

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 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.

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CROP SITUATION: NOVEMBER 2021

Summary

By the end of November, lower values of Normalized Difference Vegetation Index (NDVI) show the transitional stage of kharif to rabi season. Generally, normal to slightly above normal temperatures were observed in most agricultural plains of the country. Below normal rainfall is reported all over the country. Dry weather is reported in all of the agricultural plains of the country.

Wheat crop sowing is in progress. Federal Committee on Agriculture (FCA) in its meeting held on 07th October, 2021 fixed wheat production target of 28.885 Million tons from an area of 9.210 million hectares to meet National food requirement. Support price, favorable weather conditions and timely availability of quality inputs would be vital to achieve this increased production target. Anticipated short supplies of fertilizers and irrigation water / less rains during Rabi 2021-22 will be major limiting factors to achieve desired results. Relevant departments are making their best possible efforts to enhance country wheat production for ensuring national food security.

Cotton crop was at terminal stage at the end of November. During current kharif season, cotton crop showed better crop health than last year. As per report of Pakistan Cotton Ginning Association (PCGA) on 1st December 2021, cotton arrivals in ginning factories of Pakistan were 7168.118 thousand bales as compared to 4648.092 thousand bales during same period of last year showing an increase of 54.22 percent. In Punjab and Sindh, the cotton arrivals during the reported period were higher by 39.65 and 73.28 percent respectively, as compared to the same period of last year.

In local market, average ex-gin cotton price during November 2021 was higher by about 42.3 percent compared to November 2020. Approximate average ex-gin price during November 2021 was Rs. 17703 per 40 kg against Rs. 10211 during November 2020 showing an increase of Rs. 7492 per 40 kg.

Sugarcane crop is also at maturity/harvesting stage. Most of the sugarmills have started operation from mid of

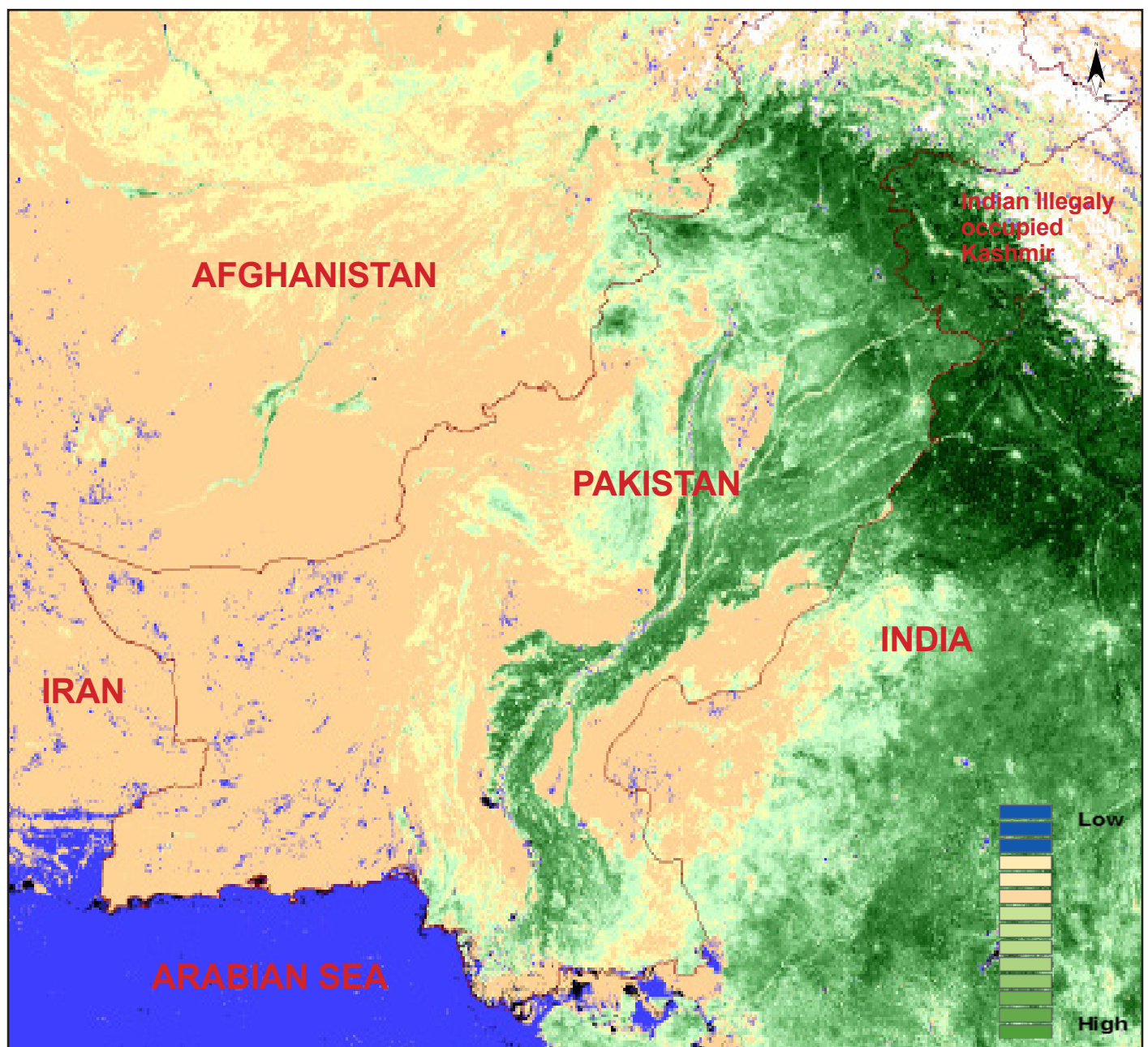
CROPS SITUATION

November resulting in stability of sugar prices. Government of Punjab notified sugarcane support price at Rs. 225.0 per 40 kg whereas government of Sindh set sugarcane support price at Rs. 250.0 per 40 kg

Rice harvesting, particularly of the basmati, got momentum during November. Rice was the main promising crop for this kharif season. Rice area was significantly increased this year.

As per report of Indus River System Authority (IRSA) for November 2021, the irrigation water supply was 5.50 MAF against the last year's supply of 6.32 MAF, decreased by 12.90 percent from last year. Punjab, Sindh and Balochistan provinces have less supplies of irrigation water than last year. Irrigation water supplies were better in Khyber Pakhtunkhwa than last year.

As per report of National Fertilizer Development Centre (NFDC), total availability of Urea in October 2021 was 655 thousand tons whereas total availability of DAP was 702 thousand tons. During October 2021, off take of Nitrogen, Phosphate and potash was increased by 39.3, 59.5 and 37.3 percent respectively as compared to the same period of last year.



Normalized Difference Vegetation Index (NDVI) 30th November, 2021

Rabi 2021-22

Wheat Crop 2021-22

Wheat crop sowing is in progress. Sowing of wheat generally started in October in barani areas and lower Sindh that is gradually progress towards upper parts of country and will continue till end of December. This year government has set a higher wheat production target to meet country wheat requirements. Federal Committee on Agriculture in its 17th Meeting on 07th October, 2021 fixed the wheat production targets in consultation with provinces. Province wise wheat targets are:

FCA Targets 2021-22			
Province	Area (000 ha)	Production (000 Tons)	Yield (kg/ha)
Punjab	6,560	21,945	3,345.3
Sindh	1,200	4,200	3,500.0
Khyber Pakhtunkhwa	900	1,525	1,694.4
Balochistan	550	1,215	2,209.1
Total	9,210	28,885	3136.3

Source: FCA

All stakeholders are making efforts to enhance wheat production through provision of quality inputs, subsidized inputs rate and mass awareness campaigns.

Anticipated inputs availability for Rabi season 2021-22

Anticipated inputs availability for rabi season 2021-22 is given below;

Wheat Support Price

Wheat support price is a key driving factor to increase area of wheat crop. Last year federal government timely announced wheat support of Rs .1800 per 40 kg that yielded good result to achieve high wheat production. Currently wheat support is under discussion and will be announced during the month of November to motivate farming community to grow more wheat for national food security.

Weather

According to Pakistan Meteorological Department (PMD), forecast below normal rains are expected in most of major agricultural plains from October- December 2021. Due to deficit rains, rabi crop may face water stress particularly in rain-fed areas. Above normal minimum temperature is anticipated while maximum temperature may remain below normal particularly over Khayber Pkhtunkhwa and Balochistan.

Anticipated Water Availability

Water availability in reservoirs is not much encouraging as compared to last year. IRSA has estimated a shortfall of 26.6 percent as compared to average system usages. This shortfall is 27.6 and 27.7 percent in Punjab and Sindh respectively. This is a major limiting factor to achieve wheat targets particularly in areas with brackish underground water. During rabi 2021-22 provinces are allocated 26.91 MAF of water. Anticipated/tentative province wise share is given below:

Anticipated Water Availability Position for Rabi 2021-22				
Province	Average System Usage (MAF)	Estimated Water Availability (MAF)	Excess / Less than Average System Usage	
Punjab	19.846	14.361	-5.49	27.6
Sindh	14.968	10.827	-4.14	27.7
Khyber Pakhtunkhwa	0.701	0.701	0.00	0.0
Balochistan	1.171	1.022	-0.15	12.7
Total	36.686	26.911	-9.78	26.6

Source: IRSA

Seed Situation

According to Federal Seed Certification and Registration Department, during rabi 2021-22, wheat seed availability is expected to 637.6 (000 tons) sharing 59% of total wheat seed requirement. Good quality seed can only provide good production. Relevant departments are making efforts to provide improved quality seeds to farming community. This year, quality seed provision is increased from 48% to 59% of the total country requirement. Province wise quality seed availability against the requirement in terms of percentage is given below:

Position of Wheat Seed		
Province	Percentage of Total Seed Requirement 2020	Percentage of Total Seed Requirement 2021
Punjab	42	52
Sindh	5	4
Khyber Pakhtunkhwa	1	1
Balochistan	0	1
Total	48	59

Source: FCA on 7th October 2021

This increase in quality seed provision will help for good crop harvest and can tolerate better adverse effects of diseases particularly the leaf rust.

Fertilizer Situation

As per anticipation of NFDC, total urea availability will be 3262 m tons against the total offtake of 3195 million tons. Similarly, DAP availability will be 1031 million tons against the offtake of 1003 million tons. Due to an end-to-end availability and offtake of Urea and DAP, prices can be higher than notified due to hoarding and advance buying by farming community. This high price and unavailability of fertilizers can create restless in farming community that can hinder crop husbandry measures to affect wheat production. A vigilant dynamic action plan is required to ensure fertilizers availability at the notified prices.

Urea consumption is estimated at 3195 (000 tons) against 3225 (000 tons) showing a decrease of 0.9 percent over last rabi 2020-21. DAP offtake is expected to decrease by 9.1 percent over rabi 202-21. About 10 % decrease in DAP offtake is expected due to price escalation

Estimated Fertilizer Offtake during Rabi 2021-22 (Oct-Mar)				
Province	Urea	DAP	SOP / MOP	Total
Punjab	2,157	735	36.7	2,928
Sindh	792	207	10.3	1,009
Khyber Pakhtunkhwa	147	35	1.8	184
Balochistan	99	26	1.3	126
Total	3,195	1,003	50	4,248
Rabi 2021-22	3,225	1,104	47	4,376
Percent Change over Rabi 2020-21	-0.9	-9.1	6.4	-2.9

Source: NFDC

Kharif Crops 2021-22

Cotton Crop 2021-22

Cotton crop was at terminal stage at the end of November. During current kharif season, cotton crop showed better crop health than last year. As per report of Pakistan Cotton Ginning Association (PCGA) on 1st December 2021, cotton arrivals in ginning factories of Pakistan were 7168.118 thousand bales as compared to 4648.092 thousand bales during same period of last year showing an increase of 54.22 percent. In Punjab and Sindh, the cotton arrivals during the reported period were higher by 39.65 and 73.28 percent respectively, as compared to the same period of last year. The details of cotton arrivals are given below:

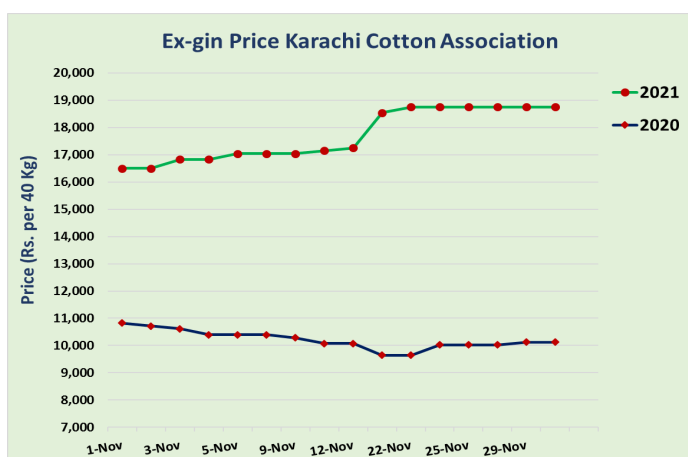
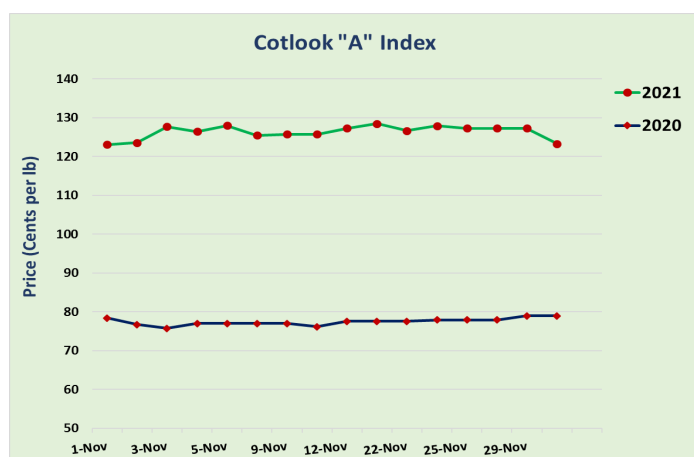
Province	2021	2020	Difference	
	(000 bales)		Percent	
Punjab	3679.016	2634.487	1044.529	39.65
Sindh	3489.102	2013.605	1475.497	73.28
Total	7168.118	4648.092	2520.026	54.22

Source: PCGA

Market Prices for Cotton during October 2021

In the international market, average cotton price during November 2021 was 126.33 cents per lb as compared to average price of 77.47 cents per lb during November 2020, showing an increase of 48.86 cents per lb (up by 38.7 percent).

In local market, average ex-gin cotton price during November 2021 was higher by about 42.3 percent compared to November 2020. Approximate average ex-gin price during November 2021 was Rs. 17703 per 40 kg against Rs. 10211 during November 2020 showing an increase of Rs. 7492 per 40 kg.



Source: PCCC

Sugarcane Crop 2021-22

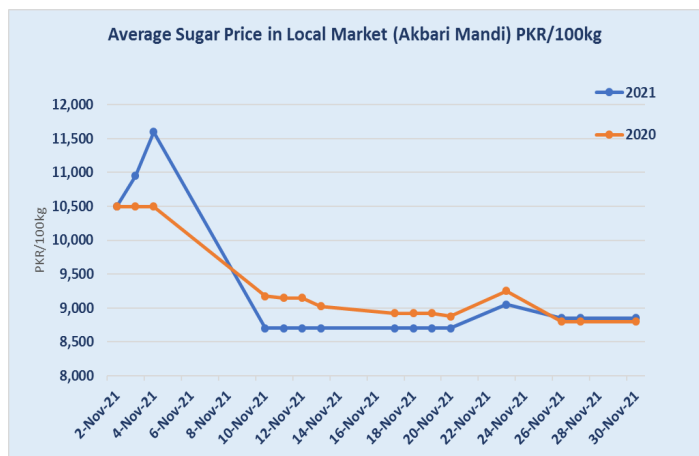
Sugarcane crop is also at maturity/harvesting stage. Sugarmills have started their operations from mid of November that resulted in stability of sugar prices. Government of Punjab notified sugarcane support price at rs. 225.0 per 40 kg whereas Govt of Sindh set sugarcane support price at rs. 250.0 per 40 kg

Sugar price in the international market (White Sugar Price Index) during November 2021 was approximately 26.48 percent higher compared to November 2020. Average sugar price during November 2021 was 509.49 USD per ton against the average sugar price of 402.79 USD per ton during November 2020, showing average increase of 106.7 USD per ton.

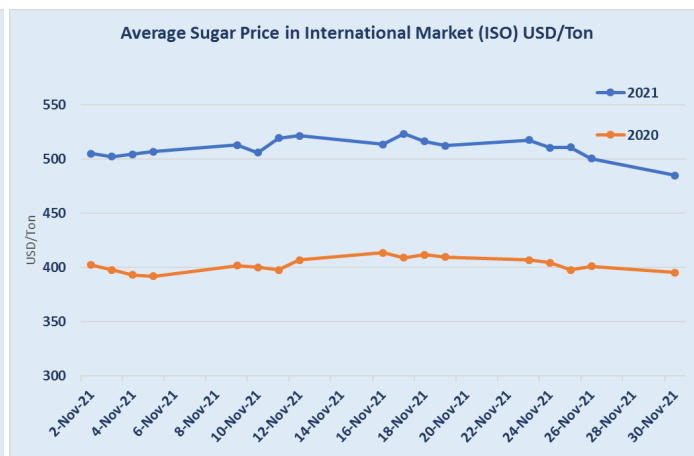
Sugar prices in the local market (Akbari Mandi) decreased during November 2021 as compared to November 2020. Average sugar price during November 2021 was around Rs.9213.04 per 100 kg as against the average sugar price of Rs. 9318.06 per 100 kg showing an decrease of around Rs. 105.01 per 100 kg.

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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

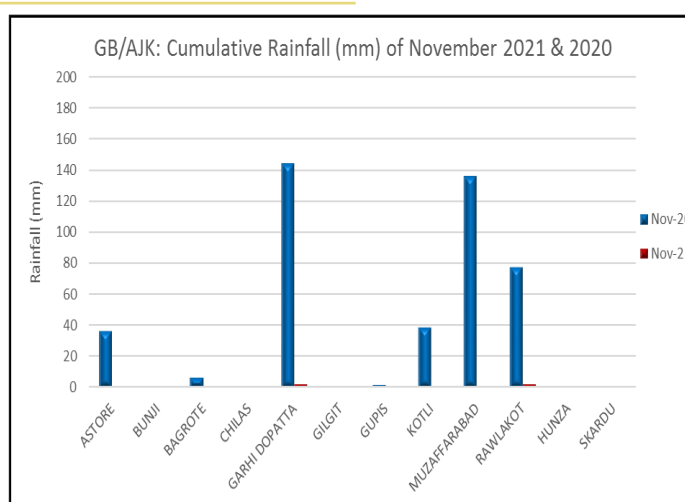
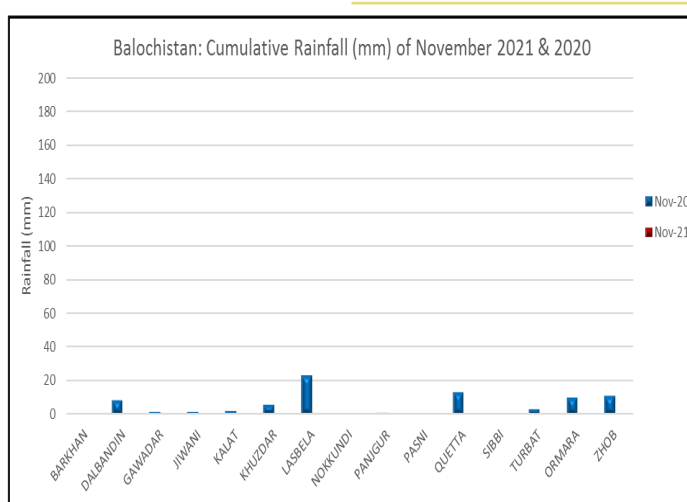
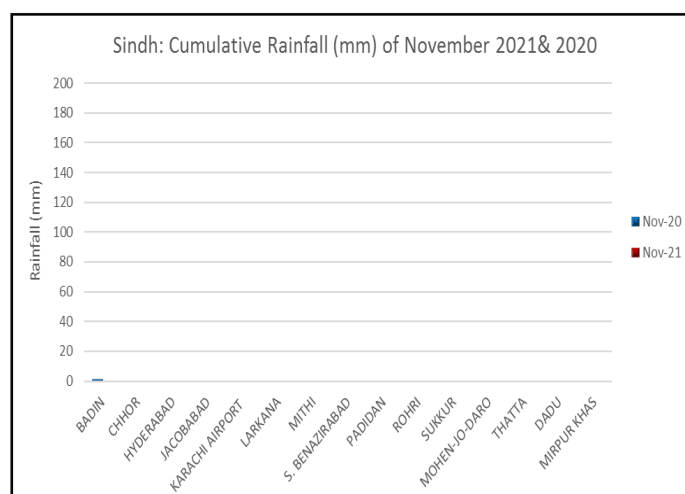
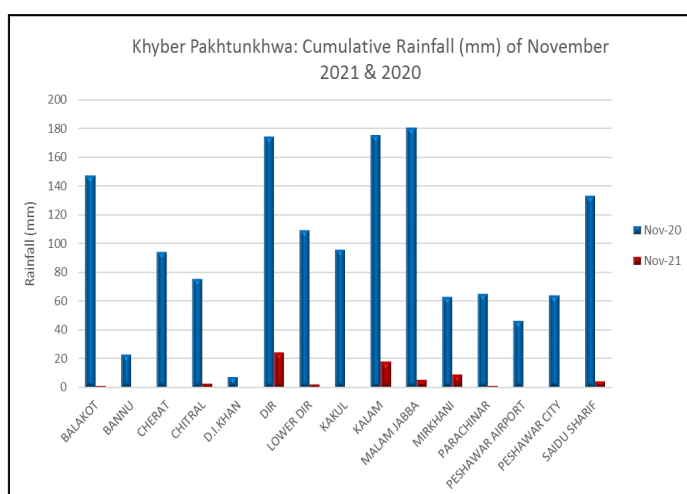
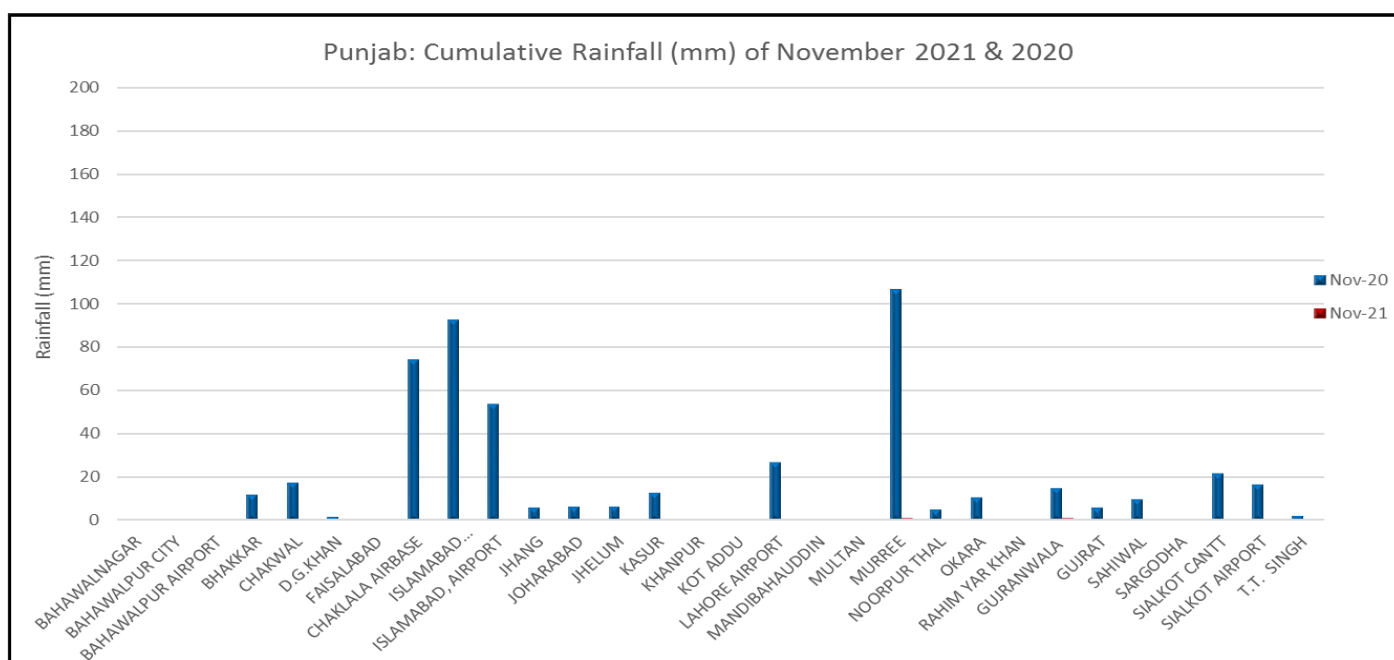


Source: ISO

Rice Crop 2021-22

Rice harvesting, particularly of the basmati, got momentum during November. Rice was the main promising crop for this Kharif season. Rice area was significantly increased this year.

Monthly Rainfall (mm): November (2020 & 2021)



Source: PMD

Maximum Temperature: November, 2021

The ranges of maximum temperature (°C) during November 2021 were as follows:



Source: PMD

Minimum Temperature: November, 2021

The ranges of minimum temperature (°C) during November 2021 were as follows:



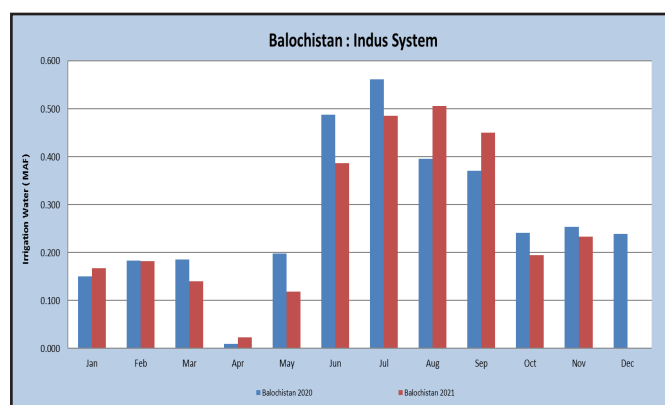
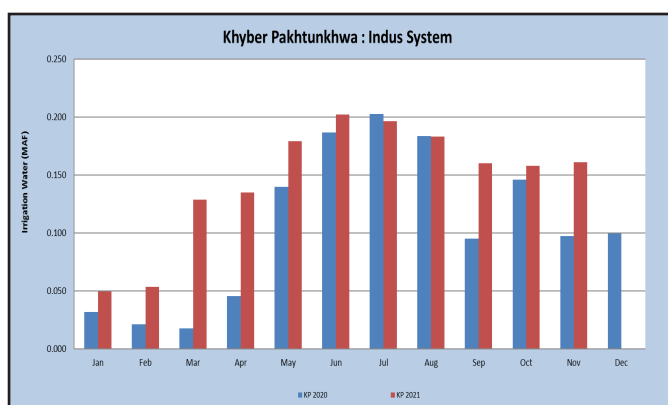
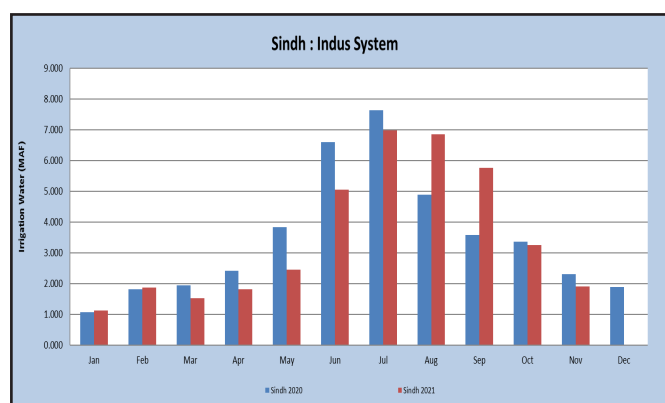
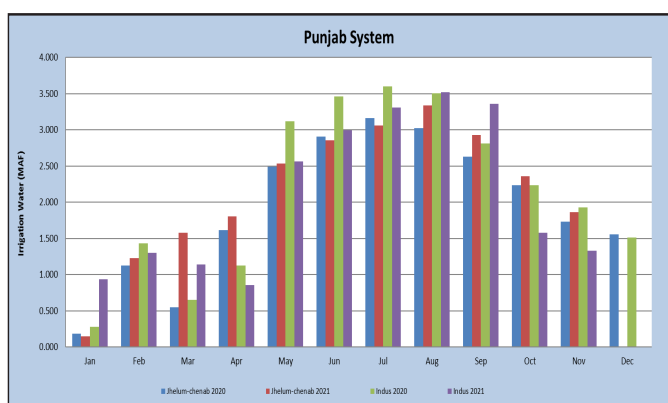
Source: PMD

Irrigation Water Supply: November, 2021

The irrigation water supply during November 2021 was 5.50 MAF against the last year's supply of 6.32 MAF, lower by 12.90 MAF (12.90 percent). During November 2021, as compared to the same time period of last year, the supply in Punjab was 3.20 MAF (lower by 12.64 percent), Sindh was 1.91 MAF (lower by 17.25 percent), Khyber Pakhtunkhwa was 0.16 MAF (higher by 65.31 percent) while Balochistan received water supply of 0.23 MAF (lower by 7.81 percent).

Rabi 2021-22	Month	Year	Punjab			Sindh	Khyber Pakhtunkhwa	Balochistan	Total
			Jhelum-Chenab	Indus	Total				
			Million Acre Feet						
	October	2021	2.36	1.58	3.93	3.25	0.16	0.20	7.54
		2020	2.23	2.24	4.47	3.37	0.15	0.24	8.23
		Change	0.12	-0.66	-0.54	-0.12	0.01	-0.05	-0.69
% change		5.57	-29.60	-12.03	-3.46	8.01	-19.08	-8.38	
Nov	2021	1.86	1.33	3.20	1.91	0.16	0.23	5.50	
	2020	1.73	1.93	3.66	2.31	0.10	0.25	6.32	
	Change	0.13	-0.60	-0.46	-0.40	0.06	-0.02	-0.82	
	% change	7.68	-30.86	-12.64	-17.25	65.31	-7.81	-12.90	

Source: Indus River System Authority (IRSA)



Source: Indus River System Authority (IRSA)

Fertilizer Offtake

As per report of NFDC, the month of October 2021 started with opening inventory of 116 thousand tons of Urea. During October 2021, domestic Urea production was 539 thousand tons with total availability of 655 thousand tons. Urea offtake during October remained 514 thousand tons leaving behind closing balance of 139 thousand tons.

The opening inventory of DAP for October 2021 was 353 thousand tons. During October 2021 domestic production of DAP was 75 thousand tons. The total availability of DAP was 702 thousand tons which also includes 274 thousand tons of imported supplies. DAP offtake during October 2021 was 342 thousand tons leaving behind closing balance of 360 thousand tons.

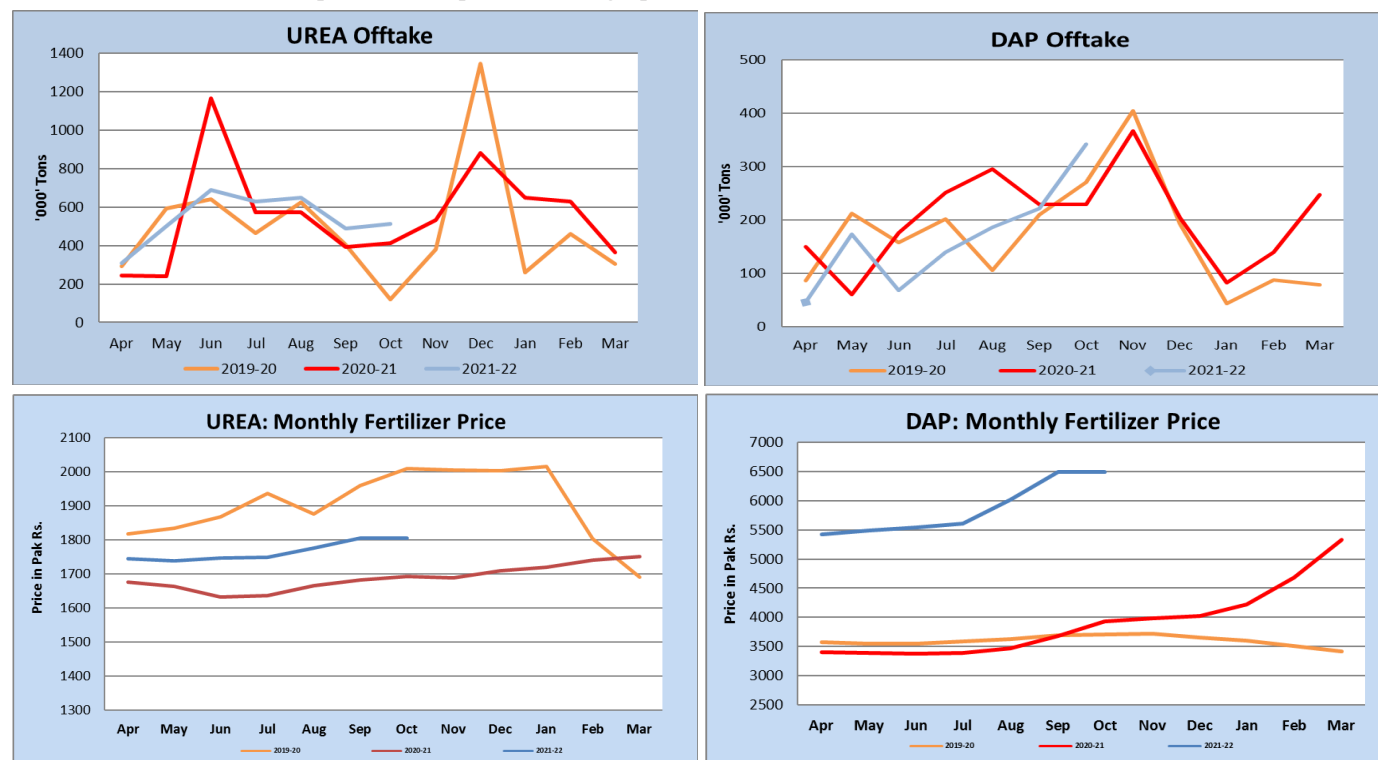
During October 2021, offtake of Nitrogen, Phosphate and Potash increased by 39.3, 59.5 and 37.3, respectively as compared to same period of last year.

Product	Opening Inventory	Domestic Production	Imports	Total Availability	Offtake	Write On/Off	Closing Balance
	000 Tons						
Urea	116	539	0	655	514	-2	139
DAP	353	75	274	702	342	0	360

Month	Fertilizer Offtake Rabi 2021-22				Fertilizer Offtake Rabi 2020-21				% Change			
	Nitrogen	Phosphate	Potash	Total	Nitrogen	Phosphate	Potash	Total	Nitrogen	Phosphate	Potash	Total
	(000 Tons)											
Oct	356.0	196.9	10.1	563.0	255.6	123.5	7.3	386.4	39.3	59.5	37.3	45.7
Total	356.0	196.9	10.1	563.0	255.6	123.5	7.3	386.4	39.3	59.5	37.3	45.7

Source: MRR.11/2021 NFDC

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



Source: MRR.11/2021 NFDC

زرعی سفارشات

ماہ دسمبر

گندم:-

- 1- گندم کی بہتر پیداوار کیلئے 15 نومبر تک کاشت بہترین وقت ہے۔ اس کے بعد روزانہ تقریباً 15 تا 20 کلوگرام فی ایکڑ کے حساب سے پیداوار میں کمی آنا شروع ہو جاتی ہے۔ اس لیے زمیندار حضرات جلد از جلد گندم کی کاشت کو یقینی بنائیں۔ حتیٰ کہ گندم کی کچھیتی کاشت 15 دسمبر سے پہلے ہر صورت مکمل کر لیں۔ اور غیر معمولی تاخیر سے بچنے کیلئے جہاں ضروری ہو خشک بوائی کریں۔
- 2- گندم کی کاشت میں تاخیر ہونے کی صورت میں کچھیتی کاشت کے لیے موزوں اقسام کا انتخاب کریں۔
- 3- گندم کو مختلف بیماریوں سے بچاؤ کیلئے بیج کو بوائی سے پہلے پھپھوندی کش زہر لگائیں۔
- 4- گندم کو کالے تیلے سے بچانے اور خوردنی تیل کی پیداوار میں اضافہ کیلئے کینولہ/سرسوں کی کم از کم ایک قطارا ایکڑ کی ہر سائیڈ پر ضرور لگائیں۔

- 5- دھان کے بعد کاشتہ فصل کو 30 تا 40 دن بعد پہلا پانی لگائیں جبکہ دیگر فصلات کے بعد کاشتہ گندم کو 20 تا 25 دن بعد لازمی پانی لگائیں۔ پہلے پانی میں تاخیر سے شگوئے کم نکلتے ہیں اور ان میں تولیدی شگوئوں (Fertile Tillers) کا تناسب کم ہوتا ہے۔
- 6- پہلے پانی کے ساتھ ایک یوریا کی بوری فی ایکڑ لازمی ڈالیں۔ ریتیلی زمین ہونے کی صورت میں نائٹروجنی کھاد کا استعمال تر و تر حالت میں کریں تاکہ ضیاع کم سے کم ہو۔

- 7- جڑی بوٹیوں کی تلفی اچھی پیداوار کی ضمانت ہے۔ جڑی بوٹیاں 14 سے 42 فیصد تک پیداوار میں کمی کا باعث بنتی ہے۔ اس لیے کھیت کے معائنے کے بعد مناسب وقت پر جڑی بوٹی مارا دیات کا سپرے ضرور کریں۔

- 8- کیمیائی زہریں 100 سے 120 لٹرن فی ایکڑ پانی میں ٹی جیٹ نوزل کی مدد سے دوپہر کے وقت سپرے کریں۔
- 9- پہلی آبپاشی کے بعد کھیت و تر حالت میں آنے پر دوہری بارہیر و چلائی جائے۔ خواہ فصل چھلے کے ذریعے ہی کیوں نہ کاشت ہو۔ اس طریقے سے ایک طرف جڑی بوٹیوں کی تلفی میں مدد ملتی ہے اور دوسرا تر بھی دیر تک قائم رہتا ہے۔

کپاس:-

- 1- مکمل کھلی ہوئی کپاس کی چنائی جلد از جلد کریں تاکہ گندم کی جلد از جلد کاشت مکمل ہو سکے۔
- 2- چنائی پتوں پر سے شبنم کے قطرے سوکھ جانے کے بعد شروع کریں۔ اور چنی ہوئی کپاس کو خشک جگہ پر سوتی کپڑا یا ترپال بچھا کر ہر قسم کو علیحدہ رکھیں۔

- 3- آخری چنائی سے بیج کا انتخاب ہرگز نہ کریں کیونکہ اس کا ریشہ کمزور اور بنولہ بیج کے قابل نہیں ہوتا۔
- 4- کپاس کی چنائی، ترسیل اور سنوڑتج کے دوران پٹ سن یا پولی پرائیملین ہرگز استعمال نہ کریں۔ جہاں ضرورت ہو سوتی کپڑا استعمال کریں۔
- 5- نمی کی صورت میں کپاس کو باہر دھوپ میں خشک کر کے پھر سنوڑ کریں۔
- 6- گلابی سنڈی کی تلفی کے لیے آخری چنائی کے بعد کھیت میں جانوروں کو کھلا چھوڑ دیں تاکہ کھیت میں موجود باقیات کو کھا جائیں۔
- 7- زمین کی زرخیزی میں اضافہ کے لیے چھڑیوں کو روٹاویٹر کے ذریعے زمین میں دبا دیں۔

دھان:-

- دھان کی برداشت میں تاخیر کرنے سے دانوں کے جھڑنے اور ٹوٹنے کا خطرہ بڑھ جاتا ہے۔ اس لیے دھان کی بروقت کٹائی اور پھنڈائی اچھی پیداوار کے لیے ضروری ہے۔
- 2- موسمی اثرات سے محفوظ رکھنے کے لیے رات کے وقت مونگی کی ڈھیری کو پرالی یا ترپال سے ڈھانپ دیں۔
- 3- ذخیرہ کرنے سے پہلے مونگی کو خشک کرنا ضروری ہے۔ ورنہ کیڑوں سے نقصان کا اندیشہ زیادہ ہوتا ہے۔

کما د:-

- 1- عام طور پر فصل کی کٹائی زمین کے اوپر سے کی جاتی ہے جو کہ مونڈھی فصل کی لیے نقصان دہ ہوتی ہے۔ فصل کو زمین سے ایک انچ گہرائی سے کاٹیں۔ اس سے زیر زمین پوریوں میں موجود آنکھوں کو زیادہ صحت مند ماحول میسر آتا ہے۔ اور منڈھوں میں موجود گڑوؤں کی سنڈیوں کو تلف کرنے میں مدد ملتی ہے۔
- 2- مونڈھی کاشت کا ارادہ نہ ہو تو کما د کی جلد از جلد کٹائی کر کے دیگر فصلات کی کاشت کریں۔
- 3- سیلاب، چوہے کے حملے اور گرنے کی صورت میں متاثرہ فصل کو پہلے کاٹیں۔
- 4- کٹائی سے 20-25 دن پہلے آبپاشی دینا بند کر دیں۔
- 5- کما د کی کٹائی اس وقت کریں جب چھینی کی بافت عروج پر ہو۔ سب سے پہلے مونڈھی پھر ستمبر کاشتہ اور آخر میں بہاریہ فصل کی کٹائی کریں۔ اس طرح چھینی کی ریکوری زیادہ ہوگی۔
- 6- کہر کی صورت میں فصل کو ہلکا پانی لگا دیں۔
- 7- مونڈھی فصل رکھنے کا ارادہ ہو تو کما د کو 15 جنوری کے بعد کاٹیں۔
- 8- بیماریوں اور کیڑوں سے محفوظ فصل سے بیج حاصل کریں۔
- 9- کما د کاٹنے کے بعد جلد از جلد مل کو سپلائی کریں تاکہ وزن اور ریکوری میں کمی نہ آئے۔



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