

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 2020

Summary

Transitional stage from Kharif to Rabi season can be witnessed by start of increase in values of Normalized Difference Vegetation Index (NDVI) after touching lowest values.

Wheat crop production in Pakistan is facing the challenge of sustainability to meet the country food requirements. Main reasons for less wheat production in last two to three years are a) Non availability of certified and improved varieties seed b) Imbalance use of fertilizers particularly of phosphate due to high prices c) Spread of rust disease due to high humidity d) Rains causing lodging particularly at the time of maturity / harvest. Effective and timely measures for management of above issues can help in sustainable production. FCA in its meeting on 22nd October, 2020 fixed wheat production target of 27.000 million tons from an area of 9.210 million hectares with an average yield of 2,932 kg/ha.

Wheat crop sowing is in progress. This year wheat sowing is expectedly to be timely as compared to previous year mainly due to timely termination of cotton and rice crops. Germination is also satisfactory so far in both irrigated and barani areas due

to timely rains and other inputs supply. Falling trend in cotton production is still continued with the reduction of more than 50 percent this year as compared to cotton production in 2014-15. This fall in production is mainly attributed to decrease in cotton area and average yield due to number of agronomic and climatic factors. According to Pakistan Cotton Ginning Association (PCGA) report of 1st December 2020, cotton arrivals in the ginning factories of Pakistan were 4.648 million bales as compared to 7.448 million bales during last year (down by 37.59 percent). In Punjab and Sindh, the cotton arrivals during the reported period were lower by 36.38 and 39.10 percent, respectively, as compared to the same period of last year. Sugarcane purchase price is, however, generally higher than support price and is in the range of Rs. 225 to 250 per 40 Kg. There is a tough competition among sugar mills for procurement of sugarcane causing price variation on daily basis and much higher than notified support price without any hue and cry. This may be due to short sugarcane supply and expected extended sugarcane season due to early start of the

CROPS SITUATION

crushing season.

Rice was the main promising crop for this Kharif season. Rice area significantly increased occupying the areas of other Kharif crops mainly cotton. The reasons behind this increase were better rice price in the last year, high yield of hybrid rice and good rains during the monsoon season.

As per report of Indus River System Authority (IRSA) for November 2020, the irrigation water supply was 6.31 MAF against the last year's supply of 6.28 MAF, up by 1.53 percent. As compared to the same period of last year, the irrigation water supplies in Punjab and Balochistan were higher by 2.73 and 12.28 percent, respectively. Khyber Pakhtunkhwa and Sindh, however, has faced shortfall of irrigation water supply by 9.26 and 0.77 percent, respectively.

As per report of National Fertilizer Development Centre (NFDC), total availability of Urea in October 2020 was 1,071 thousand tons whereas total availability of DAP was 473 thousand tons. During October 2020, offtake of Nitrogen and Potash was increased by 108.8 and 47.7 percent, respectively, as compared to the same period of last year. Phosphate offtake, however, was decreased by 12.3 percent as compared to the same period of last year. The decrease in Phosphate and increase in Nitrogen offtake can result in imbalance application of fertilizers to Rabi crops particularly the Wheat crop.



Normalized Difference Vegetation Index (NDVI) 30th November, 2020

Rabi 2020-21

Wheat

Wheat crop production in Pakistan is facing the challenge of sustainability to meet the country food requirements. Main reasons for less wheat production in last two to three years are;

- Non availability of certified and improved varieties seed
- Imbalance use of fertilizers particularly of phosphate due to high prices
- Spread of rust disease due to high humidity
- Rains causing lodging particularly at the time of maturity / harvest

Effective and timely measures for management of above issues can help in sustainable production.

Wheat crop sowing is in progress. This year wheat sowing is expectedly to be timely as compared to previous year mainly due to timely termination of cotton and rice crops. Germination is also satisfactory so far in both irrigated and barani areas due to timely rains and other inputs supply.

Prospects of wheat 2020-21 looks much promising like previous years due to; a) significant increase in support price of wheat from last year b) timely sowing of wheat due to early termination of Kharif crops particularly cotton c) favorable weather conditions d) higher targets to meet food requirements of the country.

Federal cabinet in its meeting held on 10th November, 2020 has fixed wheat support price of Rs. 1650 per 40 kg this year. This showed an increase of more than 20 percent from the last year support price of Rs. 1365 per 40 kg. This increase in support price will increase growers' net margins and help them to have better crop husbandry measures.

The government, however, should focus on the prices and balance use of the fertilizers and other inputs availability. Decrease in urea price and increase in phosphate price can result in imbalance use of fertilizers particularly decrease in phosphate application.

This year wheat area and production targets have been increased to meet country's food requirement during the year 2020-21. Federal Committee on Agriculture (FCA) in its meeting held on 22nd October, 2020 fixed wheat crop targets for 2020-21 with consensus of the provinces. Province wise wheat crop 2020-21 targets are as follows:

Wheat Targets 2020-21 fixed by FCA			
Province	Area (000 Ha)	Production (000 Tons)	Yield (kg/ha)
Punjab	6,560.0	20,000.0	3,049.0
Sindh	1,200	4,000.0	3,333.0
Khyber Pakhtunkhwa	900.0	1,700.0	1,889.0
Balochistan	550.0	1,300.0	2,364.0
Pakistan	9,210.0	27,000.0	2,932.0

Kharif Crops 2020-21

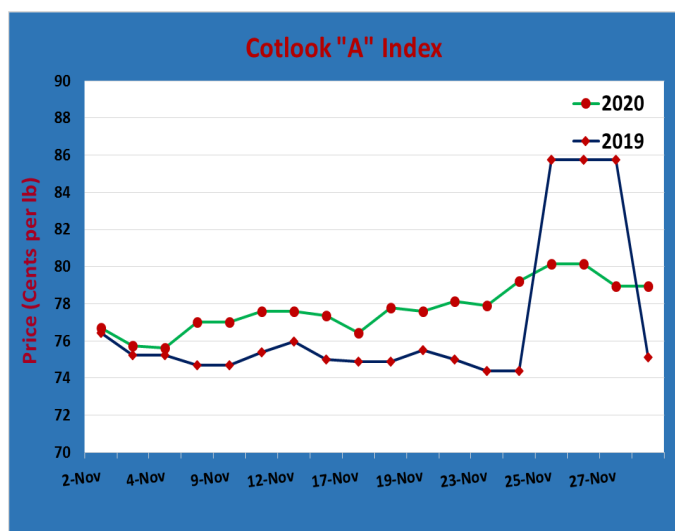
Cotton

Cotton crop was at terminal stage with its last picking in some limited areas at the end of November. This year the cotton crop size remained significantly lower mainly due to; a) decrease in area sown, b) low quality cotton seed c) unfavorable weather conditions d) higher insect pest infestation particularly of Pink Bollworm and e) decrease in farmers' net margins owing to higher cost of production.

According to PCGA report of 1st December 2020, cotton arrivals in the ginning factories of Pakistan were 4.648 million bales as compared to 7.448 million bales during last year (down by 37.59 percent). In Punjab and Sindh, the cotton arrivals during the reported period were lower by 36.38 and 37.10 percent, respectively, as compared to the same period of last year. The details of cotton arrivals are given below:

Cotton Arrivals				
Province	2020	2019	Difference	Percent Difference
Punjab	2,634,487	4,141,096	-1,506,609	-36.38
Sindh	2,013,605	3,306,448	-1,292,843	-39.10
Pakistan	4,648,092	7,447,544	-2,799,452	-37.59

In the international market, average cotton price during November 2020 was 77.77 cents per lb as compared to average price of 76.90 cents per lb during November 2019, showing a nominal increase of 0.875 cents per lb (up by 1.14 percent). Local markets, however, have an average ex-gin price of Rs. 10172.3 during November 2020 against Rs. 9809.6 per 40 kg in November 2019 showing an increase of around Rs. 362.7 per 40 kg (3.70 percent). Increase in local markets prices was mainly due to substantial decrease in cotton production in the country. Phutti prices during November 2020 generally ranged from Rs. 3000 to 4800 per 40 kg, higher than that of last month depending upon lint quality. Graphs showing Cotlook "A" index and Karachi Cotton Association (Ex-gin) prices are given below:



Sugarcane

Sugarcane harvesting has been started in Punjab and Sindh during November. This year crushing season started almost a month earlier than traditional timelines. This will help to lower the sugar price in the general market as the sugar supply increased in the market.

Punjab government has notified sugarcane support price of Rs. 200 per 40 kg whereas Sindh government has still not notified sugarcane support price. Sindh Agriculture department, however, has proposed a support price of Rs. 202 per 40 Kg in comparison to support price of Punjab government. Farmers are, however, demanding from the Sindh government to fix sugarcane support price at the earliest.

Sugarcane purchase price is, however, generally higher than support price and is in the range of Rs. 225 to 250 per 40 Kg. There is a tough competition among sugar mills for procurement of sugarcane causing price variation on daily basis and much higher than support price without any hue and cry. This may be due to short sugarcane supply and expected extended sugarcane season due to early start of the crushing season.

Rice

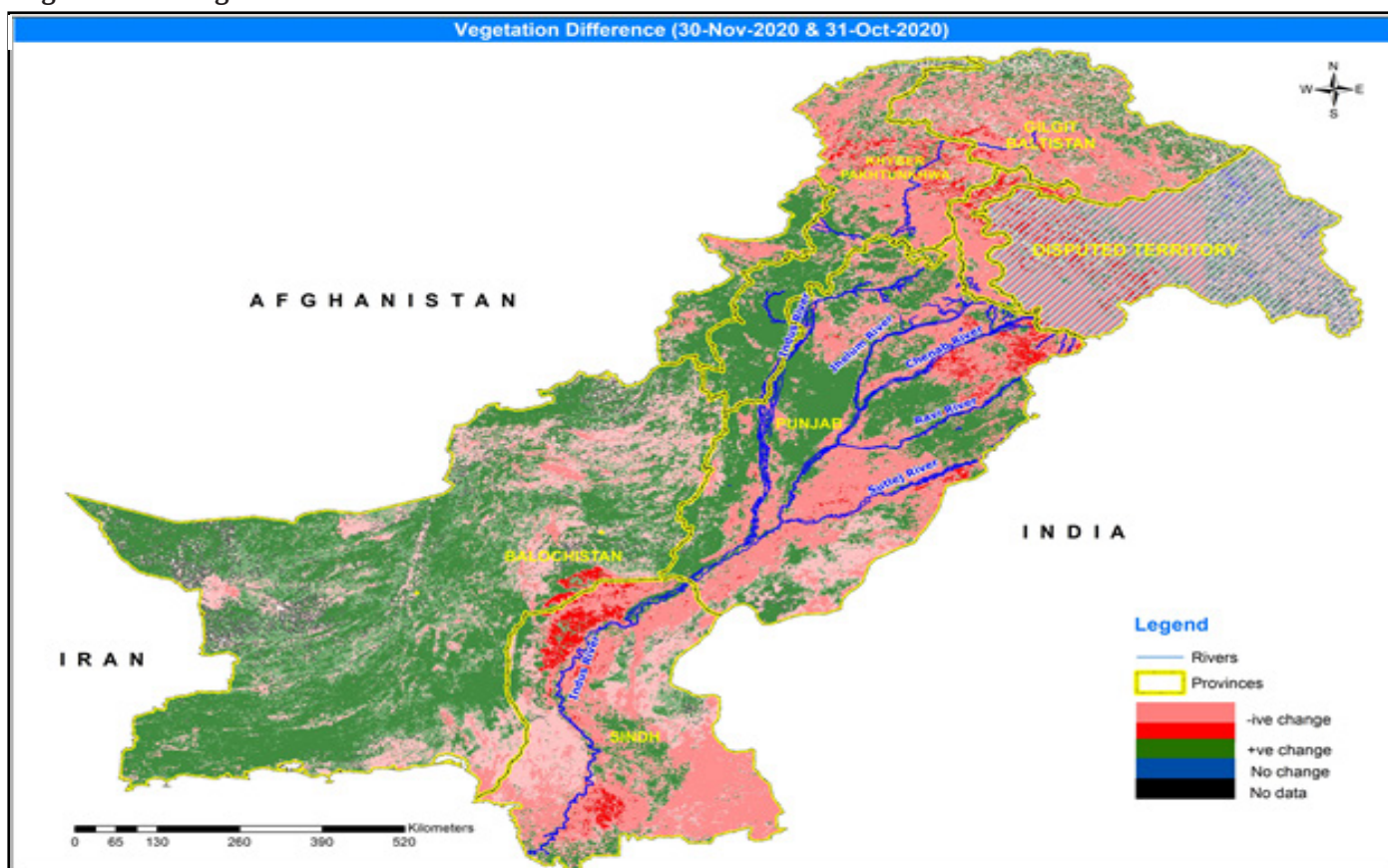
Rice harvesting, particularly of the basmati, got momentum during November. Rice was the main promising crop for this Kharif season. Rice area was significantly increased occupying the areas of other Kharif crops mainly the cotton. The reasons behind this increase were better rice price in the last year, high yields of hybrid rice and good rains during monsoon season.

Rice Price Comparison for the Month of November (2020 & 2019)							
District	Market Name	Paddy (Basmati)			Paddy (Kainat)		
		2020	2019	Percent	2020	2019	Percent
Vehari	Vehari	4931.7	4982.7	-1.0	4976.2	5159.6	-3.6
Pakpattan	Pakpattan	5169.7	4822.7	7.2	5237.4	5553.3	-5.7
Khanewal	Mian Channu	4705.6	5602.5	-16.0	4699.2	5128.7	-8.4
Average of Above		4935.6	5135.9	-3.9	4970.9	5280.5	-5.9

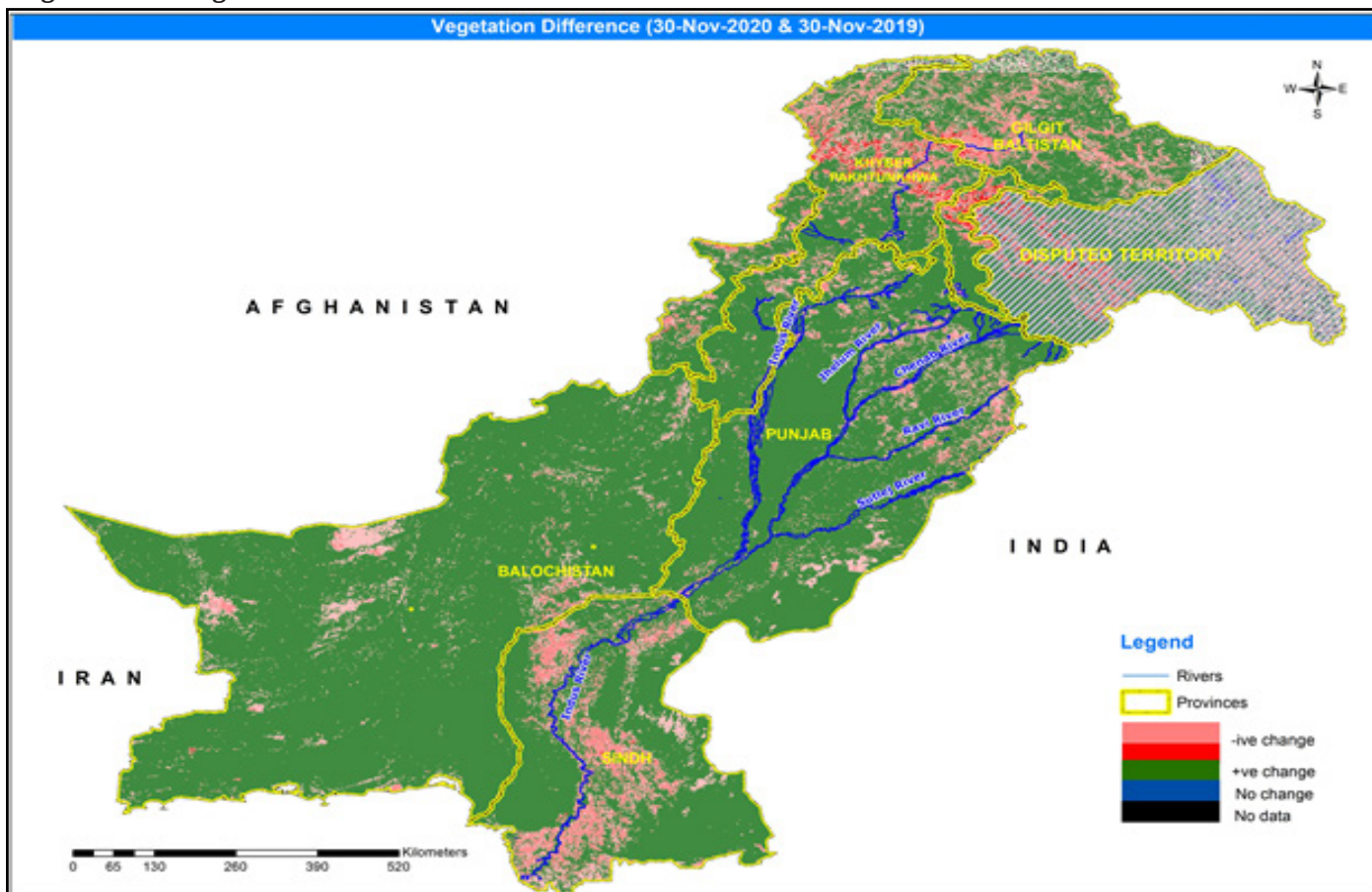
Lower rice prices are generally due to increase in area and production of rice. However, better average yield may compensate for decrease in rice price with better net returns for the farmers.

VEGETATION DIFFERENCE

Vegetation Change: November 2020 vs October 2020

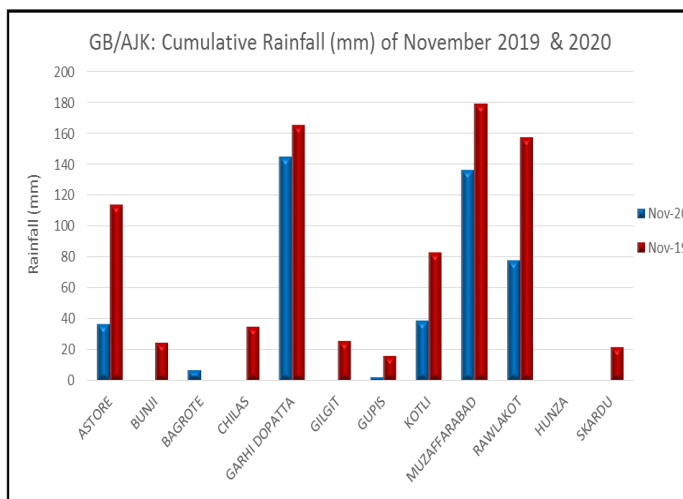
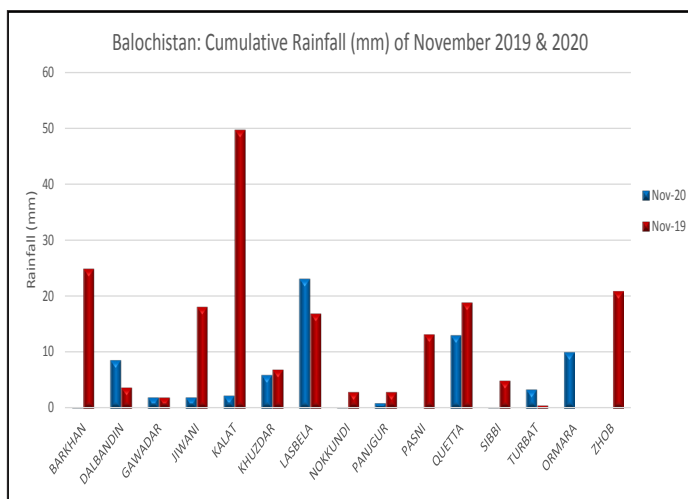
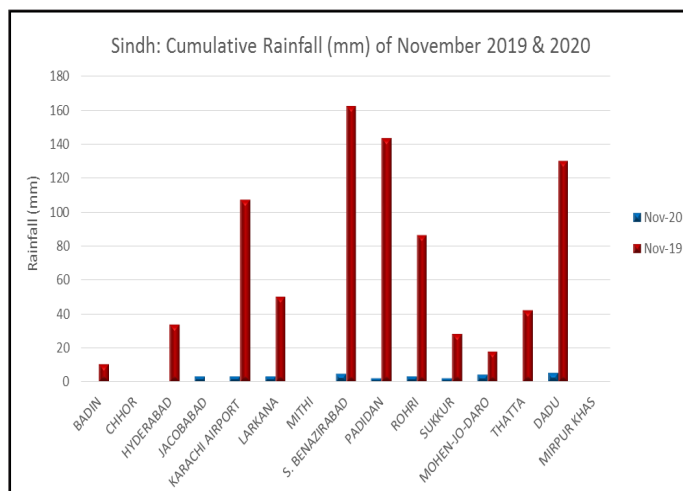
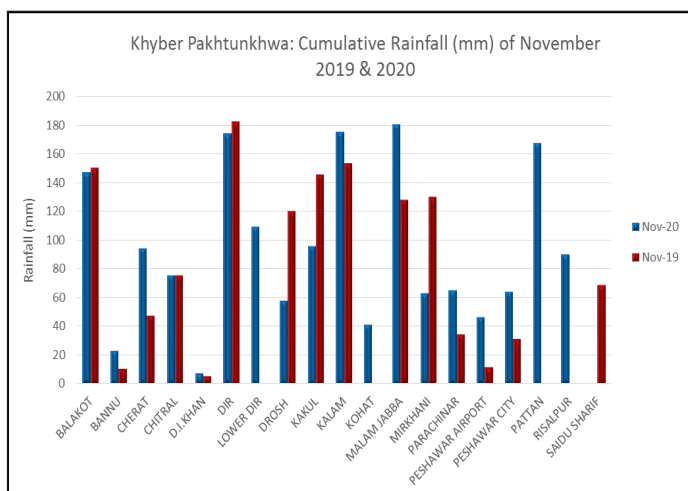
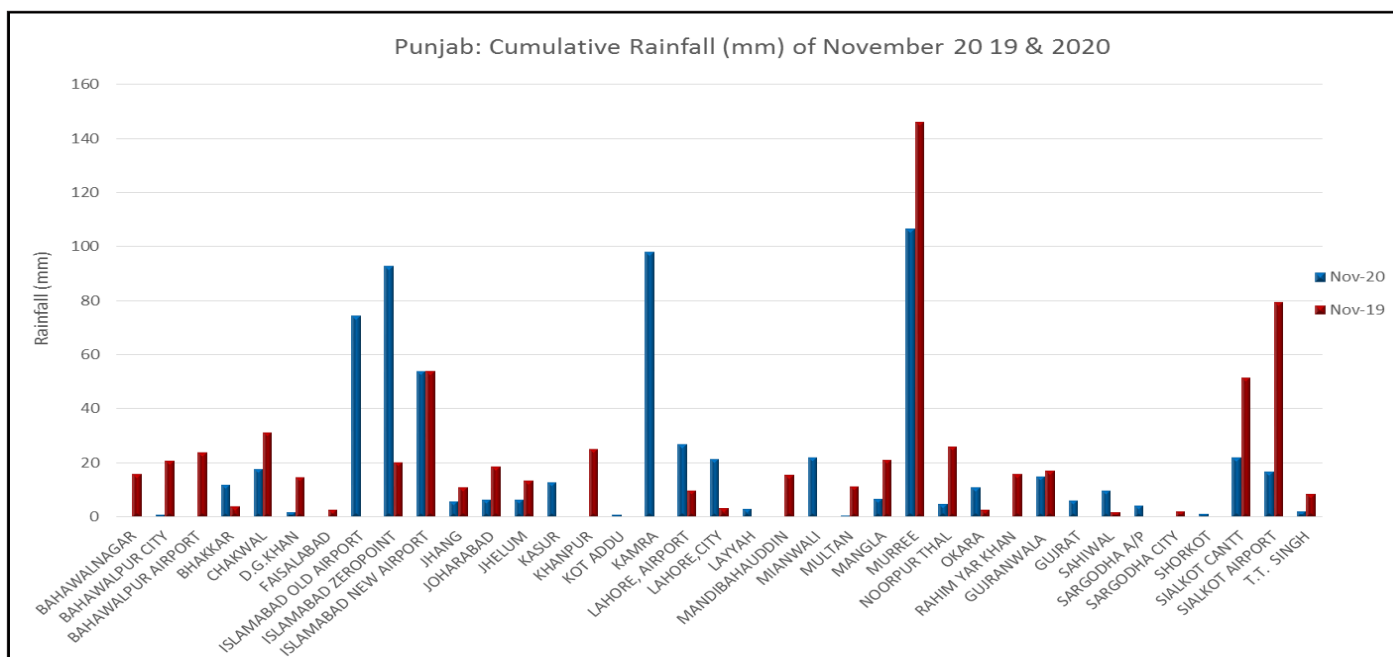


Vegetation Change: November 2020 vs November 2019



SATELLITE IMAGERY: SPOT VGT 1000M

Monthly Rainfall (mm): November (2019 & 2020)

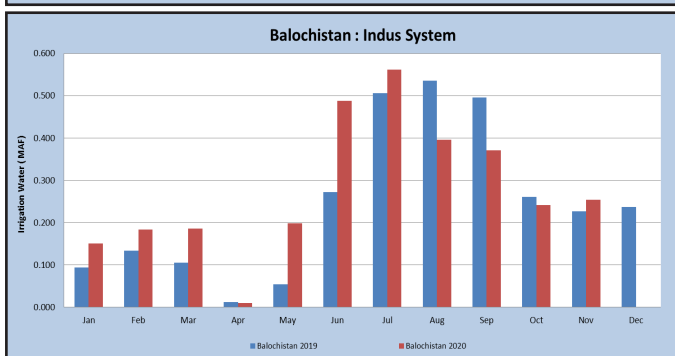
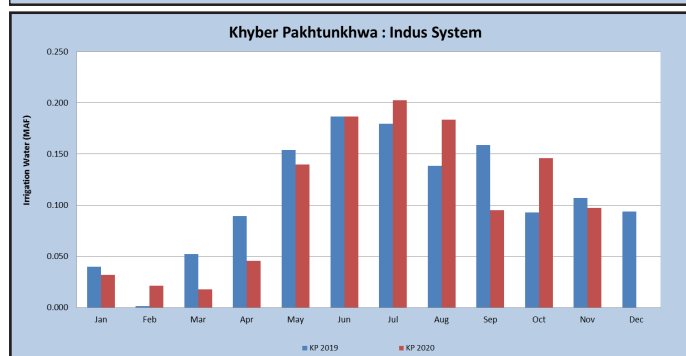
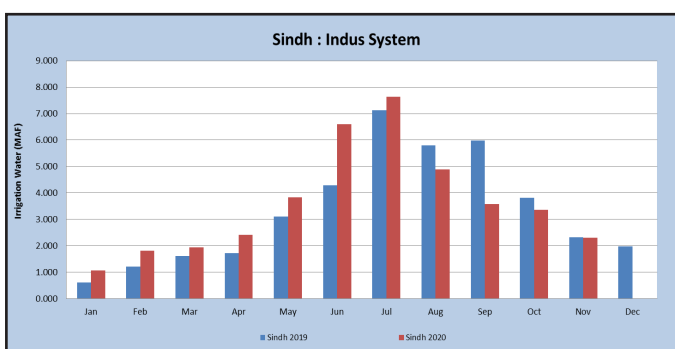
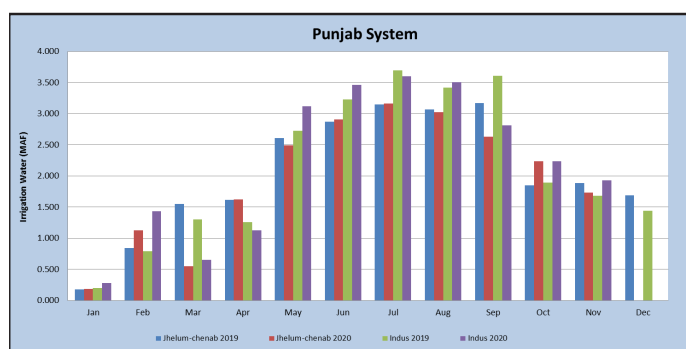


Irrigation Water Supply: November, 2020

The irrigation water supply during November 2020 was 6.31 MAF against the last year's supply of 6.22 MAF, higher by 0.10 MAF (1.53 percent). During November 2020, as compared to the same time period of last year, the supply in Punjab was 3.65 MAF (higher by 2.73 percent), Sindh was 2.31 MAF (lower by 0.77 percent), Khyber Pakhtunkhwa received 0.09 MAF (lower by 9.26 percent) while Balochistan received water supply of 0.25 MAF (higher by 12.28 percent).

Rabi 2020-21	Month	Year	Punjab			Sindh	Khyber Pakhtunkhwa	Balochistan	Total
			Jhelum-Chenab	Indus	Total				
			Million Acre Feet						
	October	2020	2.23	2.24	4.47	3.37	0.15	0.24	8.23
		2019	1.85	1.90	3.75	3.81	0.09	0.26	7.91
Change		0.38	0.34	0.72	-0.44	0.05	0.01	0.32	
% change		20.64	18.09	19.35	-11.52	57.48	-7.39	4.05	
November	2020	1.72	1.92	3.65	2.31	0.09	0.25	6.31	
	2019	1.88	1.67	3.56	2.32	0.10	0.22	6.22	
	Change	-0.15	0.25	0.10	-0.02	-0.01	0.03	0.10	
	% change	-8.11	14.89	2.73	-0.77	-9.26	12.28	1.53	

Source: Indus River System Authority (IRSA)



Fertilizer Offtake

As per report of NFDC, the month of October 2020 started with opening inventory of 473 thousand tons of Urea. During October 2020, domestic Urea production was 598 thousand tons with total availability of 1071 thousand tons. Urea offtake during October remained 413 thousand tons leaving behind closing balance of 672 thousand tons.

The opening inventory of DAP for October 2020 was 297 thousand tons. During October 2020 domestic production of DAP was 76 thousand tons. The total availability of DAP was 473 thousand tons which also includes 100 thousand tons of imported supplies. DAP offtake during October 2020 was 229 thousand tons leaving behind closing balance of 244 thousand tons.

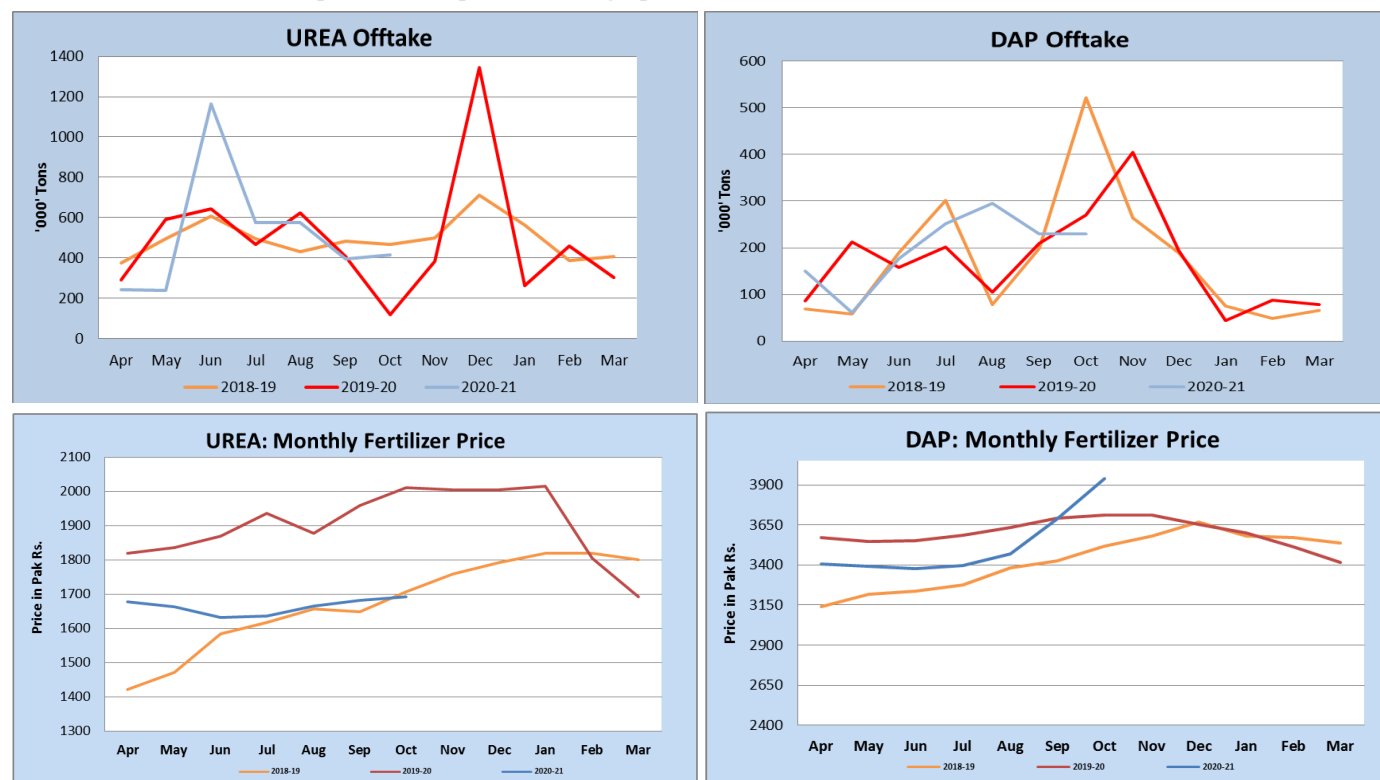
During October 2020, offtake of Nitrogen and Potash increased by 108.8 and 47.7 percent respectively while for that of Phosphate decreased by 12.3 percent..

Product	Opening Inventory	Domestic Production	Imports	Total Availability	Offtake	Write On/Off	Closing Balance
(000 Tons)							
Urea	473	598	0	1071	413	14	672
DAP	297	76	100	473	229	0	244

Month	Fertilizer Offtake Rabi 2020-21				Fertilizer Offtake Rabi 2019-20				Percent Change			
	Nitrogen	Phosphate	Potash	Total	Nitrogen	Phosphate	Potash	Total	Nitrogen	Phosphate	Potash	Total
	(000 Tons)								Nitrogen	Phosphate	Potash	Total
Oct	255.6	123.5	7.3	386.4	122.4	140.7	5.0	268.1	108.8	-12.3	47.7	44.1
Total	255.6	123.5	7.3	386.4	122.4	140.7	5.0	268.1	108.8	-12.3	47.7	44.1

Source: MRR.11/2020 NFDC

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



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 چھیتی 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 چھیتی 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 کیڑوں/سرسوں کی کم از کم ایک قطارا میکڑ 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 شگوفے کم نکلتے ہیں اور ان میں تولیدی شگوفوں (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 تروتر 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 لٹر فی ایکڑ پانی میں فی 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 چھٹہ 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 بھنڈائی اچھی پیداوار کے لیے ضروری ہے۔
- 2- موسمی اثرات سے محفوظ رکھنے کے لیے رات کے وقت مونجی کی ڈھیری کو پرالی یا ترپال سے ڈھانپ دیں۔
 - 3- ذخیرہ کرنے سے پہلے مونجی کو خشک کرنا ضروری ہے۔ ورنہ کیڑوں سے نقصان کا اندیشہ زیادہ ہوتا ہے۔

کماڈ:-

- 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 مدندھوں میں موجود گڑووں کی سنڈیوں کو تلف کرنے میں مدد ملتی ہے۔
- 2- مونڈھی کاشت کا ارادہ نہ ہو تو کماڈ کی جلد از جلد کٹائی کر کے دیگر فصلات کی کاشت کریں۔
- 3- سیلاب، چوہے کے حملے اور گرگرنے کی صورت میں متاثرہ فصل کو پہلے کاٹیں۔
- 4- کٹائی سے 20-25 دن پہلے آبپاشی دینا بند کر دیں۔
- 5- کماڈ کی کٹائی اس وقت کریں جب چینی کی بافت عروج پر ہو۔ سب سے پہلے مونڈھی پھر ستمبر کاشتہ اور آخر میں بہار یہ فصل کی کٹائی کریں۔ اس طرح چینی کی ریکوری زیادہ ہوگی۔
- 6- کہر کی صورت میں فصل کو ہلکا پانی لگا دیں۔
- 7- مونڈھی فصل رکھنے کا ارادہ ہو تو کماڈ کو 15 جنوری کے بعد کاٹیں۔
- 8- بیماریوں اور کیڑوں سے محفوظ فصل سے بیج حاصل کریں۔
- 9- کماڈ کاٹنے کے بعد جلد از جلد مل کو سپلائی کریں تاکہ وزن اور ریکوری میں کمی نہ آئے۔



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