parts of country. These heavy rains/flood affected large area starting from North in Gilgit Baltistan to Khyber Pakhtunkhwa, Punjab, Sindh and Balochistan causing havoc to agriculture, infrastructure, roads, settlements and small dams. Agricultural damages not only affected rural livelihood but also created food security threats due to damages to standing crops, deteriorating wheat storage reserves and disruption of supply chain.

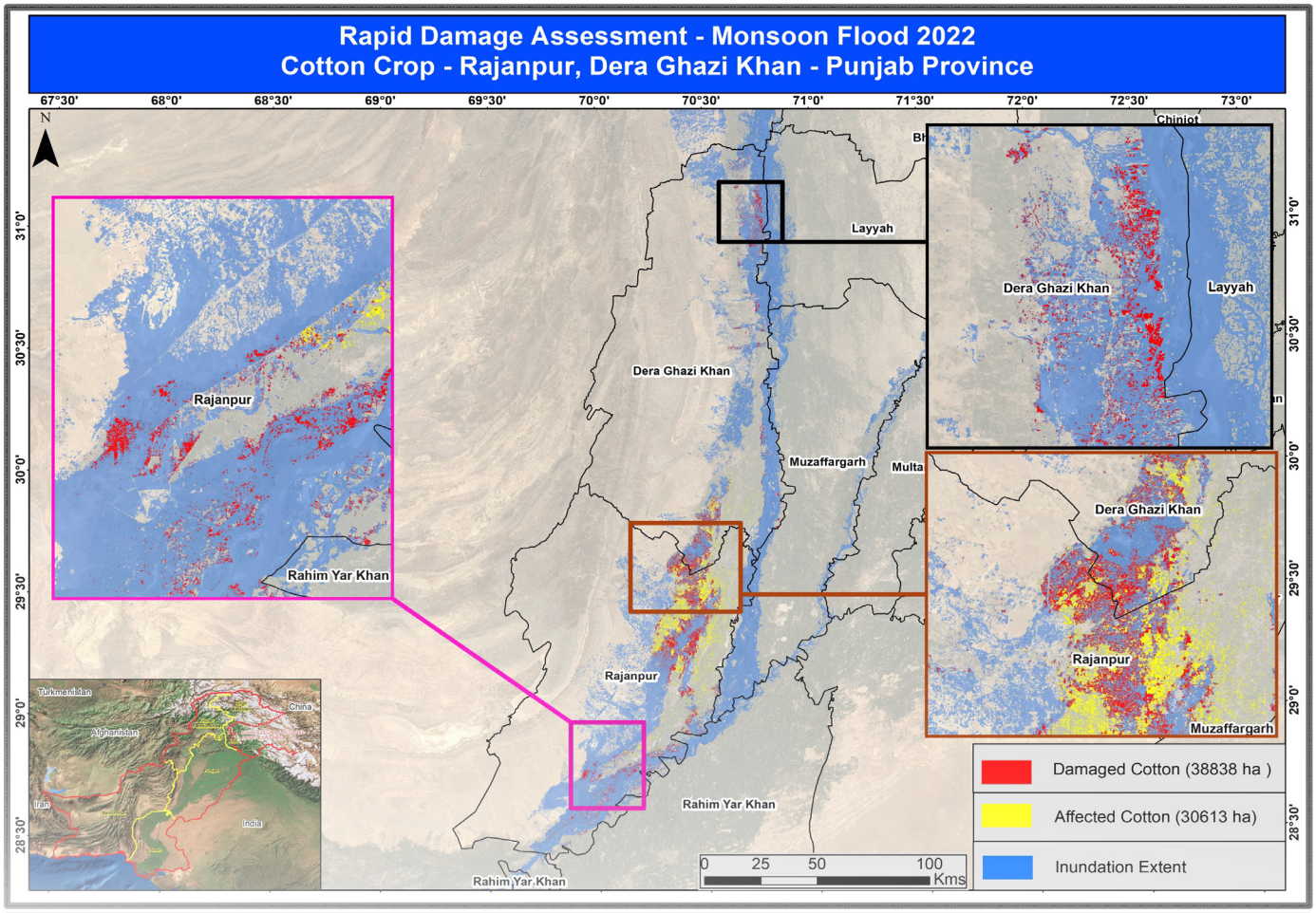
SUPARCO carried out rapid crop damage assessment based on analysis of multi-temporal satellite imagery. The imagery (pre and post) utilized in this assessment includes PRSS-1, PakTES-1A, SPOT-6/7, Sentinel-1, Sentinel-2. SUPARCO worked out inundated area of major Kharif crops cotton, sugarcane, rice and other crops. Extent and degree of damages for these crops was dependent upon intensity of flood (depth, velocity, duration) and crop physiology. Cotton is most sensitive to standing water for above one day whereas rice is water loving crop with a positive response to standing water. Sugarcane however, is a water hydrophilic crop requiring well drained soil with moderate rate of infiltration.

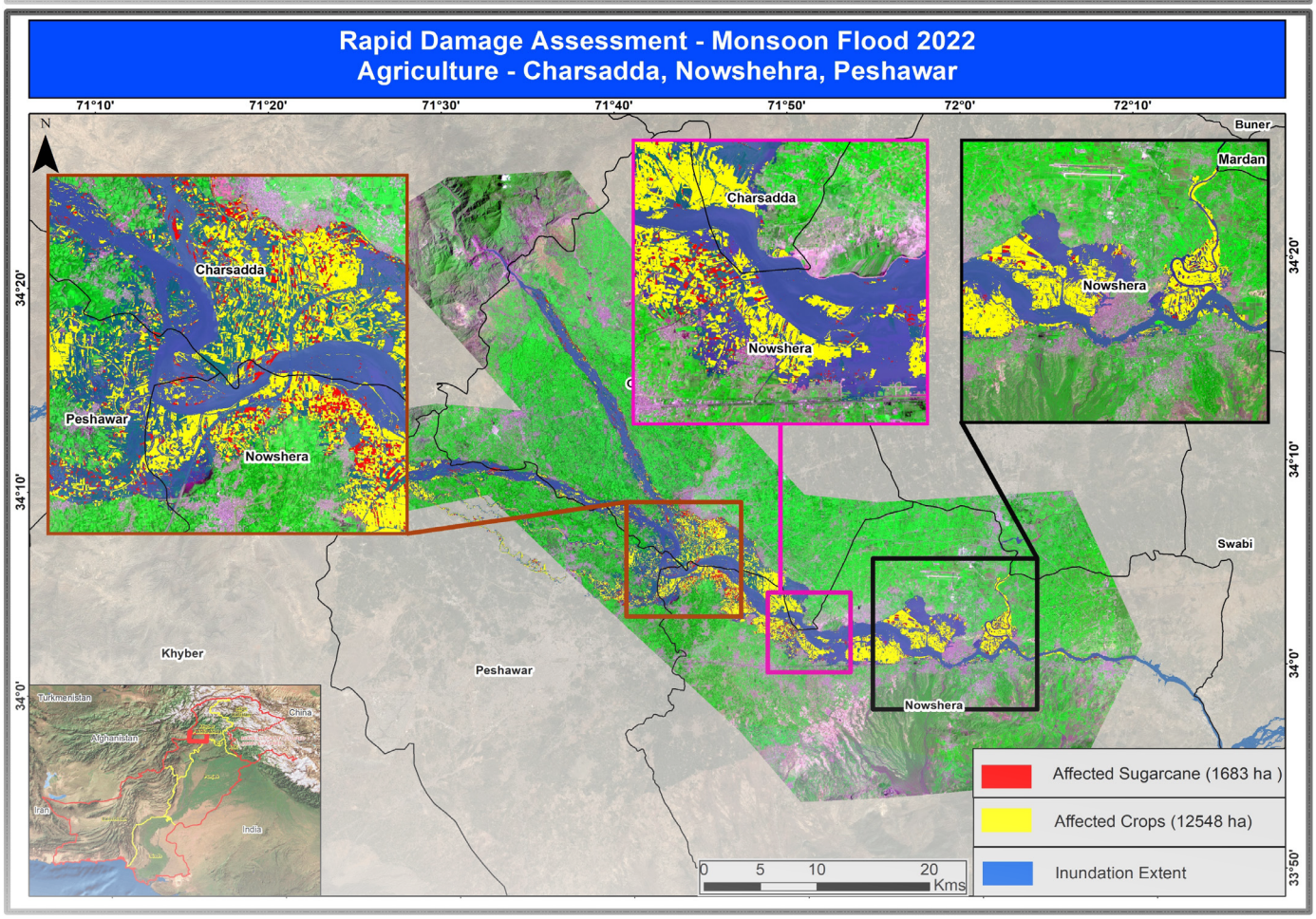
The satellite based assessment shows that floods have inundated a large crop area in the country. The most affected areas include districts of Kambar Shahdadkot, Jacobabad, Khairpur, Shikarpur and Naushahro Feroze in Sindh, Districts of Dera Ismail Khan, Nowshera, Peshawar and Swat in Khyber Pakhtunkhwa and Dera Ghazi Khan and Rajanpur in Punjab. SUPARCO monitored these flood affected areas with ongoing inundation/ recession. It helped to have reliable Kharif crops estimations due to resurgence/revival of crops in flood peripheries. The province wise and district wise estimates are given below;

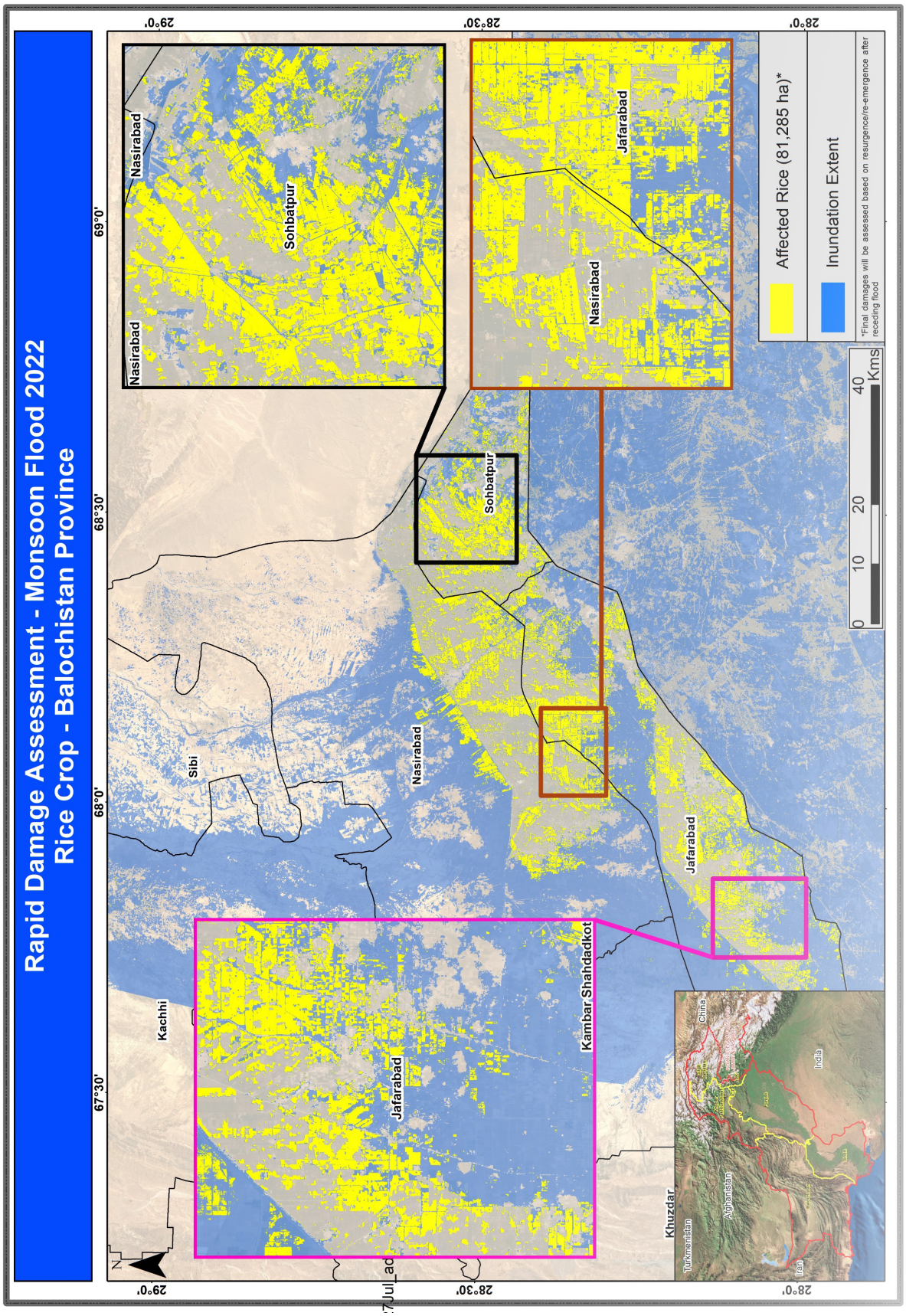
Province-wise Total & Damaged Crop Area						
Province	**Rice Sown**	**Damaged Rice**	**Cotton Sown**	**Damaged Cotton**	**Sugarcane Sown**	**Damaged Sugarcane**
Punjab	2,244.8	21.6	1,412.3	86.0	828.3	14.5
Sindh	1,250.1	275.5	706.7	555.9	295.0	18.9
Khyber Pakhtunkhwa	5,4307	1,7343			104,405.0	11,310.0
Balochistan	170.8	39.1				
Pakistan	**57,968.7**	**17,679.2**	**2,119.0**	**641.9**	**105,528.3**	**11,343.4**


Rapid Damage Assessment - Monsoon Flood 2022
Cumulative Inundation and Flood Extent (27th Jul - 5th Sep)
Afghanistan
Iran
India
China
INDIAN ILLEGALLY OCCUPIED JAMMU & KASHMIR
0 125 250 500 Kms
Inundation Extent


Rapid Damage Assessment - Monsoon Flood 2022
Cotton Crop - Sindh Province
Kambar Shahdadkot
Larkana
Khairpur
Naushahro Feroze
Shaheed Benazirabad
Sanghar
Matiari
Jamshoro
Tando Allahyar
Mirpur Khas
Umar Kot
Hyderabad
Thatta
Sujawal
Dadu
Jacobabad
Kashmore
Shikarpur
Ghotki
Sukkur
0 30 60 120 Kms
Damaged Cotton (192319 ha)
Affected Cotton (127205 ha)
Inundation Extent

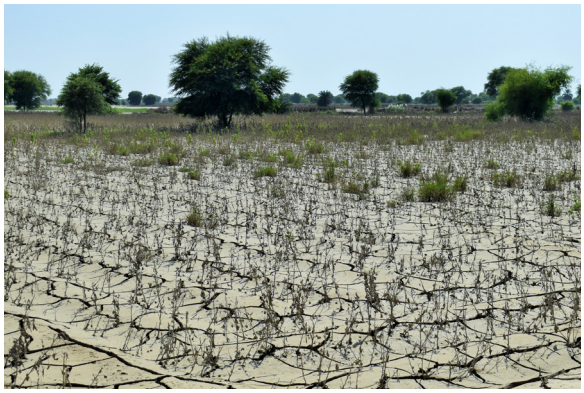

Rapid Damage Assessment - Monsoon Flood 2022
Cotton Crop - Rajanpur, Dera Ghazi Khan - Punjab Province
Rajanpur
Rahim Yar Khan
Dera Ghazi Khan
Layyah
Muzaffargarh
Multa
Chiniot
Damaged Cotton (38838 ha)
Affected Cotton (30613 ha)
Inundation Extent
0 25 50 100 Kms


Rapid Damage Assessment - Monsoon Flood 2022
Agriculture - Charsadda, Nowshehra, Peshawar
Charsadda
Peshawar
Nowshera
Mardan
Buner
Swabi
Khyber
Affected Sugarcane (1683 ha)
Affected Crops (12548 ha)
Inundation Extent
0 5 10 20 Kms


Rapid Damage Assessment - Monsoon Flood 2022
Rice Crop - Balochistan Province
Affected Rice (81,285 ha)*
Inundation Extent
*Final damages will be assessed based on resurgence/re-emergence after receding flood
0 10 20 40 Kms
N
Kachhi
Sibi
Nasirabad
Jafarabad
Khuzdar
Kambar Shahdadkot
Sohbatpur
China
India
Afghanistan
Turkmenistan
Iran
67°30'
68°0'
68°30'
69°0'
29°0'
28°30'
28°0'



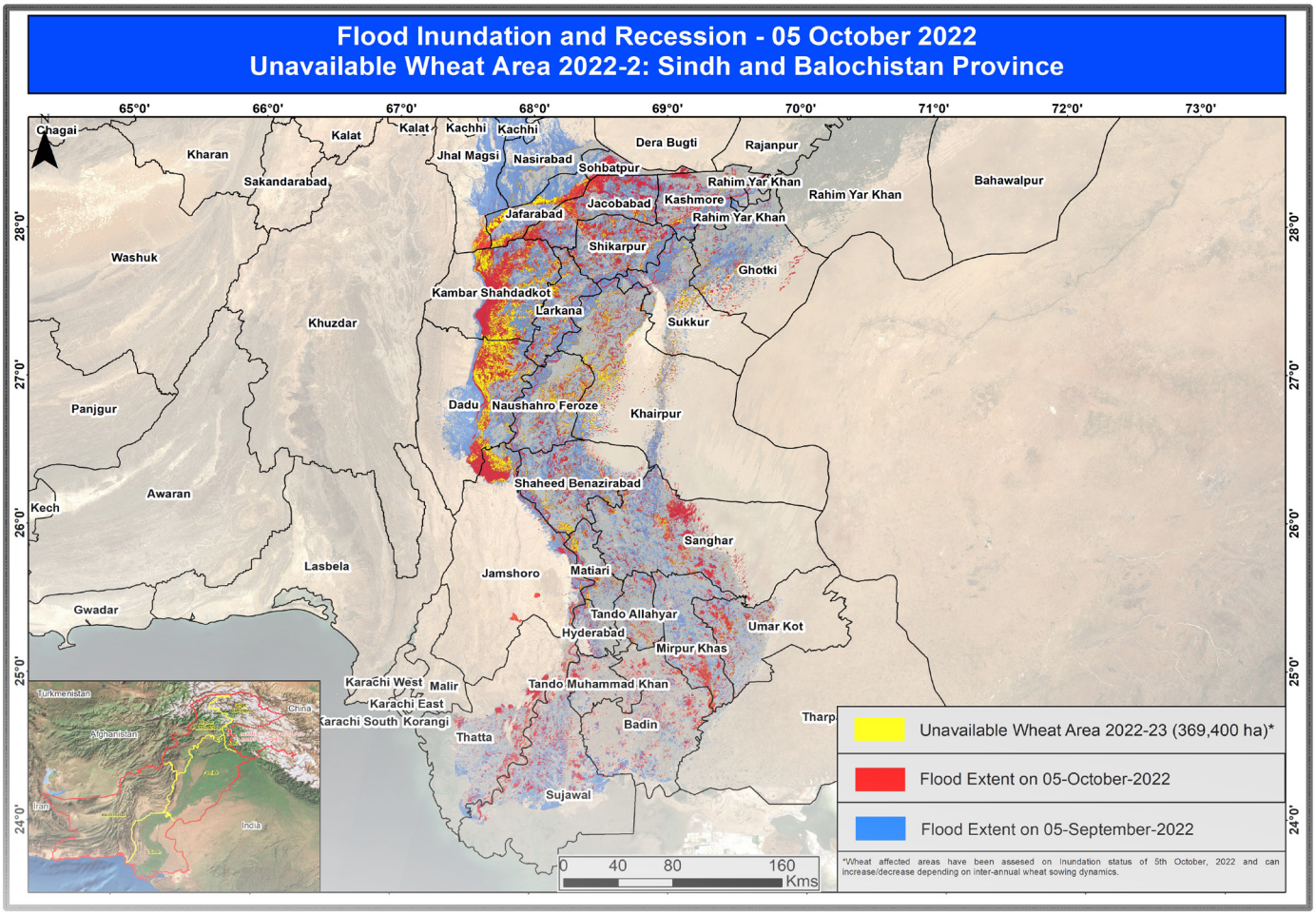


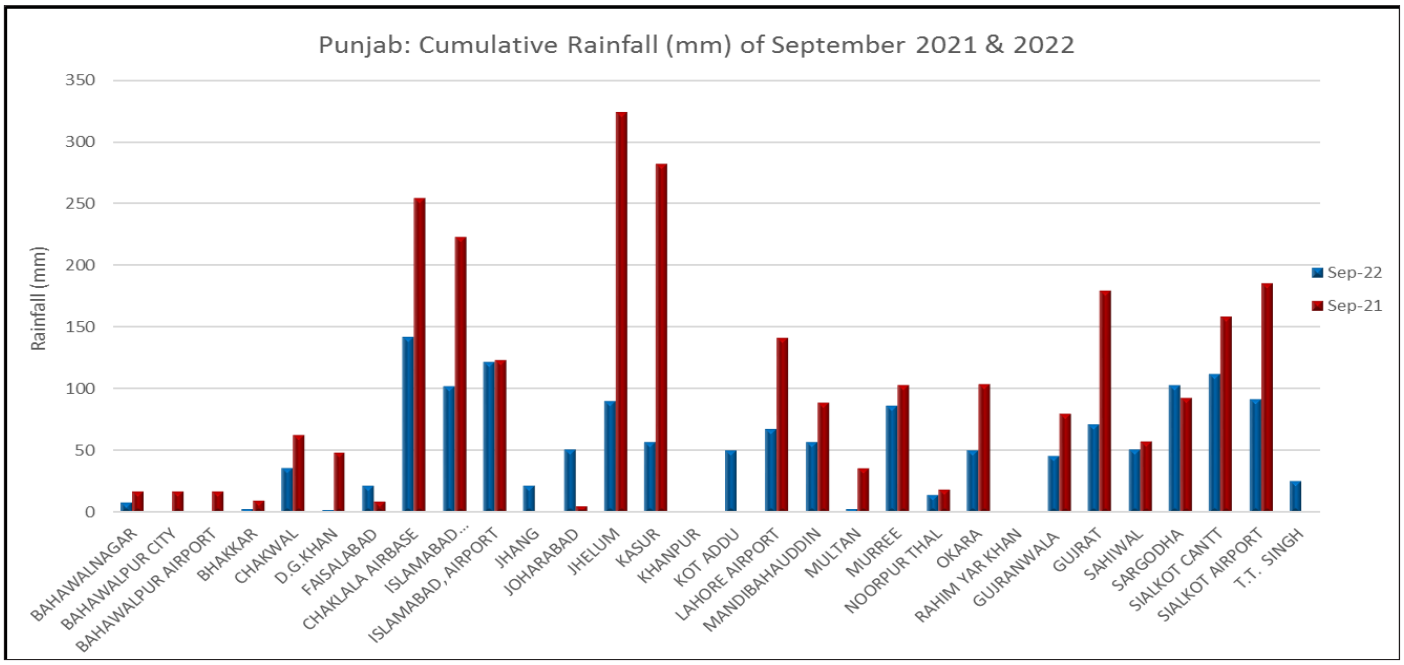
Wheat 2022-23

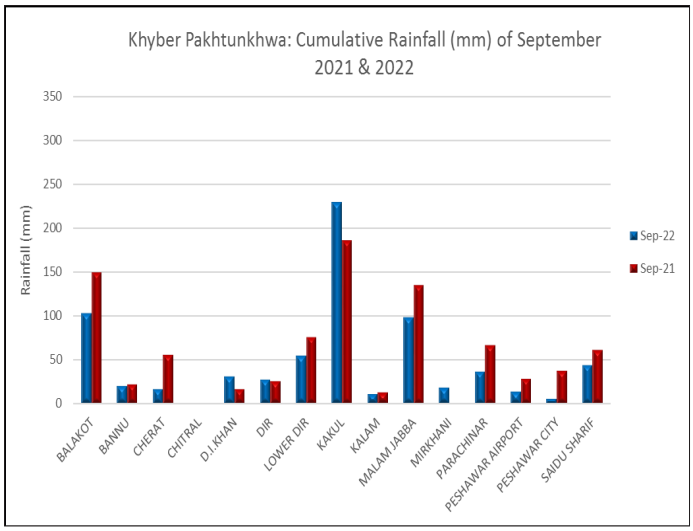
Wheat being staple food crop is directly linked with national food security. Torrential rains and floods inundated large areas during current kharif season, in Sindh and balochistan. Shallow to deep submergence had devasting effects on kharif crops especialy in low lying areas. Most of Sindh province has flat topographic profile and low gredient provides a slow surface runoff for recession of accumulated floods. Most of the flood water was receeding in parts of Sindh but in many low lying areas with higher inundation depth runoff is almost negligible. This prolonged inundation will affect land availability for rabi crops cultivation especily wheat crop 2022-23.

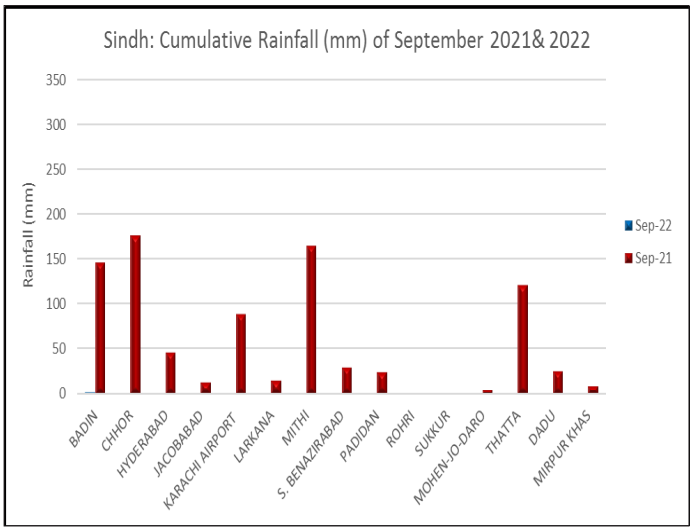
SUPARCO worked out on wheat 2022-23 area availability on satellite imagery upto 05th October, 2022 in Sindh and Balochistan. According to satellite based analytics till now 339.1 and 39.1 thousand hectares (19 and 18 %) in Sindh and Balochistan respectively, are not available for wheat 2022-23 in comparison to wheat area sown in last year. Map showing geospatial distribution of area likely to be not available for wheat sowing during rabi 2022-23 is given below;

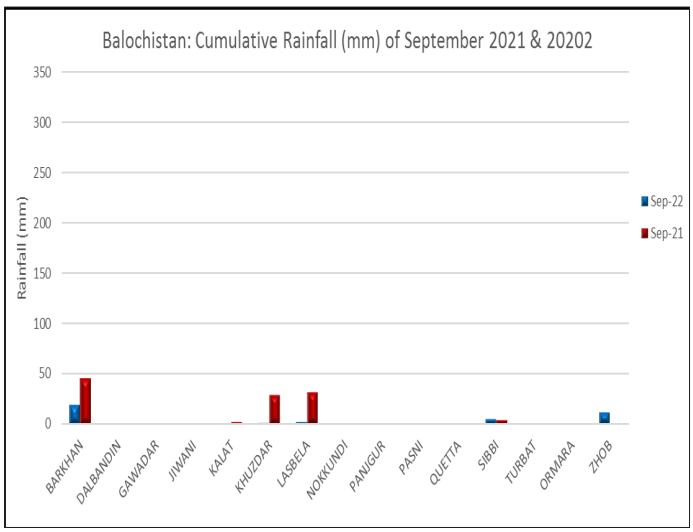


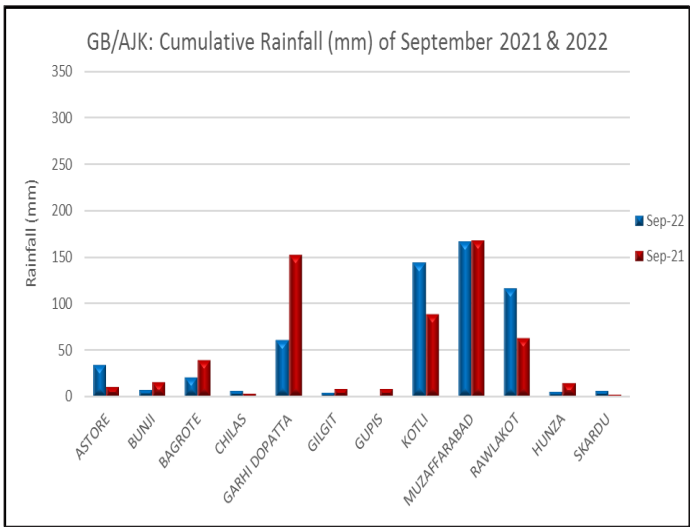
Monthly Rainfall (mm): September (2021 & 2022)







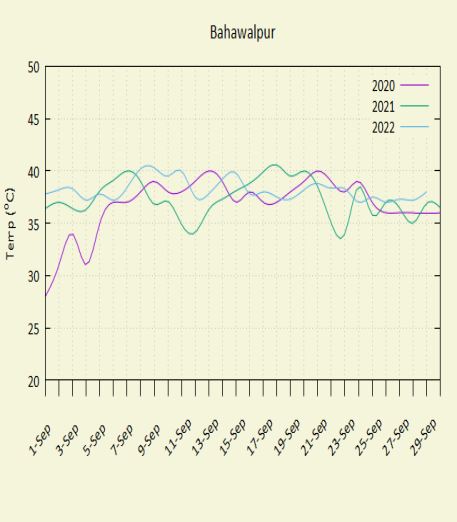


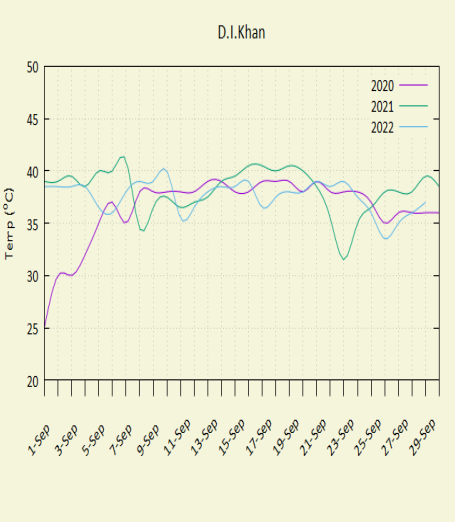


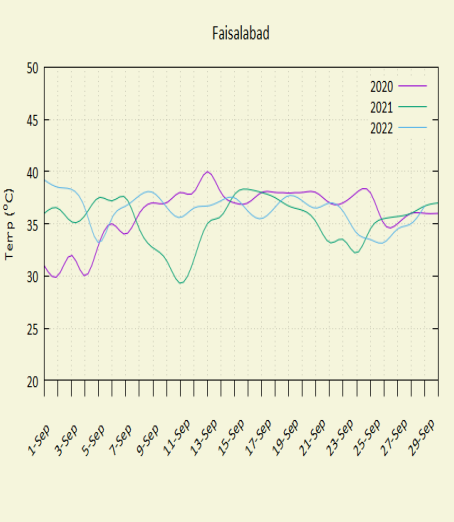
Source: PMD

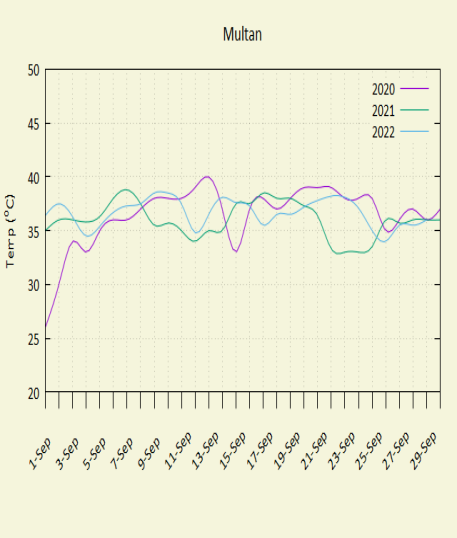
Maximum Temperature: September, 2022

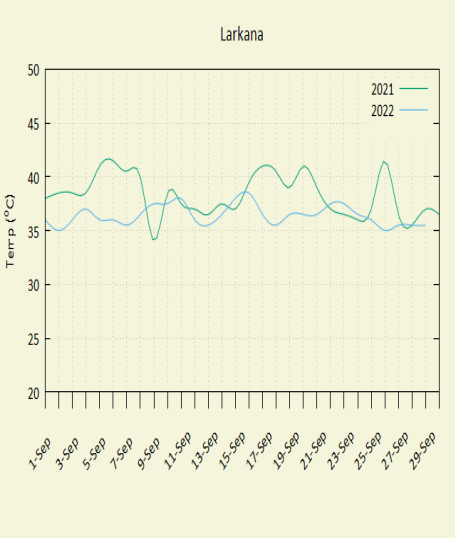
The ranges of maximum temperature (^{0}C) during September 2022 were as follows:

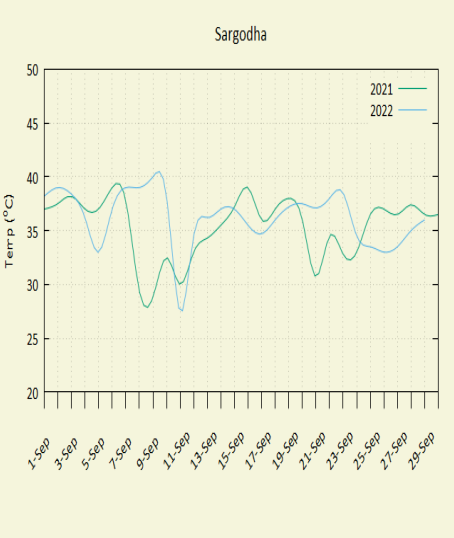


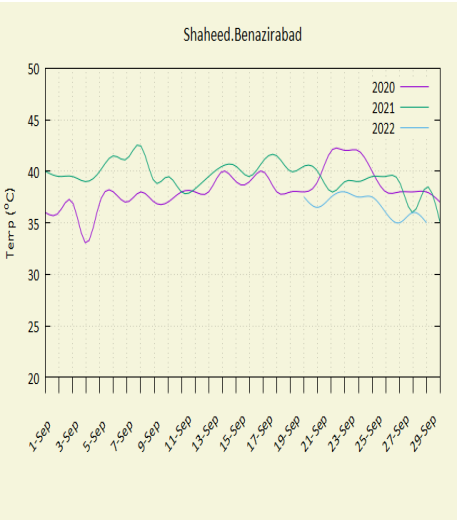


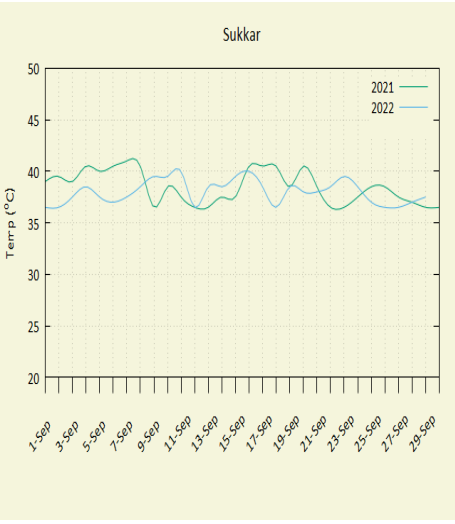


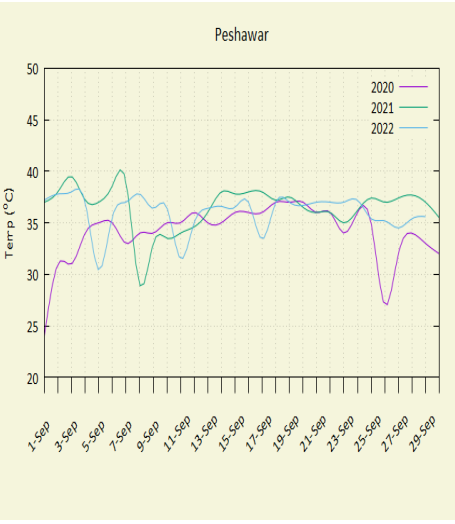












Source: PMD

Minimum Temperature: September, 2022

The ranges of minimum temperature (^{0}C) during September 2022 were as follows:

Source: PMD

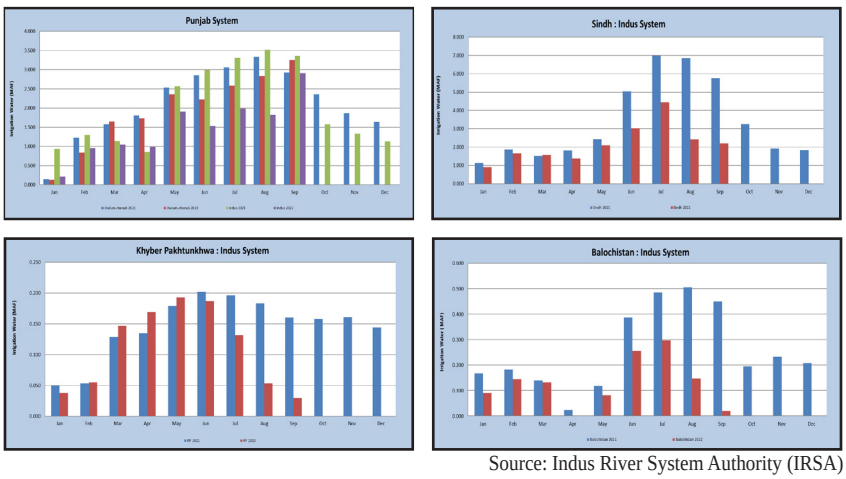
Irrigation Water Supply: September, 2022

The irrigation water supply during September 2022 was 8.40 MAF against the last year's supply of 12.66 MAF, lower by 4.26 MAF (33.64 percent). During September 2022, as compared to the same period of last year, the supply in Punjab was 6.16 MAF (lower by 2.11 percent), Sindh was 2.19 (lower by 61.91 percent), Khyber Pakhtunkhwa was 0.03 MAF (lower by 81.25 percent) while Baluchistan received water supply of 0.02 MAF (lower by 95.56 percent).

During September 2022, all the provinces deemed require virtually less supply of water due to heavy rainfall and floods in Pakistan during Monsoon season.

	Month	Year	Punjab			Sindh	Khyber Pakhtunkhwa	Balochistan	Total
			Jhelum-Chenab	Indus	Total				
			Million Acre Feet						
Kharif 2022-23	Apr	2022	1.73	0.98	2.72	1.39	0.17	0.00	4.28
		2021	1.81	0.85	2.66	1.82	0.13	0.02	4.64
		Change	-0.08	0.13	0.06	-0.43	0.03	-0.02	-0.36
		% change	-4.28	15.08	2.16	-23.66	25.00	-100.00	-7.82
	May	2022	2.36	1.91	4.26	2.10	0.19	0.08	6.63
		2021	2.53	2.56	5.10	2.44	0.18	0.12	7.84
		Change	-0.18	-0.65	-0.83	-0.35	0.01	-0.04	-1.20
		% change	-6.98	-25.53	-16.31	-14.24	7.53	-32.00	-15.36
	Jun	2022	2.23	1.53	3.76	3.02	0.19	0.26	7.22
		2021	2.86	3.00	5.85	5.05	0.20	0.39	11.49
		Change	-0.63	-1.46	-2.09	-2.03	-0.02	-0.13	-4.27
		% change	-22.01	-48.81	-35.73	-40.20	-7.84	-33.85	-37.14
	Jul	2022	2.59	1.99	4.57	4.44	0.13	0.30	9.45
		2021	3.06	3.31	6.37	6.99	0.20	0.49	14.04
		Change	-0.47	-1.32	-1.80	-2.54	-0.06	-0.19	-4.59
		% change	-14.45	-39.91	-28.19	-36.38	-32.86	-38.80	-32.69
	Aug	2022	2.84	1.83	4.66	2.42	0.05	0.15	7.28
		2021	3.34	3.52	6.86	6.86	0.18	0.51	14.40
		Change	-0.50	-1.69	-2.20	-4.43	-0.13	-0.36	-7.12
		% change	-15.11	-48.11	-32.03	-64.65	-70.75	-70.99	-49.42
	Sep	2022	3.25	2.91	6.16	2.19	0.03	0.02	8.40
		2021	2.93	3.36	6.29	5.76	0.16	0.45	12.66
		Change	0.32	-0.45	-0.13	-3.57	-0.13	-0.43	-4.26
		% change	10.89	-13.47	-2.141	-61.91	-81.25	-95.59	-33.64
	Total	2022	14.99	11.15	26.14	15.56	0.76	0.80	43.27
		2021	16.53	16.60	33.13	28.91	1.05	1.97	65.07
		Change	-1.54	-5.45	-6.99	-13.35	-0.29	-1.17	-21.80
		% change	-9.33	-32.85	-21.10	-46.17	-27.66	-59.38	-33.50

Source: Indus River System Authority (IRSA)



Source: Indus River System Authority (IRSA)

Fertilizer Offtake

As per report of National Fertilizer Development Centre (NFDC), the month of August 2022 started with opening inventory of 205 thousand tons of Urea. During August 2022, domestic Urea production was 541 thousand tons with total availability of 745 thousand tons. Urea offtake during August remained 552 thousand tons leaving behind closing balance of 195 thousand tons.
The opening inventory of DAP for August 2022 was 374 thousand tons. During August 2022, domestic production of DAP was 77 thousand tons, while 0.40 thousand tons was imported making total availability 451 thousand tons. DAP offtake during August 2022 remained only 26 thousand tons leaving behind closing balance of 426 thousand tons.

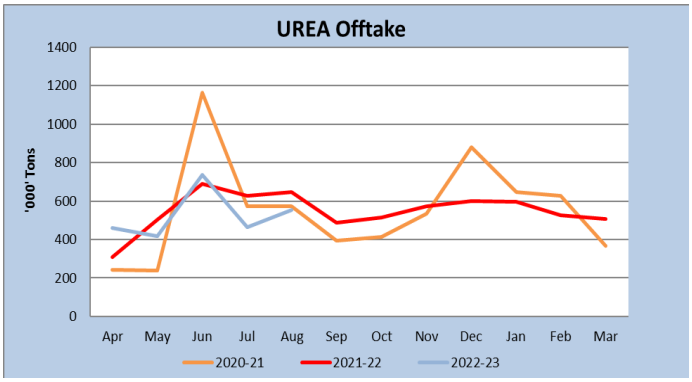
During August 2022, offtake of Nitrogen, Phosphate and Potash decreased by 24.4, 84.5 and 93.6 percent respectively, as compared to same period of last year.

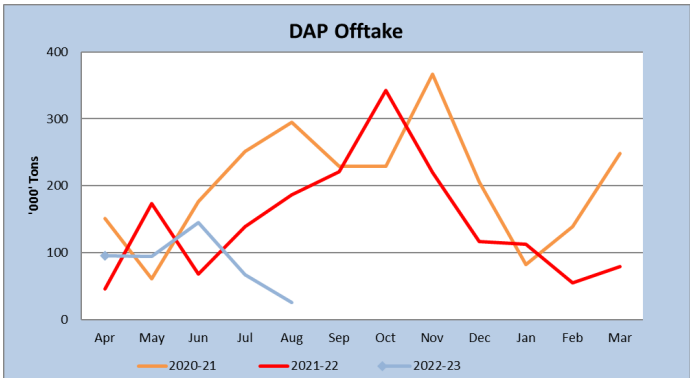
Product	Opening Inventory	Domestic Production	Imports	Total Availibility	Offtake	Write On/Off	Closing Balance
	000 Tons						
Urea	205	541	0	745	552	2	195
DAP	374	77	0	451	26	1	426

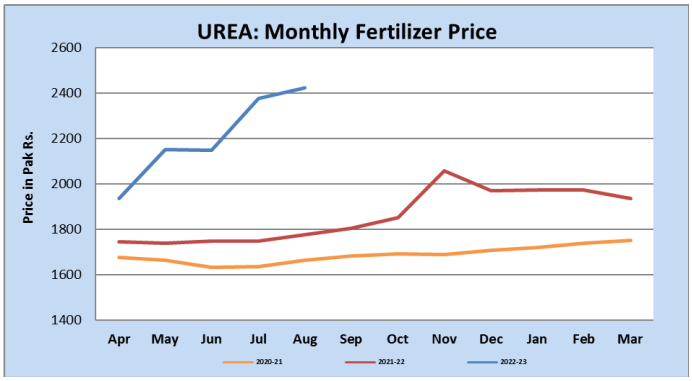
Month	Fertilizer Offtake Rabi 2022-23				Fertilizer Offtake Rabi 2021-22				% Change			
	Nitrogen	Phosphate	Potash	Total	Nitrogen	Phosphate	Potash	Total	Nitrogen	Phosphate	Potash	Total
	(000 Tons)											
Apr	159.7	60.0	2.7	222.3	192.5	41.9	4.8	239.3	-17.1	42.9	-44.0	-7.1
May	238.9	60.5	2.7	302.1	293.0	90.1	3.4	386.4	-18.5	-32.9	-19.1	-21.8
Jun	398.9	80.7	3.0	482.7	365.0	42.2	4.2	411.4	9.3	91.2	-27.9	17.3
Jul	261.6	46.7	1.5	309.8	344.2	80.1	3.8	428.0	-24.0	-41.7	-61.0	-27.6
Aug	283.2	17.2	0.7	301.1	374.3	110.0	10.8	495.1	-24.3	-84.4	-93.6	-39.2
Total	1342.3	265.1	10.6	1618.0	1569.0	364.3	27.0	1960.3	-14.4	-27.2	-60.7	-17.5

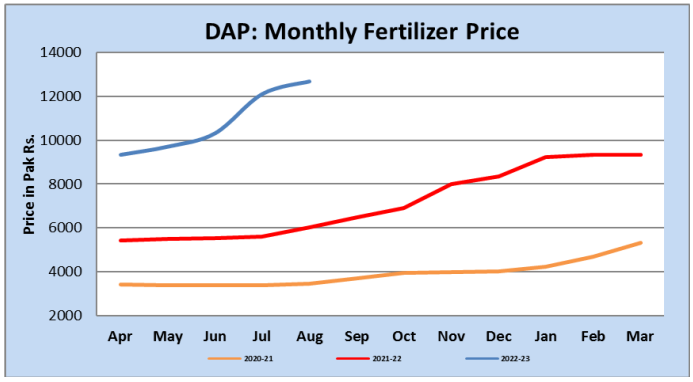
Source: MRR.09/2022 NFDC

The fertilizer statistics and prices are depicted in the graphs below:









Source: MRR.09/2022 NFDC

زرعی سفارشات

اکتوبر

کپاس:۔

1۔ چنائی کے بعد پھٹی کو ایک یا دو دوپ ضرور لگوائیں۔ تاکہ ذخیرہ کرتے ہوئے پھٹی میں نمی کا تناسب 8 سے 10 فیصد تک ہو۔ زیادہ نمی پھٹی کے معیار کو متاثر کرتی ہے۔

2۔ کپاس کے معیار کو عالمی سطح کے مطابق رکھنے کے لیے مندرجہ ذیل اقدامات کیے جائیں۔

- چنائی سے لیکر ذخیرہ کرنے تک کپاس کو آلائشوں مثلاً نمی، سر کے بال، رسیاں، خشک پتے وغیرہ سے صاف رکھا جائے۔
- چنائی اور ترسیل کے دوران صرف اور صرف سوتی کپڑا استعمال کیا جائے۔
- چنائی کو اقسام کے لحاظ سے الگ الگ ذخیرہ کریں۔
- چنائی 40 سے 50 فیصد ٹینڈے پوری طرح کھل جانے پر شروع کریں اور چنائی کا آغاز اوس ختم ہونے پر کریں۔
- آخری چنائی کی پھٹی کم معیار کی ہوتی ہے۔ اس لیے اس کو الگ رکھیں۔

دھان:۔

1۔ کھیت میں پتہ لپیٹ سنڈی یا بچھیتی اقسام پر بیماریوں کے حملہ کی صورت میں مقامی محکمہ زراعت کے مشورے سے مناسب زہروں کا استعمال جاری رکھیں۔

2۔ باسمتی اقسام میں دانہ بھرتے وقت پانی کی کمی نہ آنے دیں نیز کٹائی سے 15 دن پہلے آخری پانی لگا دیں۔

3۔ دھان کی کٹائی کے لیے ایسی کمبائن ہارویسٹر استعمال کریں۔ جس میں دھان کی کٹائی کے لیے ایڈجسمنٹ ہو۔

4۔ فصل کی کٹائی اور پھنڈائی کا عمل روزانہ کی بنیاد پر مکمل کریں۔

کماد:۔

1۔ ستمبر کاشت جلد از جلد مکمل کریں۔ تاخیر سے کاشت پیداوار میں کمی کا باعث بنتی ہے۔

2۔ درمیانی زرخیز زمین کے لیے سوا تین بوری یوریا، دو بوری ڈی اے پی اور دو بوری پوٹاش استعمال کریں۔ زمین کی زرخیزی کو مد نظر رکھتے ہوئے کھادوں کی مقدار میں کمی بیشی کا جاسکتی ہے۔

3۔ فاسفورس اور پوٹاش کھادوں کا استعمال بوقت بجائی کریں جبکہ ستمبر کاشتہ کماد میں یوریا تین اقساط (نومبر، مارچ اور اپریل) میں ڈالیں۔

4۔ موسمی حالات اور فصل کی ضرورت کے مطابق آبپاشی کا عمل جاری رکھیں۔

گندم:۔

1۔ بارانی علاقوں میں بارش کی صورت میں گہرا ہل چلا کر وتر محفوظ رکھنے کے لیے مناسب اقدامات کئے جائیں۔

2۔ زمین کی تیاری کریں اور اگر گلی سڑی کھاد میسر ہو تو وہ زمین میں ملا دیں۔

3۔ بارانی علاقوں کے لیے محکمہ زراعت کی تجویز کردہ/منظور شدہ اقسام مثلاً دھرابی 2011، فتح جنگ 2016 اور بارانی 2017 وغیرہ کاشت کریں۔ اسی طرح آبپاشی علاقوں کے لیے مخصوص منظور کردہ اقسام کا انتخاب مقامی زراعت کے مشورے سے کریں۔

4۔ بجائی کا عمل 15 نومبر تک مکمل کرنے کی بھرپور کوشش کی جائے۔ بروقت کاشت گندم کی زیادہ پیداوار کے لیے کلیدی عنصر ہے۔

5۔ 85 فیصد اگاؤ کی صلاحیت والا 50 کلو گرام بیج فی ایکڑ استعمال کریں۔ کم اگاؤ کی صورت میں شرح بیج میں مناسب اضافی کریں۔

6۔ کاشت سے پہلے بیج کو پھپھوندی کش زہر لگالیں تاکہ فصل بیماری سے محفوظ رہے۔

Pakistan Space & Upper Atmosphere Research Commission
SPARC, Main Islamabad Highway 44000, Islamabad, Pakistan
Tel.: (+92) 51 4611792 Fax: (+92) 51 4611796
E-mail: sgs@suparco.net.pk
http://www.suparco.gov.pk