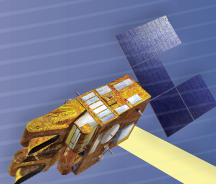




MINISTRY OF NATIONAL
FOOD SECURITY AND
RESEARCH



SUPARCO



PAK-SCMS

BULLETIN

PAKISTAN: SATELLITE BASED CROP MONITORING SYSTEM

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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 crops 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.

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.

CROP SITUATION: SEPTEMBER 2024 Summary

By the end of September 2024, decreasing values of Satellite based Normalized Difference Vegetation Index (NDVI) indicate that Kharif crops have entered into maturity stage and harvest season is approaching. During this month, below-normal rains were observed in most parts of the country. The daytime temperature remained mostly above normal in most parts of the country, especially Punjab, Khyber Pakhtunkhwa, Gilgit Baltistan, Azad Kashmir, upper & western parts of Sindh and Balochistan. However, normal temperatures were observed in South Sindh and some scattered locations of Balochistan.

Cotton crop picking was at its peak during the month of September. During current season, significant decrease in Cotton sowing area was observed in Punjab and Sindh. Overall, Cotton crop condition was generally satisfactory.

Sugarcane crop growth was generally satisfactory and insect pest situation

was under control. This season, decrease in Sugarcane crop area was observed.

As compared to last year, Rice sown area has increased. Harvesting of early sown coarse rice has been started in most parts of the country. In the Kalar tract of Punjab, Basmati rice has reached its maturity stage.

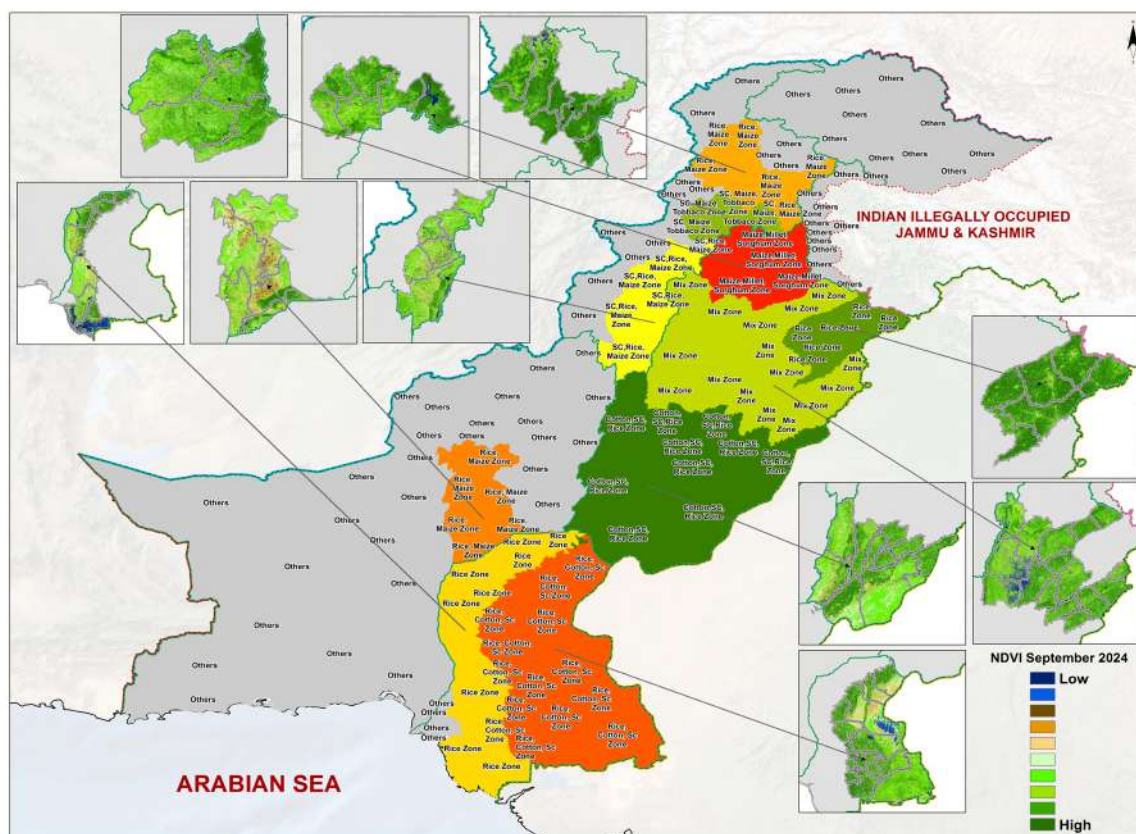
As per report of Indus River System Authority (IRSA) for September 2024, the irrigation water supply was 10.76 MAF against the last year's supply of 13.97 MAF, decreased by 22.97 percent.

As per report of National Fertilizer Development Centre (NFDC), total availability of Urea in August 2024 was 972 thousand tons whereas total availability of DAP was 321 thousand tons. During August 2024, offtake of Nitrogen, Phosphate and Potash decreased by 32.1, 72.7 and 57.3 percent respectively, as compared to the same period of last year.

CROPS SITUATION

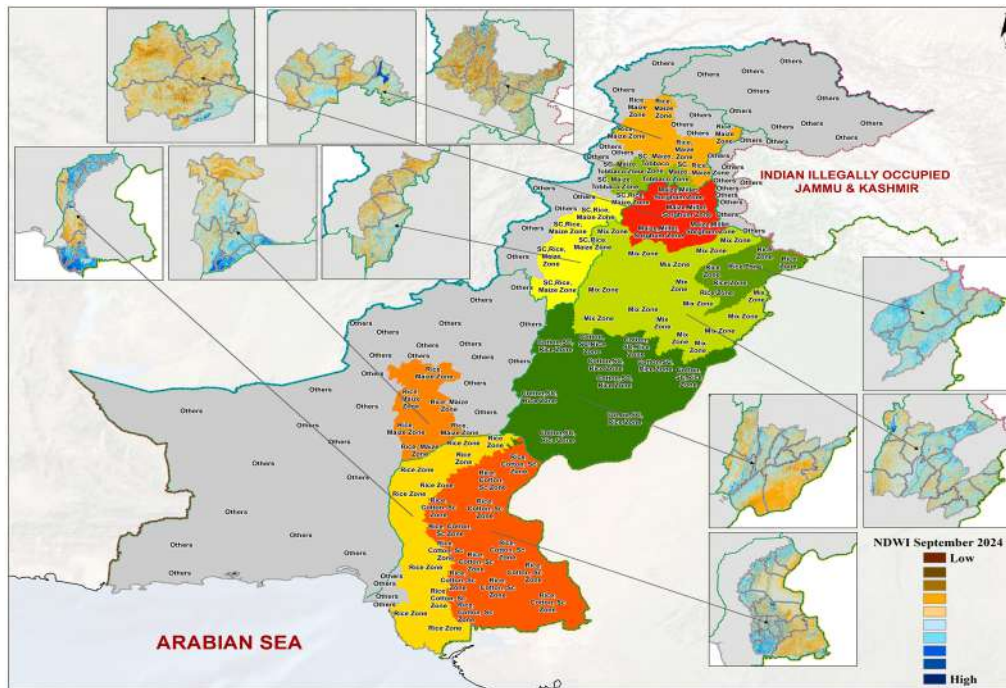
Satellite based Vegetation Index Analytics

As per analysis of below map for September 2024, kharif crops are at harvesting stage in different areas of Punjab, Sindh and Balochistan. While in KP, the crop growth is at vegetative stage.

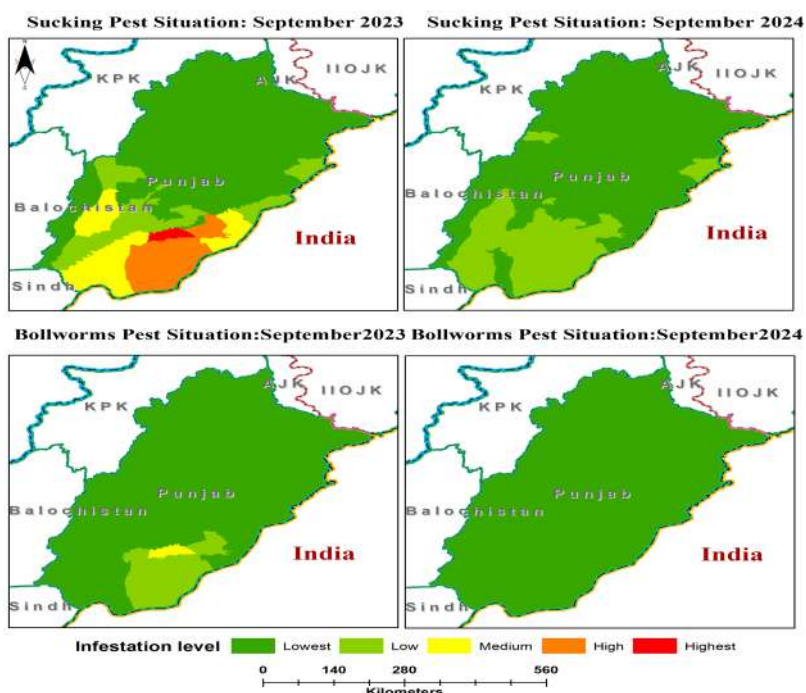


Satellite based Water Index Analytics

Analysis of below given NDWI map shows that crops did not face any major crop irrigation deficit during September.



By the end of September, cotton crop was generally satisfactory. During current year, significant decrease in cotton sowing area was observed in Punjab and Sindh. This decrease may be due to choice of alternative crops by farmers especially sesamum. As per report of Pakistan Cotton Ginning Association (PCGA) on 30th September 2024, Cotton arrivals in ginning factories of Pakistan were 2039.963 thousand bales as compared to 5025.282 thousand bales during same period of last year showing decrease of 59.4 percent. Sucking insect and pest situation remained under control during this month. Tehsil-wise percentage of hot spots of pests are as under;

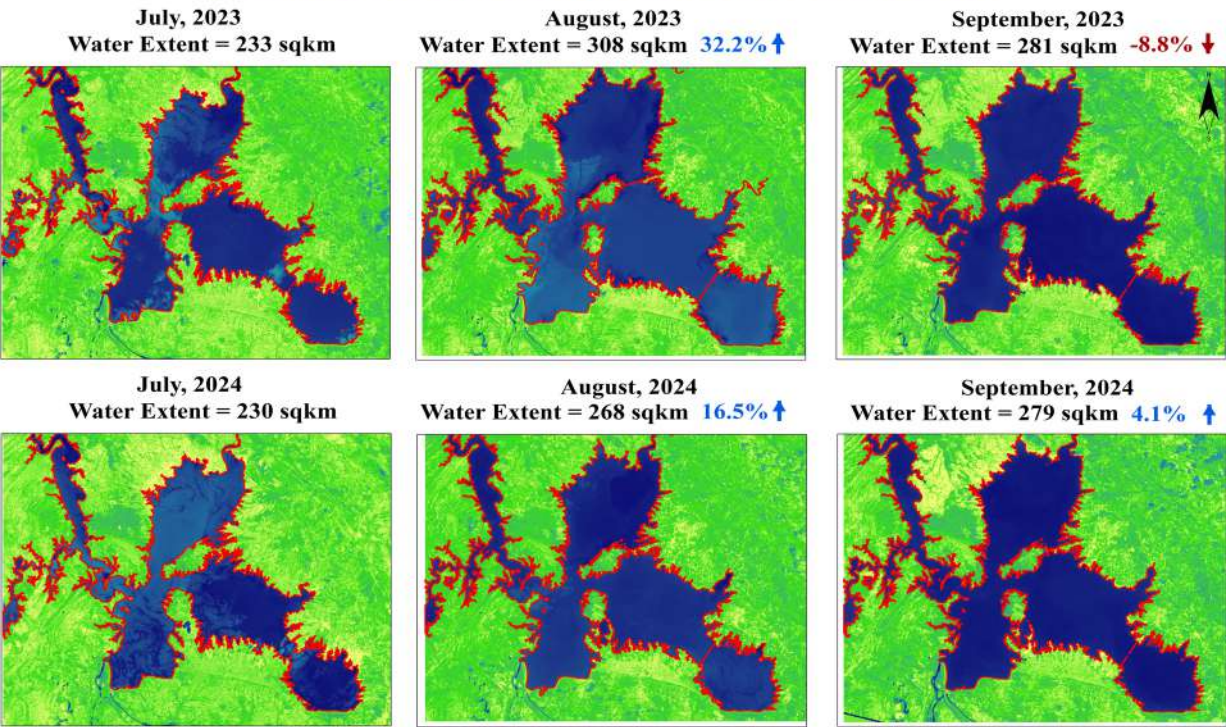


Sugarcane crop growth was generally satisfactory in the country during September 2024. A decrease in Sugarcane crop area was observed during this season. Rice sown area has increased this year compared to last year. Very early transplanted coarse rice was harvested, while crop in basmati growing areas was at vegetative stage in September.

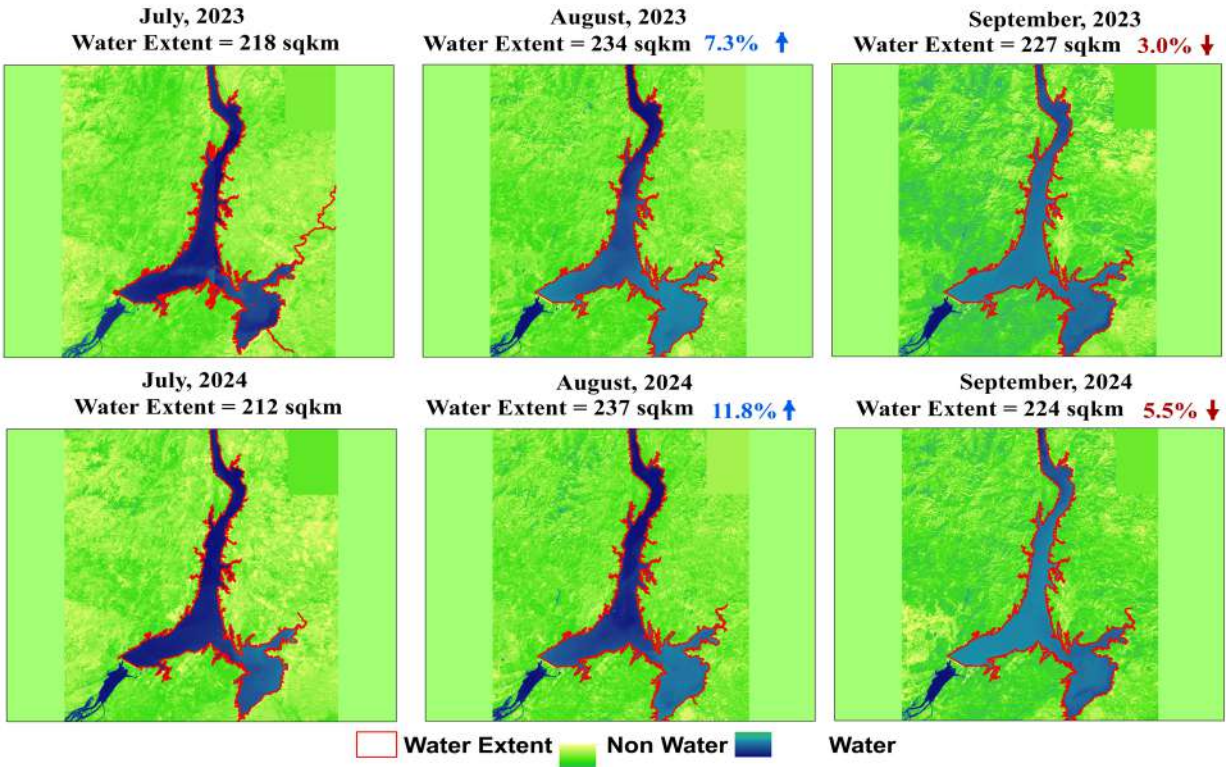
Reservoir Water Extent Situation for Kharif (2023-24) & (2024-2025)

As per analysis of high resolution Satellite images, by the end of September 2024, water extent for Tarbela and Mangla reservoirs was 224 and 279 sq.km, respectively. During September 2023, water extent for Tarbela and Mangla reservoirs was 227 and 281 sq.km, respectively. This shows that there is a decreasing trend in Tarbela reservoir and increasing trend in Mangla reservoir during the month of September 2024.

Satellite Extracted Mangla Dam Water Extent Level



Satellite Extracted Tarbela Dam Water Extent Level

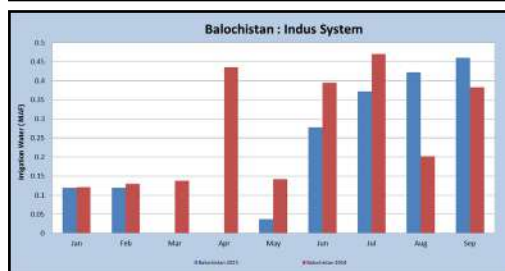
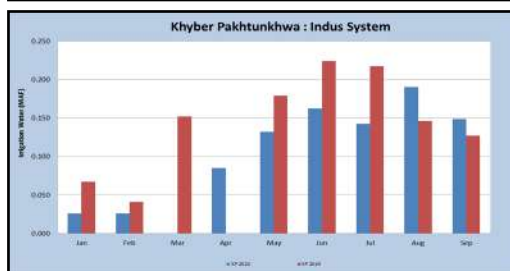
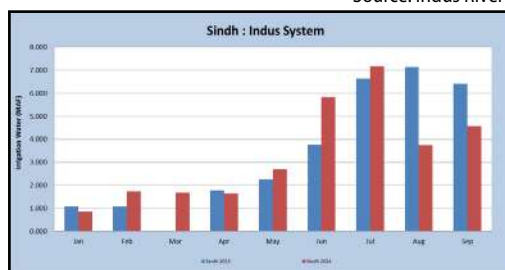
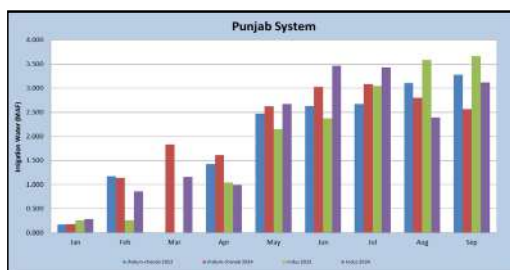


Irrigation Water Supply: Sep, 2024

The irrigation water supply during September 2024 was 10.76MAF against the last year's supply of 13.97MAF, decreased by 3.21MAF (22.97 percent). During September 2024, as compared to the same period of last year, the supply in Punjab was 5.68MAF (decreased by 18.09 percent), while in Sindh was 4.57MAF (decreased by 28.88 percent), in Khyber Pakhtunkhwa was 0.13 MAF (decreased by 14.67 percent) and Balochistan received water supply of 0.38MAF (decreased by 16.81 percent).

Kharif 2024-25	Month	Year	Punjab			Sindh	Khyber Pakhtunkhwa	Balochistan	Total
			Jhelum-Chenab	Indus	Total				
			Million Acre Feet						
	April	2024	1.61	0.75	2.36	1.64	0.44	0.00	4.35
		2023	1.42	1.04	2.46	1.78	0.09	0.00	4.32
		Change	0.19	-0.29	-0.10	-0.13	0.35	0.00	0.02
		% change	13.17	-28.04	-3.99	-7.48	411.63	0.00	0.53
	May	2024	2.63	2.67	5.29	2.70	0.18	0.14	8.09
		2023	2.47	2.15	4.26	2.25	0.13	0.04	7.05
		Change	0.15	0.51	0.67	0.45	0.05	0.10	1.15
% change		6.24	23.94	14.48	19.74	35.79	282.89	16.26	
June	2024	3.03	3.46	6.49	5.84	0.22	0.39	13.74	
	2023	2.63	2.37	5.00	3.76	0.16	0.28	9.20	
	Change	0.39	1.09	1.49	2.08	0.06	0.12	4.54	
	% change	14.98	46.27	29.79	55.27	37.80	42.14	49.34	
July	2024	3.09	3.43	6.51	7.17	0.22	0.47	14.37	
	2023	2.67	3.04	5.71	6.64	0.14	0.37	12.86	
	Change	0.42	0.39	0.80	0.53	0.08	0.10	1.51	
	% change	15.56	12.78	14.08	7.97	53.00	26.70	11.72	
August	2024	2.80	2.39	5.19	3.74	0.15	0.20	9.28	
	2023	3.11	3.58	6.69	7.15	0.19	0.42	14.44	
	Change	-0.31	-1.19	-1.50	-3.41	-0.04	-0.22	-5.17	
	% change	-9.92	-33.22	-22.38	-47.70	-23.23	-52.07	-35.78	
Sep	2024	2.57	3.12	5.68	4.57	0.13	0.38	10.76	
	2023	3.28	3.66	6.94	6.42	0.15	0.46	13.97	
	Change	-0.71	-0.55	-1.26	-1.85	-0.02	-0.08	-3.21	
	%change	-21.61	-14.94	-18.09	-28.88	-14.67	-16.81	-22.97	

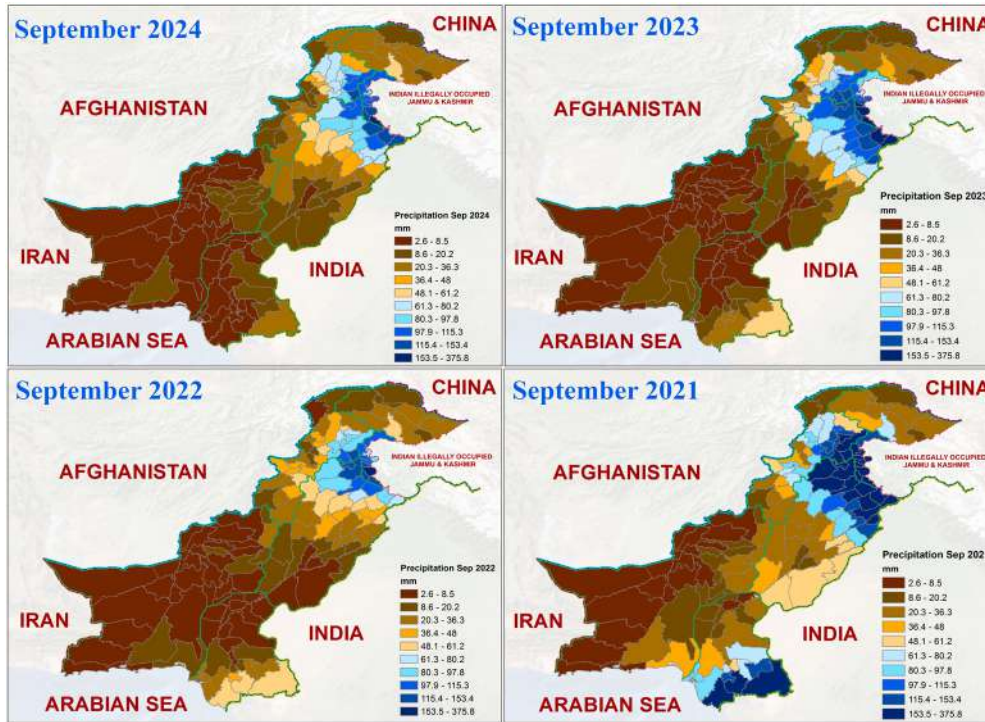
Source: Indus River System Authority (IRSA)



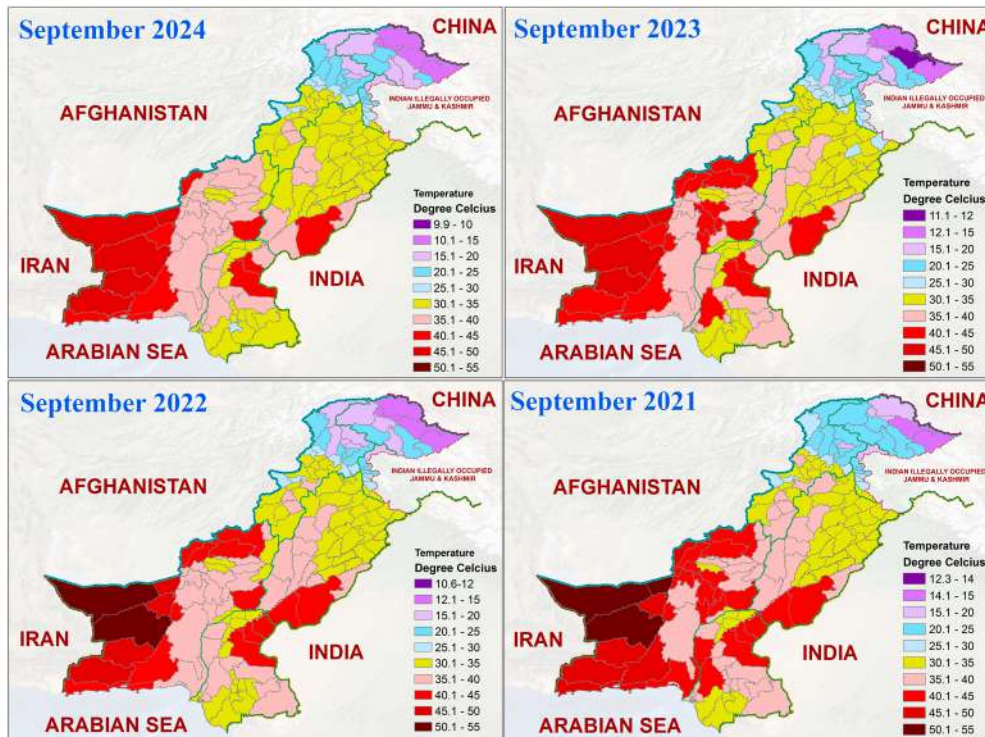
Source: Indus River System Authority (IRSA)

Monthly Rainfall & Temperature September 2021-24

During September 2024, spatial distribution of rainfall was most likely the same as compared to September 2023. During September 2024 the concentrated areas of rainfall were Northern KP, Upper Punjab and AJK.



Monthly land surface temperature (referred to as skin temperature) was computed from the daily satellite remote sensing thermal imageries. This parameter links crops growing conditions with availability of sunlight for photosynthesis, growing degree days and irrigation water requirements for crop evapotranspiration. Generally, estimated temperatures were similar in agricultural areas across Pakistan for 2024 as compared to 2021-2023. Overall, temperatures remained higher in Balochistan, Southern Punjab and Interior Sindh during September 2024 as compared to same month of last year.



Fertilizer Offtake

As per report of NFDC, the month of August 2024 started with opening inventory of 399 thousand tons of Urea. During August 2024, domestic Urea production was 572 thousand tons with total availability of 972 thousand tons. Urea offtake during August 2024 remained 559 thousand tons leaving behind closing balance of 405 thousand tons.

The opening inventory of DAP for August 2024 was 103 thousand tons while, domestic production and import were 76 and 142 thousand tons respectively. So the total availability of DAP was 321 thousand tons. DAP offtake during August 2024 was 89 thousand tons leaving behind closing balance of 232 thousand tons.

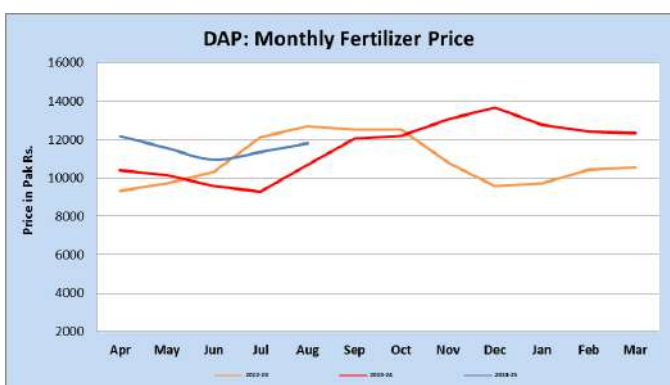
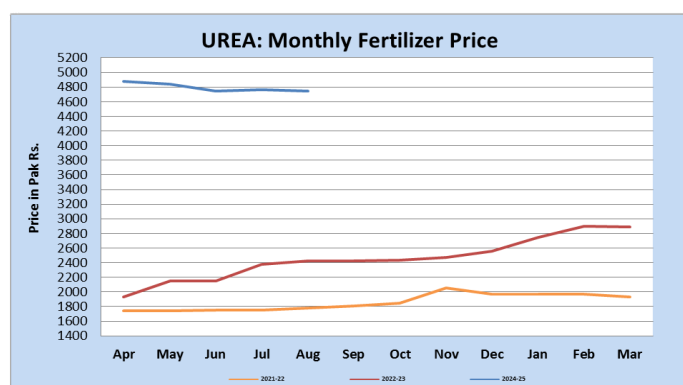
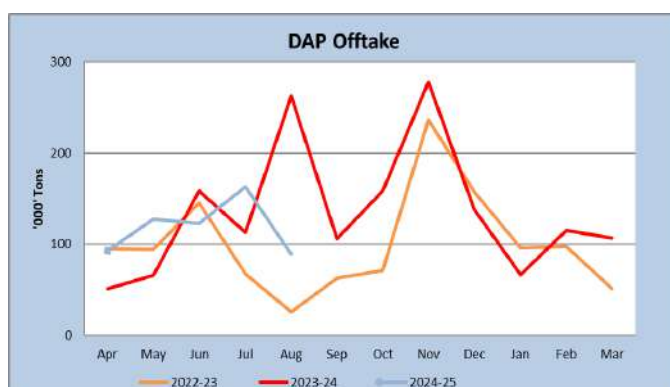
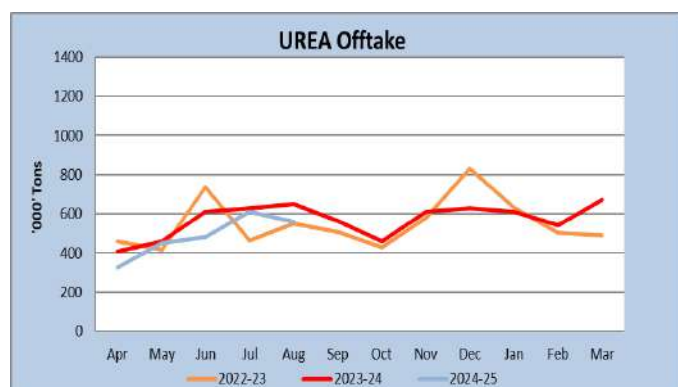
During August 2024, offtake of Nitrogen, Phosphate and Potash decreased by 32.1, 72.7 and 57.3 percent respectively as compared to same period of last year.

Product	Opening Inventory	Domestic Production	Imports	Total Availability	Offtake	Write On/Off	Closing Balance
000 Tons							
Urea	399	572	0	972	559	-6	406
DAP	103	76	142	321	89	0	232

Month	Fertilizer Offtake Kharif 2024-25				Fertilizer Offtake Kharif 2023-24				% Change			
	Nitrogen	Phosphate	Potash	Total	Nitrogen	Phosphate	Potash	Total	Nitrogen	Phosphate	Potash	Total
	(000 Tons)											
Apr	188.3	53.8	1.6	243.7	224.4	33.7	1.9	260.0	-16.1	59.8	-17.1	-6.3
May	212.8	29.0	3.0	244.7	261.8	48.2	1.7	311.7	-18.7	-40.0	69.4	-21.5
June	287.3	78.0	1.6	366.9	357.3	101.4	0.8	459.6	-19.6	-23.0	92.9	-20.2
July	349.5	97.3	1.9	448.7	343.3	65.0	233.3	410.7	1.8	49.6	-99.2	9.3
Aug	291	50.9	3.3	346.0	429.6	186.3	7.8	623.7	-32.1	-72.7	-57.3	-44.5
Total	1329.6	308.9	11.4	1649.9	1616.4	434.6	245.6	2065.7	-84.7	-26.3	-11.3	-83.2

Source: MRR.07/2023 NFDC

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



Source: 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 سوئی 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 اس 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 پچھیتی اقسام پر بیماریوں کے حملہ کی صورت میں مقامی محکمہ زراعت کے مشورے سے مناسب زہروں کا استعمال جاری رکھیں۔
- 2- باسیتی اقسام میں دانہ بھرتے وقت پانی کی کمی نہ آنے دیں نیز کٹائی سے 15 دن پہلے آخری پانی لگادیں۔
- 3- دھان کی کٹائی کے لیے ایسی کمبائن ہارویسٹر استعمال کریں۔ جس میں دھان کی کٹائی کے لیے ایڈجسٹ ہو۔

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

کماؤ:-

- 1- ستمبر کاشت جلد از جلد مکمل کریں۔ تاخیر سے کاشت پیداوار میں کمی کا باعث بنتی ہے۔
- 2- درمیانی زرخیز زمین کے لیے سواتین 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 کماؤ 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 گہراہل 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 دھراہلی 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۔



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