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Report Highlights:

India is heading for a fourth consecutive record wheat harvest, with marketing year (MY) 2020/21 (April/March) production forecast at 105 million metric tons (MMT). MY 2020/21 rice production is forecast at a near record 117 MMT with average yields. Back-to-back record harvests and government procurements have inflated MY 2019/20 wheat and rice stocks to more than three times desired levels. The Government of India (GOI) is likely to release additional wheat and rice at subsidized prices in CY 2020 and 2021 to reduce stocks to manageable levels. Indian wheat remains uncompetitive in the international market, but exports in MY 2020/21 are forecast higher at 1 MMT on expected higher sales to neighboring countries. Rice exports in MY 2020/21 are forecast to recover to 12 MMT on higher exportable supplies. MY 2020/21 coarse grain consumption is forecast at 45.8 MMT stagnant over last year on weak demand from the poultry sector, which has been hit by fake news that poultry products can transmit Covid-19.

WHEAT

Table 1. India: Commodity, Wheat, PSD

(Area in Thousand Hectares, Quantity in Thousand Metric Tons, Yield in MT/Hectare)

Wheat	2018/2019		2019/2020		2020/2021	
Market Begin Year	Apr 2018		Apr 2019		Apr 2020	
India	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	29651	29651	29319	29319	0	31050
Beginning Stocks	13230	13230	16992	16992	0	24000
Production	99870	99870	103600	103600	0	105000
MY Imports	17	26	20	25	0	25
TY Imports	18	26	20	25	0	25
TY Imp. from U.S.	0	0	0	0	0	0
Total Supply	113117	113126	120612	120617	0	129025
MY Exports	496	496	500	500	0	1000
TY Exports	494	515	500	500	0	1000
Feed and Residual	5000	5000	6000	6000	0	6500
FSI Consumption	90629	90638	92000	90117	0	93000
Total Consumption	95629	95638	98000	96117	0	99500
Ending Stocks	16992	16992	22112	24000	0	28525
Total Distribution	113117	113126	120612	120617	0	129025
Yield	3.3682	3.3682	3.5335	3.5335	0	3.3816

PRODUCTION

MY 2020/21 Outlook

India is heading for its fourth consecutive record wheat harvest in the upcoming season as a result of favorable weather conditions in major wheat growing areas. Sufficient soil moisture at the time of planting (October-December), low temperatures, and well-distributed rainfall during the growth stage (December-February) supported higher planting and productivity prospects. However, excessive rains and a hailstorm in the mid-March caused crop lodging in some areas. Assuming normal weather conditions through harvest (April/May), Post forecasts marketing year (MY) 2020/21 (April/March) wheat production at a record 105 million metric tons (MMT) from 31.1 million hectares (MHa), compared to last year's record harvest of 103.6 MMT, largely on higher planting.

Excellent late 2019 monsoon rains and improved availability of irrigation water provided ideal planting conditions prompting farmers to increase the area planted to wheat. The Ministry of Agriculture and Farmers Welfare's (MoAFW) second advance estimate released on February 18, 2020, estimated the area planted to wheat at 31.1 MHa, nearly six percent higher than last year, largely in the less irrigation-intensive states of Madhya Pradesh, Uttar Pradesh, Rajasthan, and Gujarat. The GOI's steady increase in the minimum support price (MSP) for wheat, coupled with expanding MSP procurement operations in most states, have encouraged farmers to continue to planting wheat in the *rabi* (winter planted) season.

Timely planting and the onset of winter in the second week of December (lower temperatures) supported healthy establishment of wheat seedlings. Well-distributed rains and extended low temperature conditions during December through February during critical growth stages (vegetative growth, tillering, flowering, panicle initiation, milking, and seed-setting stages) raised the prospects for higher yield for the upcoming harvest, compared to last year's record yields. There have been no major incidence of pests or disease in the major wheat growing areas, except for locust attacks in the state of Rajasthan. However, untimely rains and a hailstorm in mid-March in the north's major wheat producing states reportedly caused crop lodging in several areas, which is likely to impact the overall yield for the upcoming harvest. MoAFW's preliminary estimate (2nd Advance Estimate of Feb 18, 2020), released well before the March rains, forecasts 2020 wheat production at a record 106.2 MMT. Most trade sources have revised their earlier expectation for the upcoming harvest down from 108-110 MMT to 102-105 MMT.

Assuming normal weather conditions from now through harvest (April/May), Post forecasts marketing year (MY) 2020/21 wheat production at 105 MMT, based on an expected slightly lower yield of 3.4 MT/Ha, compared to last year's record 3.5MT/Ha. The ongoing relatively extended cold temperature conditions in March may delay the harvest by 1-2 weeks. However, any sudden increase in temperature in April (grain maturity stage) and/or heavy rains/hailstorms during harvest (April/May) could adversely affect yield prospects and lower production from the forecast level.

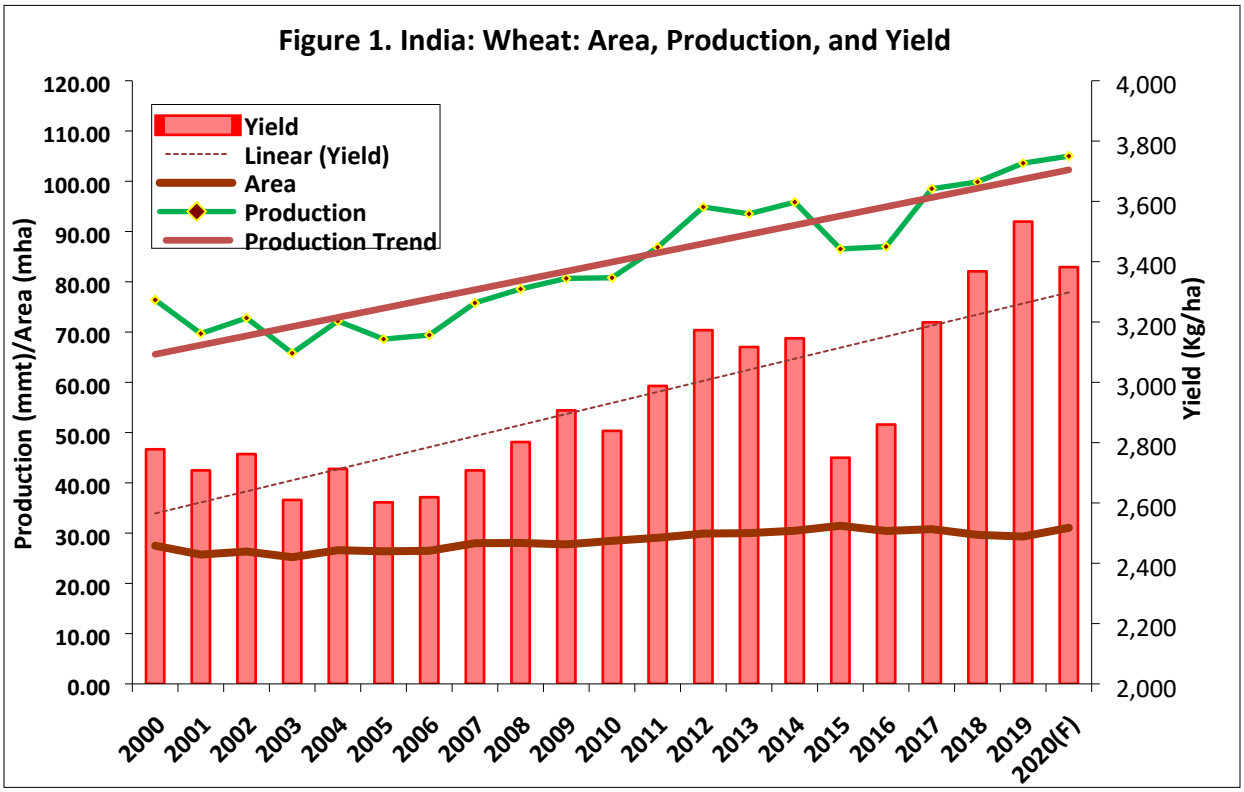
Farmers prefer growing wheat to other crops in irrigated areas in the wheat growing states because of the "guaranteed" returns on relatively stable market prices and yields, compared to other competing *rabi* (winter planted) crops (corn, pulses, oilseeds and other coarse grains). Due to the GOI's ongoing MSP procurement program for wheat and rice, wheat prices during the harvest season are expected to remain stable compared to other crops. While weather conditions like temperatures and rainfall during the crop season (November-April) influence yield prospects, wheat productivity is relatively stable under irrigated conditions vis-à-vis other competing crops.

Depending on the availability of irrigation resources and frequency of irrigation, soil conditions, and the adoption of technology, wheat yields show variations across major growing states. For example, wheat yields in largely irrigated northern India (Punjab, Haryana, and Western Uttar Pradesh) are about 4.5 to 5.0 MT, per hectare, while yields in western and central states (Gujarat, Rajasthan, Madhya Pradesh, Bihar and central/eastern Uttar Pradesh) are relatively lower at 1.5 to 3.0 MT, per hectare. The perennial river system from the Himalayas replenishes the surface (canal) and ground (tube wells) systems in northern India, ensuring farmers' ability to irrigate 5-7 times during the crop season. In comparison, western and central states largely depend on the residual water after the monsoon, ground, and some surface waters (lakes/ponds), so farmers can only manage about 2-4 irrigations.

Indian wheat is characterized as soft to medium hard, medium protein, white bread wheat, and is more or less comparable to U.S. hard white wheat. Wheat from the central and western regions is grown under relatively drier conditions (lower irrigation resources) and has relatively higher protein and gluten in comparison to wheat from northern India.

Production Trend and Challenges

Indian wheat production has exceeded trends in the last four years on stable planting and higher productivity due to the GOI's increasing MSP, development and expansion of area planted to new, higher yielding varieties in various states, and generally favorable weather conditions. Acreage in recent years has been relatively stable, fluctuating between 29-31 MHa depending on planting conditions. Despite the steady increase in wheat production, agricultural experts report that wheat cultivation in India faces the threat of climate change, soil/irrigation resource degradation, and diversion of acreage to non-agricultural use.



Source: Ministry of Agriculture and Farmers Welfare (MoAFW), Government of India (GOI); and FAS/New Delhi forecast for 2020 (MY 2020/21).

Wheat yields in the largely irrigated (assured irrigation) northern states are comparable to other high yielding producers in the world. Wheat yields in the other wheat growing states (partially assured irrigation) have been steadily increasing with the expansion in irrigation facilities and adoption of improved varieties and production technologies, resulting in higher-than-the-trend yields in recent years. With the market dominance of the GOI's MSP wheat procurement program, farmers have increasingly shifted area out of traditional cultivars that carry a quality premium (hard wheat or high protein) to new higher yielding, but lower quality, varieties that maximize MSP returns.

Despite back-to-back bumper harvests in recent years, researchers are concerned about the vulnerability of the wheat crop to 'climate change,' including the threat of rising temperatures due to an 'earlier-than-normal' onset of summer (terminal heat), and unseasonal heavy rains affecting the crop at the grain filling/maturity stages (March/April). Local researchers estimate that about 10-12 MHa are reportedly

prone to terminal heat stress. Scientists attribute the recent incidences of untimely heavy rains/hailstorms during maturity/harvest stage (MY 2016/17 and current season) to global warming/climate change. Under the leadership of the Indian Council of Agricultural Research (ICAR) and various state agricultural universities (SAU), India's national agriculture research system (NARS) is monitoring the situation and developing response mechanisms through agronomic management (early planting) and technological advances (short duration varieties) to mitigate potential climate change risks.

Northwestern wheat growing areas have reported sporadic incidence of yellow rust in the last few years, but there has been no known incidence of Ug99, a wheat rust of global concern. While local agricultural scientists assert that the agro-climatic conditions in northern India's wheat belt are not conducive to Ug99, global experts report that the highly mutative nature of the Ug99 strain could make India's wheat growing areas vulnerable to it. Since the first report of Ug99 in 1999, NARS teams regularly survey and monitor the wheat crop in the growing states. They also screen popular varieties and promote replacement of susceptible varieties with more resistant ones through GOI and various state government programs. The wheat research program under NARS continues to work on developing location-specific wheat varieties with traits addressing crop duration, varied soil conditions, rising yield potential, and improved grain qualities through traditional breeding methods. Biotechnology applications in wheat are limited to experimental marker-assisted breeding trials designed to develop resistance to biotic (diseases, insects, other pests) and abiotic (temperature, precipitation, and relative humidity, among others) stresses. Recent government programs to promote new wheat varieties have been gradually making inroads among growers.

India's growing economy is creating significant pressure on agricultural land to support growing urbanization and infrastructure needs. Since most of the wheat area has assured ground/canal irrigation supplies, interest from urban developers and other non-agricultural businesses is increasing the diversion of area dedicated to wheat cultivation adjacent to urban habitats. In northern India, over-exploitation of ground water due to flood irrigation is causing problems of soil salinity and declining water tables in the wheat growing belts. Accordingly, researchers report that farmers may be forced to switch to less water intensive crops like corn, pulses, or vegetables in near future.

Durum Wheat Prospects

India produces small quantities of durum in Madhya Pradesh, Rajasthan, and Maharashtra, mostly for food processors. Sources report that India is likely to produce about 1.6 MT of durum wheat in MY 2020/21, compared to an estimated 1.5 MMT in MY 2019/20 on expected higher yields.

Over the last decade, farmers have shifted from durum wheat cultivation to more common, non-durum wheat varieties, due to declining profit margins for durum vis-à-vis common wheat, with MSP prices driving the wheat market in recent years. Common wheat yields are reportedly 30-40 higher than durum wheat, and the GOI's increasing MSP ensures higher returns for common wheat than for durum. Most durum wheat is procured by the private sector, typically at a premium over common wheat for higher-value bakery and confectionary products. With the import of relatively 'cheap' high quality imported wheat (APW) for blending and processing coming to a halt since MY 2018/19, durum wheat producers are realizing 20-25 percent price premium over common wheat.

CONSUMPTION

After relatively stagnant consumption over the last three years, India's total wheat consumption in MY 2020/21 is forecast to increase by over three percent to 93 MMT, on excess domestic supplies and government offloading of the excess in the open market to reduce government grain stocks to manageable levels. Wheat use for feed and residual is estimated higher at 6.5 MMT compared to 6 MMT last year on expected higher supplies of damaged/spoiled government wheat stocks. Based on the estimated higher government wheat stocks due to lower-than-expected offtake of government wheat, MY 2019/20 wheat (FSI) consumption is revised lower to 90.12 MMT. Wheat use for feed and residual remains unchanged at 6.0 MMT.

Food, Seed and Industrial Use (FSI) Consumption

Despite surplus domestic supplies, India's FSI wheat consumption over the last three years has stagnated around 90-91 MMT, as government procurement and price policy dominated the domestic wheat market. With the government procuring the majority of domestic production and influencing the market by fixing open market sales prices linked to the MSP, wheat consumption stagnated on weak domestic demand. Due to the growing economy and consumer expenditures diversifying from staple cereals to higher value items like fruits, vegetables, dairy, and meat products, per capita wheat consumption has eased, particularly with the government trying to keep the prices linked to increasing MSP in recent years.

Current high government grain (wheat and rice) stocks, coupled with forecast record MY 2020/21 wheat production and government procurement, is likely to further inflate government grain stocks in the next few months to unmanageable levels, exacerbating the existing storage crisis. The GOI will be under tremendous pressure to sell-off higher quantities of wheat through the public distribution system (PDS), other food security programs, and subsidized open-market sales. Consequently, MY 2020/21 FSI wheat consumption is forecast to increase to 93 MMT, compared to 90.12 MMT last year, on expected weak domestic prices and in order to meet the food security needs of the growing population (1.2 percent, per annum).

Wheat is the staple food in the traditional wheat growing northwest and central India, but it competes with rice in non-growing regions (south and east India). Due to the GOI's MSP policy, open market sale price (OMSS) policy, and import tariffs, wheat prices have been steadily increasing in MY 2018/19 and most of 2019/20 (see Figure 3). High import tariffs and the GOI's OMSS sale prices contained wheat consumption in the non-traditional southern and eastern states. Relatively higher OMSS sale prices also contained the offtake of wheat by the private trade in MY 2019/20 in the traditional wheat states. Consequently, MY 2019/20 FSI consumption is estimated lower at 90.12 MMT, compared to MY 2018/19 consumption at 90.64 MMT.

Households, local restaurants, and eateries account for about 75-80 percent of the wheat domestically consumed in India in the form of handmade breads called *chapattis, rotis,* or *parathas* (unleavened flat bread) that use *atta* (whole wheat flour) and/or *maida* (flour without bran). Some wheat is used for traditional processed products like raised breads, "biscuits" (cookies), and other bakery items (about 15 percent). There is also a small, but growing, market for high quality wheat (5 MMT) for western style pasta,

and the baking and confectionary foods markets, which have been growing at a healthy 8-10 percent, per annum, over the past few years.

The organized milling sector is relatively small at about 1,300 medium-to-large flourmills with aggregate milling capacity of about 25-28 MMT, per year. These businesses mill mostly *maida* and semolina to cater to HRI sector demand, and produce bran flakes for the mixed feed industry. Market sources report that most mills are operating at 55-60 percent of their capacity, and process about 15-16 MMT of wheat, annually.

Feed Use

Most commercial feed caters to the poultry and aquaculture sectors, which largely uses corn, oilseed meals, other coarse grains, and small quantities of inferior quality wheat. Typically, spoiled and inferior quality wheat not deemed fit for human consumption, whether government-held or from open market stocks, is used for commercial animal feed, mainly for dairy cattle and buffaloes. Farmers also use inferior quality wheat and wheat bran from the flour milling industry for feeding lactating cows and buffaloes at the household level (unorganized sector). Last year, high corn prices resulted in poultry feed millers buying about 1-1.5 MMT of wheat in the open market for feed use.

India's dairy sector is largely comprised of backyard dairy farmers having 2-3 animals that consume very limited amounts of compound feed. Most of the dairy sector's feed use is restricted to lactating animals, and includes oil cakes, household food waste, inferior quality wheat, and other grain mixes. In recent years, dairy farmers have increasingly replaced local, low-yielding dairy cattle breeds with higher yielding crossbred cows and buffaloes, which require high-energy feed. Market sources report that this trend is driving demand for commercial dairy feed, which is growing by about 15 percent, per year. Due to the likely higher spoilage of 'more-than-manageable' government-held wheat stocks, Post expects a higher use of wheat for animal feed in the coming year. Consequently, MY 2020/21 wheat consumption for feed and residual is forecast higher at 6.5 MMT, compared to 6 MMT last year.

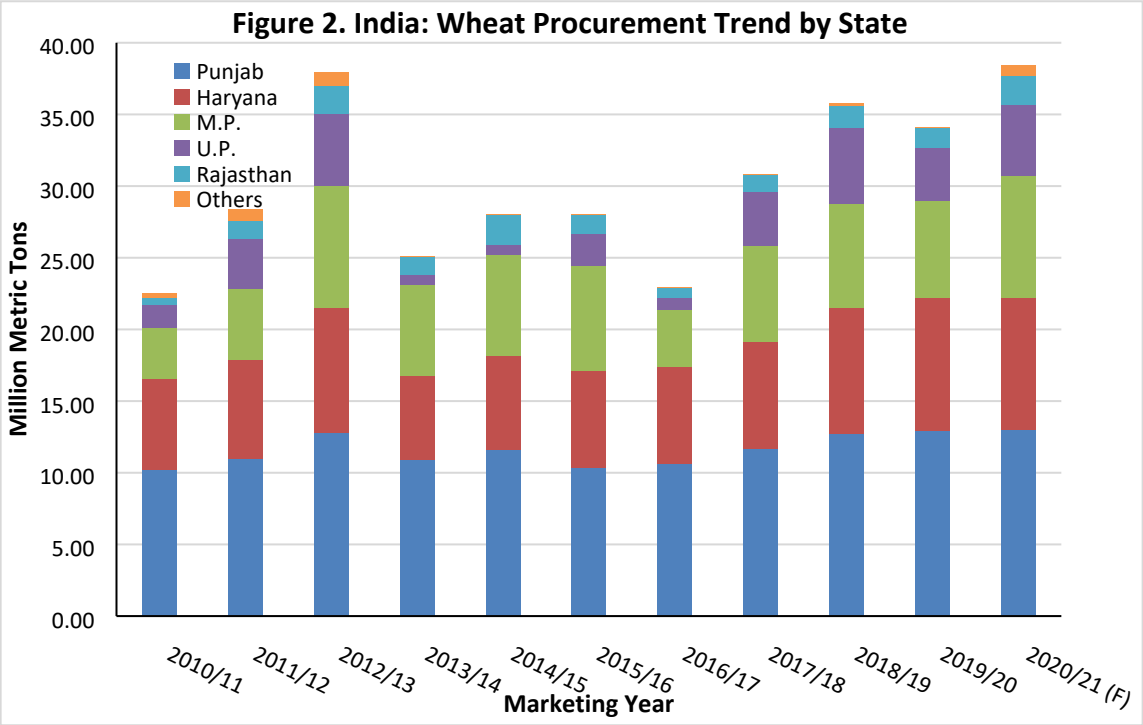
Distribution System

About 60 percent of the wheat produced is marketed by farmers, and the balance is used for family food, feed, and seed use. More than half of the marketed surplus by farmers is procured under the GOI's MSP program for the PDS, other food security programs, and for open market sale to private millers/traders. The balance of marketed wheat is procured directly by the private trade for milling, processing, and other uses.

Typically, the government distributes whole wheat through the PDS, other government programs, or on the open market to either be custom milled by households for home use, and/or milled for food processors and institutional buyers. Most of the wheat retained by farmers (about 45-50 percent) is custom-milled in the local flour mills (*chakkies*- small stone grinding units) for home consumption, with small quantities (15-20 percent) ground for feed use (mainly for milking/lactating cows and buffaloes). Most of the organized millers produce wheat flour and *atta* for the hotels, restaurants, and HRI sector, and a small share distribute to consumers in branded packs. Market sources report that demand for packaged and branded flour is growing at 10-15 percent, annually, on growing consumption by semi-urban and urban consumers.

Government Procurement and Offtake

Back-to-back record harvests and high government MSP supported MY 2019/20 government wheat procurement of 34.13 MMT, lower than the previous year's procurement of 35.8 MMT. Based on the expected upcoming bumper harvest, the GOI has set the MY 2020/21 procurement target at 36.7 MMT, but actual procurement is likely to exceed 38 MMT.



Source: Food Corporation of India, GOI, and FAS/New Delhi forecast for MY 2020/21

Procurement is likely to be higher than last year in most growing states. The GOI is likely to procure most of the wheat in Punjab and Haryana, as higher local taxes (cess) compared to other states continue to preclude purchases by private trade. Reports suggest that other producing states like Madhya Pradesh, Uttar Pradesh, and Rajasthan are also gearing up for higher procurement given the relatively lower current open market prices compared to MSP.

The Food Corporation of India (FCI) and state governments are likely to face a shortage of storage capacity given the expected record wheat procurement, particularly in the major procuring states of Punjab, Haryana, Madhya Pradesh, Uttar Pradesh and Rajasthan. With FCI's current covered storage capacity estimated at around 75 million tons, total wheat and rice stocks by the end of June 2020 are likely to swell above 95 MMT. Consequently, more than 20 MMT of procured wheat stocks are likely to be kept under open storage structures (covered by tarpaulin sheets on wood plinth). Storage under these conditions results in significant losses due to seasonal monsoon rains, temperature fluctuations, rodents/pests, and pilferage and, thus, the government will be under pressure to reduce stocks to manageable levels.

Table 2. India: Government Wheat Procurement, Offtake and PDS Price

Marketing Year	Production	GOI Procurement[1]	MSP	GOI Total Cost	Offtake from GOI Stocks	PDS Issue Price		
(Apr–Mar)	(Million Tons)	(Million Tons)	Rs. per ton	Rs. Per ton	(Million Tons)	Rs. per ton		
						APL	BPL	AAY/NFSA
2005/06	68.64	14.79 (21.6)	6,400	10,419	16.71	6,100	4,150	2,000
2006/07	69.35	9.23 (13.3)	7,000	11,778	11.88	6,100	4,150	2,000
2007/08	75.81	11.13 (14.6)	8,500	13,118	12.25	6,100	4,150	2,000
2008/09	78.57	22.69 (28.9)	10,000	13,806	14.89	6,100	4,150	2,000
2009/10	80.68	25.38 (31.5)	10,800	14,246	22.38	6,100	4,150	2,000
2010/11	80.80	22.51 (27.8)	11,000	14,944	23.07	6,100	4,150	2,000
2011/12	86.87	28.34 (32.6)	11,700	15,953	24.27	6,100	4,150	2,000
2012/13	94.88	37.92(40.0)	12,850	17,526	33.24	6,100	4,150	2,000
2013/14	93.51	25.09(26.8)	13,500	19,083	30.61	6,100	4,150	2,000
2014/15	95.85	28.02(29.2)	14,000	20,512	27.16	6,100	4,150	2,000
2015/16	86.53	28.09(32.5)	14,500	21,274	31.57	6,100	4,150	2,000
2016/17	87.00	22.96(26.4)	15,250	21,970	29.25	na/2	na/2	2,000
2017/18	98.51	30.82(31.3)	16,250	22,979	25.30	na/2	na/2	2,000
2018/19	99.87	35.80(35.8)	17,350	23,597	31.65	na/2	na/2	2,000
2019/20	103.60	34.13(32.9)	18,400	26,800	26.50/3	na/2	na/2	2,000
2020/21	105.00/3	38.00(36.2)/3	19,250	26,838/4	32.00/3	na/2	na/2	2,000

Source: Ministry of Agriculture and Farmers Welfare, Food Corporation of India, and GOI Budget.

Notes

Exchange rate INR 73.90 = US$ 1 on March 17, 2020

APL - Above Poverty Line

BPL - Below Poverty Line

AAY - Poorest of Poor

NFSA - National Food Security Act

1/: Figure in parenthesis is GOI procurement as percentage of total food production

2/: NFSA implemented in most states replacing APL/BPL by end of 2015

3/: FAS/New Delhi Estimate

4/: GOI budget estimate

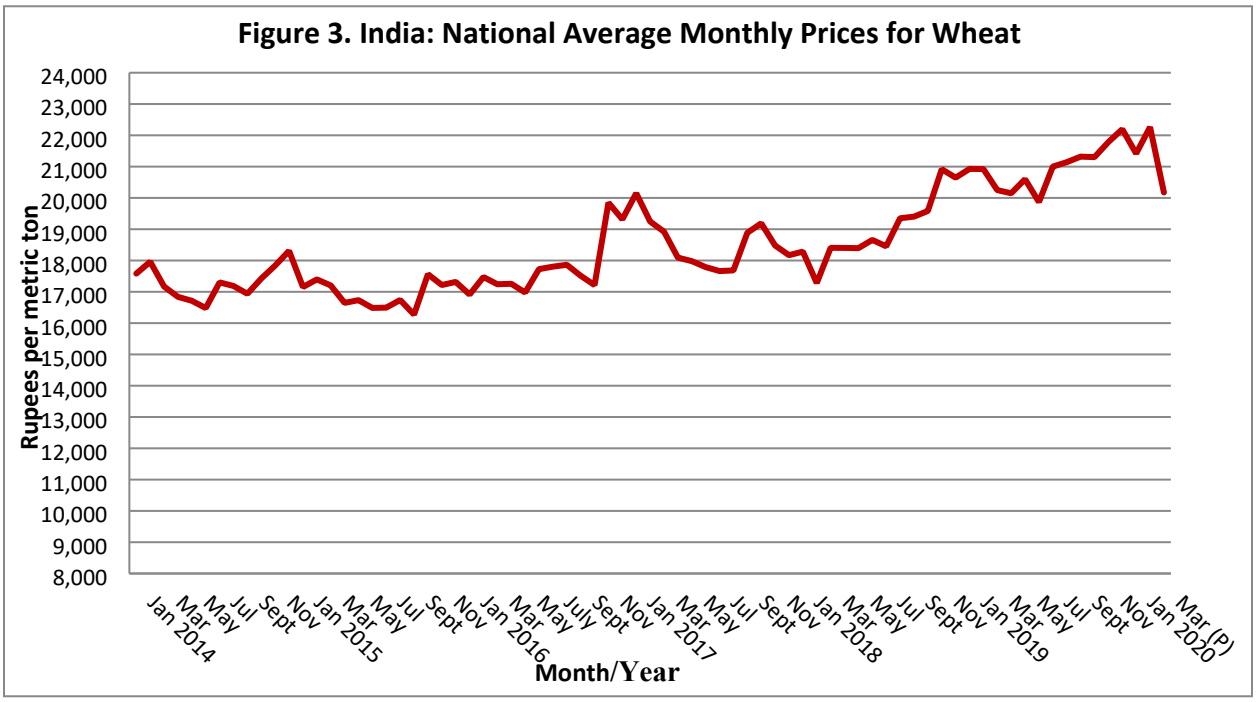
Over the last decade, the cost to the GOI for procuring wheat has climbed by nearly 80 percent due to increasing MSP, and overhead on procurement, storage, and distribution systems. Meanwhile, wheat sales prices under various food security programs have remained unchanged from the levels fixed in 2002. The National Food Security Act (NFSA) 2013 creates an entitlement for eligible beneficiaries (50 percent and 75 percent of the urban and rural populations accounting for about 2/3rd of the population). Per the Act, target beneficiaries receive 5 kilograms of rice, wheat, or coarse grain (millet) at highly subsidized prices of INR 3 (4.1 U.S. cents), INR 2 (2.7 U.S. cents) and INR 1 (1.3 U.S. cents) per kilogram, respectively. The government annually distributes over 24 MMT of wheat under the NFSA and other food security programs.

GOI wheat sales under the OMSS to private traders are estimated at over 8.2 MMT in MY 2018/19, compared to 1.4 MMT in MY 2017/18. However, OMSS sales in MY 2019/20 declined sharply due to the GOI's higher OMSS sale prices (IN9049). With the intention of linking OMSS prices with MSP, in April 2019 FCI raised the OMSS base price for the first quarter of MY 2019/20 to INR 20,800 ($281), per MT, with an increment of INR 550 ($7.4), per MT, over the next three quarters. This is a substantial increase over last year's base of INR 19,000 ($257), per MT, and a quarterly increment of INR 250 ($3.40), per MT. Due to the weak offtake under OMSS, in January 2020 FCI withdrew the proposed increase for the last quarter, but there has not been any significant offtake even in the last quarter. As such, the current pace of offtake under OMSS in MY 2019/20 is likely to barely reach 4.0 MMT.

Domestic Prices

Despite record harvests, domestic wheat prices remained firm after September 2018, bouyed by the government's OMSS prices.

Figure 3. India: National Average Monthly Prices for Wheat



Source: Agmarket News, MoAFW, GOI.

With the forecast bumper harvest and FCI indicating easing OMSS sale prices in the future, domestic prices eased sharply in March. Spot prices in March in the major producing states ranged between INR 18,400 ($248) to INR 20,000 ($270), per MT, just around the GOI's MSP of INR 19,250 ($260), per MT, for MY 2020/21. Market sources report that future transactions for new crop deliveries are already being made around INR 18,000-18,500 ($244-250), per MT. Private traders expect prices to come down, as the GOI is likely to try disposing 'burdensome' wheat at subsidized prices during the upcoming marketing season.

Table 3. India: Commodity, Wheat, Prices Table

Prices In	Rupees	per uom	metric tons	
Year	**2018**	**2019**	**2020**	**%Change**
Jan	18,284	20,927	21,418	2.3
Feb	17,280	20,921	22,264	6.4
Mar	18,406	20,249	20,175	-0.4
Apr	18,402	20,149		
May	18,396	20,598		
Jun	18,658	19,868		
Jul	18,454	21,001		
Aug	19,350	21,141		
Sep	19,402	21,319		
Oct	19,583	21,303		
Nov	20,917	21,784		
Dec	20,648	22,195		
Exchange Rate	73.90	Local Currency/US$		
Date of Quote	03/17/2020	MM/DD/YYYY		

National Average Monthly Wholesale Price of Wheat
Source: Agmarket News, MoAFW, GOI.

TRADE

India's wheat imports ground to a halt after the GOI raised the import duty to 30 percent (see IN 8064) in May 2018, and then to 40 percent in April 2019 (IN9049), shutting-out most trade. Consequently, imports of wheat and wheat products in MY 2020/21 are forecast at only 25,000 MT, reflecting mostly small quantities of wheat products like pasta for high-end consumer markets

Despite the fourth consecutive upcoming record wheat harvest and large government-held wheat stocks, Indian wheat is not export-competitive due to high MSP-driven domestic prices compared to international prices. However, if domestic prices weaken after the arrival of the new crop, some Indian wheat may find a market in neighboring countries. Assuming relatively weak domestic prices, no significant change in the value of the Indian rupee vis-a-vis other currencies or the GOI's wheat export policy, MY 2020/21 wheat exports are forecast higher at 1.0 MMT, reflecting expected higher sales to neighboring Nepal, Bangladesh, and Sri Lanka, and higher wheat flour exports to traditional African and Middle Eastern markets. Post also forecasts that exports may increase if the ongoing Covid-19 crisis leads to a disruption in the global food supply, which would allow the GOI to use some of its excess wheat stocks to meet the needs of neighboring countries as government-to-government humanitarian aid.

Provisional official figures from the Trade Data Monitor (TDM) for MY 2019/20 estimate wheat and wheat product imports during April through December 2019 at 22,300 MT, mostly wheat products. Consequently, MY 2019/20 imports have been revised higher to 25,000 MT. Based on the latest TDM data, MY 2018/19 imports are also revised higher to 26,000 MT.

Based on the latest available official wheat and wheat product export figures derived from the TDM, trade year 2018/19 exports are revised higher to 515,000 MT.

Table 4. India: Commodity, Wheat[1], Export Trade Matrix

Time Period	April-March	**Units**	Tons
Exports for	MY 2018/19		MY 2019/20[2]
U.S.	24	U.S.	39
Others		**Others**	
Nepal	181,079	Nepal	111491
Bangladesh	22,684	Bangladesh	32728
UAE	7,157	UAE	6120
Somalia	4,589	Somalia	3212
Sri Lanka	2,467	Sri Lanka	1439
Malaysia	1,586	Korea	1000
Afghanistan	1,353	Jordan	938
UK	1,233	Reunion	844
Jordan	919	Malaysia	763
Kuwait	700	Uganda	305
Total for Others	**223,767**	**Total for Others**	**158,840**
Others not Listed	2,837	Others not Listed	1,352
Grand Total	**226,628**	**Grand Total**	**160,231**

Source: Directorate General of Commercial Intelligence and Statistics (DGCIS), GOI
[1] Does not include wheat product
[2] Provisional data for the period April 2019 through December 2019

Table 5. India: Commodity, Wheat[1], Import Trade Matrix

Time Period	April-March	**Units**	Tons
Imports for	MY 2018/19		MY 2019/20[2]
U.S.	0	U.S.	0
Others		**Others**	
Pakistan	2,000	Australia	1,590
UK	744	Sri Lanka	48
Total for Others	**2,746**	**Total for Others**	**1,665**
Others not Listed	0	Others not Listed	0
Grand Total	**2,746**	**Grand Total**	**1,665**

Source: Directorate General of Commercial Intelligence and Statistics (DGCIS), GOI
[1] Does not include wheat product
[2] Provisional data for the period April 2019 through December 2019

Tariffs

Since April 2019, India has imposed an import tariff of 40 percent on wheat (HS1001). There has been no change in the applicable tariffs on other wheat products in the recent past, which continue to remain at 30 percent.

Besides the basic custom duty, imports of wheat and wheat products incur the regular Social Welfare Surcharge of 10 percent of the basic duty, and an additional GST duty of 12 percent equivalent to the local sales tax. See below the applicable import tariff table for wheat and wheat products.

Table 6: Import Tariffs on Wheat and Wheat Products

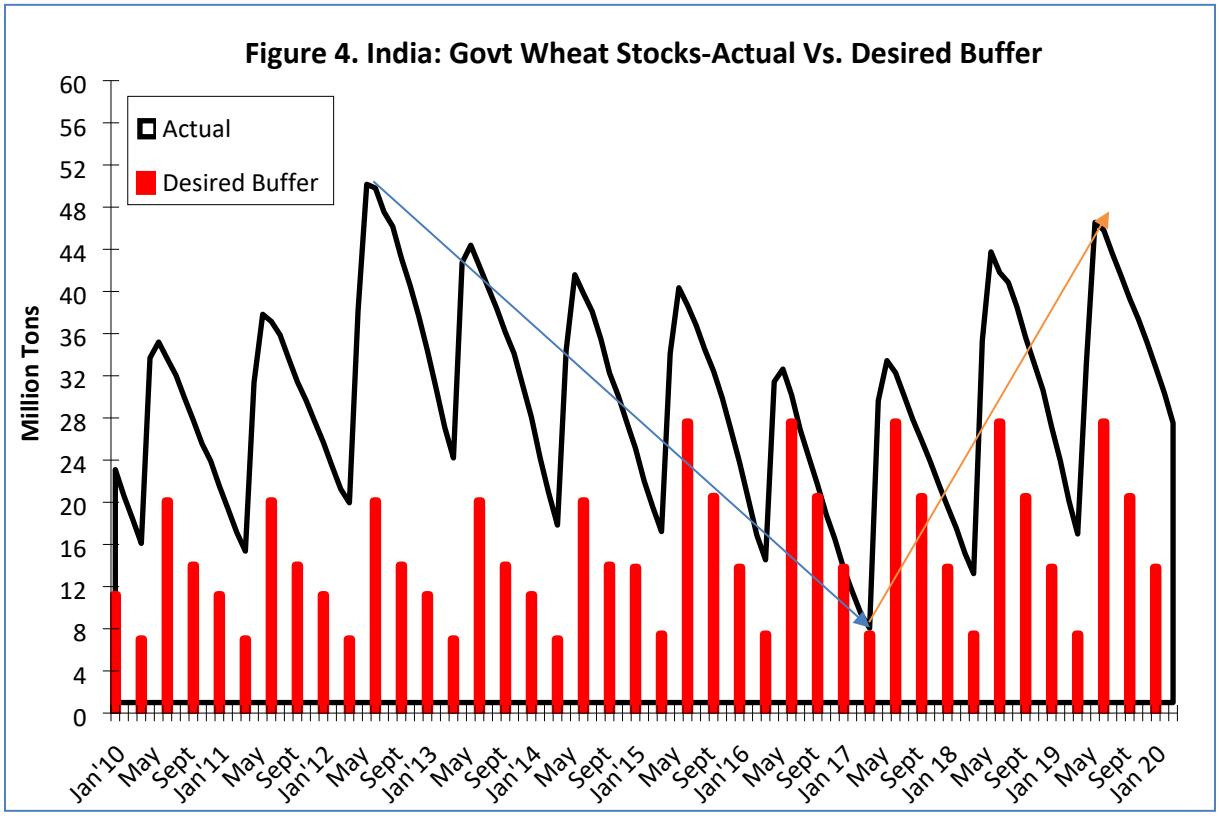
HS Code	Description	Basic Duty (BD) on Assessable value	Social Welfare Surcharge (SWS) on BD	Integrated GST (IGST) on AV+BD+SWS	Total Effective Duty (BD+SWS+IGST)
10011900	Wheat	40 percent	10 percent	Nil	44 percent
10019920	Meslin	100 percent	Nil	Nil	100 percent
1101	Wheat and Muslin Flour	30 percent	10 percent	Nil	33 percent
190219	Uncooked pasta, not stuffed or otherwise prepared not containing eggs	30 percent	10 percent	12 percent	48.96 percent
190230	Other Pasta	30 percent	10 percent	12 percent	48.96 percent
190240	Couscous	30 percent	10 percent	12 percent	48.96 percent

Exchange rate on March 17, 2020 1US$= INR 73.90

After removing the export ban on wheat on September 9, 2011, the GOI has not imposed any further restrictions, such as export tariffs or taxes, on Indian wheat and wheat product exports.

STOCKS

Relatively strong government procurement and weak offtake has further swelled government wheat stocks in MY 2019/20. As of March 1, 2020, GOI wheat stocks were officially estimated at 27.5 MMT, compared to 20.11 MMT during the same time last year, reflecting relatively weak offtake of wheat under the OMSS scheme. Assuming normal offtake of wheat in March 2020, MY 2019/20 wheat ending stocks are estimated higher at 24 MMT, more than 7 MMT higher than last year, and more than three times that of the government's minimum buffer stock norm of 7.5 MMT.



Source: Food Corporation of India, GOI

Forecast higher government wheat supplies (higher opening stocks and forecast record procurement), will force the GOI to aggressively push more wheat in the upcoming marketing year through various food security programs and open market sales to bring stocks to manageable levels. Nevertheless, GOI-held wheat stocks are likely to further swell in MY 2020/21, with ending stocks forecast at 28.5 MMT.

Estimates of privately held wheat stocks are not available but are not expected to exceed pipeline stocks due to provisions in the Essential Commodities Act. The PS&D table does not include privately held stocks.

Policy

Research & Development

With more than half of India's population depending on agriculture for their living, and nearly one-fourth of the population still living below the poverty line, food security remains a high priority for the GOI and state governments. Among all of the food crops produced across the country, wheat and rice remain the cornerstone of India's food security policy. Therefore, the GOI and various state governments allocate significant funding to support research, development, and extension activities to educate farmers about new varieties and improved production technologies (e.g., seed, pest management) for these crops. NARS conducts wheat research and development at national and state levels, which is complemented by various agricultural extension agencies at the regional and state levels. Central and state governments also support

farmers by subsidizing inputs (water, fertilizer, seed, power, irrigation, and chemicals), and by offering agricultural credit at affordable prices for various crops such as wheat.

Price Support

The GOI's major market intervention program to address food security concerns is driven by two engines – (i) government MSP procurement of select agricultural crops to ensure remunerative prices to the farmers, and (ii) distribution of food procured under MSP through the PDS and other programs to ensure food security at affordable prices for vulnerable segments of the Indian population. The GOI establishes the MSP for wheat and various others crops on the recommendations of the Commission for Agricultural Costs and Prices (CACP). On February 1, 2018, the GOI announced the policy that the MSP would be at least 1.5 times the cost of production in future.

Government parastatals like FCI and various state marketing agencies have the mandate to procure wheat (and rice) at MSP for central government stocks. Subsequently, the government allocates wheat for distribution through the PDS and other welfare programs at a subsidized price. In years of surplus procurement and stocks, the government also sells wheat in the open market to the private trade to stabilize open market prices.

Trade Policy

High tariffs aside, India's phytosanitary requirement that a wheat sample drawn from a single consignment not contain more than 100 quarantine seeds (31 quarantine seeds have been specified), per 200 kg, and other SPS issues have effectively barred U.S. wheat shipments to India.

Marketing

India is an erratic participant in the international wheat market, importing wheat when domestic supplies are depressed and exporting wheat when international prices are favorable. Current burdensome domestic supplies are likely to keep India out of the import market in MY 2020/21 and the near future. However, India's growing bakery/confectionary industry and western-style fast food sector is expected to fuel demand for small, but consistent, quantities of high-protein wheat imports in the next three to five years. The rapidly growing fast food and modernizing bakery/confectionary industries generate demand for specialty flours (used in pizzas and burger buns) that require different wheat classes that are not produced locally. However, U.S. wheat continues to be deprived of market access to India, despite numerous bilateral discussions.

RICE

Table 7. India: Commodity, Rice, Milled, PSD

(Area in thousand hectares and quantity in thousand metric tons, Yield in MT/Hectare)

Rice, Milled	2018/2019		2019/2020		2020/2021	
Market Begin Year	Oct 2018		Oct 2019		Oct 2020	
India	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	43800	44160	44000	43800	0	44000
Beginning Stocks	22600	22600	29500	29500	0	35000
Milled Production	116480	116480	118000	118000	0	117000
Rough Production	174737	174737	177018	177018	0	175518
Milling Rate (.9999)	6666	6666	6666	6666	0	6666
MY Imports	0	0	0	0	0	0
TY Imports	0	0	0	0	0	0
TY Imp. from U.S.	0	0	0	0	0	0
Total Supply	139080	139080	147500	147500	0	152000
MY Exports	10420	10490	10500	10500	0	12000
TY Exports	9790	9870	10500	10500	0	12000
Consumption and Residual	99160	99090	102000	102000	0	108000
Ending Stocks	29500	29500	35000	35000	0	32000
Total Distribution	139080	139080	147500	147500	0	152000
Yield (Rough)	3.9894	3.9569	4.0231	4.0415	0	3.989

PRODUCTION

MY 2020/21 Outlook

Assuming normal weather conditions and southwest 2020 monsoon (June-September 2020), India's MY 2020/21 rice production is forecast at a near record 117 MMT from 44 MHa, with a trend yield of 4.0MT/Ha for rough rice. Rice growers in MY 2019/20 realized good returns as an excellent 2019 monsoon supported record yields and lower costs of cultivation. In production areas where rice and other crops thrive, farmers will continue to plant rice as their first choice due to the expectation of a further increase in the GOI's MSP, and the continuation of government procurement operations in the upcoming season. Given that about 40 percent of rice production in India is unirrigated, the timely and well-distributed 2020 monsoon across the country and crop season will be critical to realizing the forecast area planted and yields. Delayed, erratic, or a below normal monsoon across major growing regions during planting and critical growth stages could lower the forecast harvest by 5-10 MMT, while timely, adequate, and well-distributed rains could augment forecast production by 2-3 MMT.

MY 2019/20 Record Production

MY 2018/19 rice production is estimated at a record 118 MMT from 43.5 MHa, with record yields due to excellent 2019 monsoon rains and generally favorable weather conditions in major growing states. The timely onset of the monsoon in June and sufficient rains through August supported planting of rice across

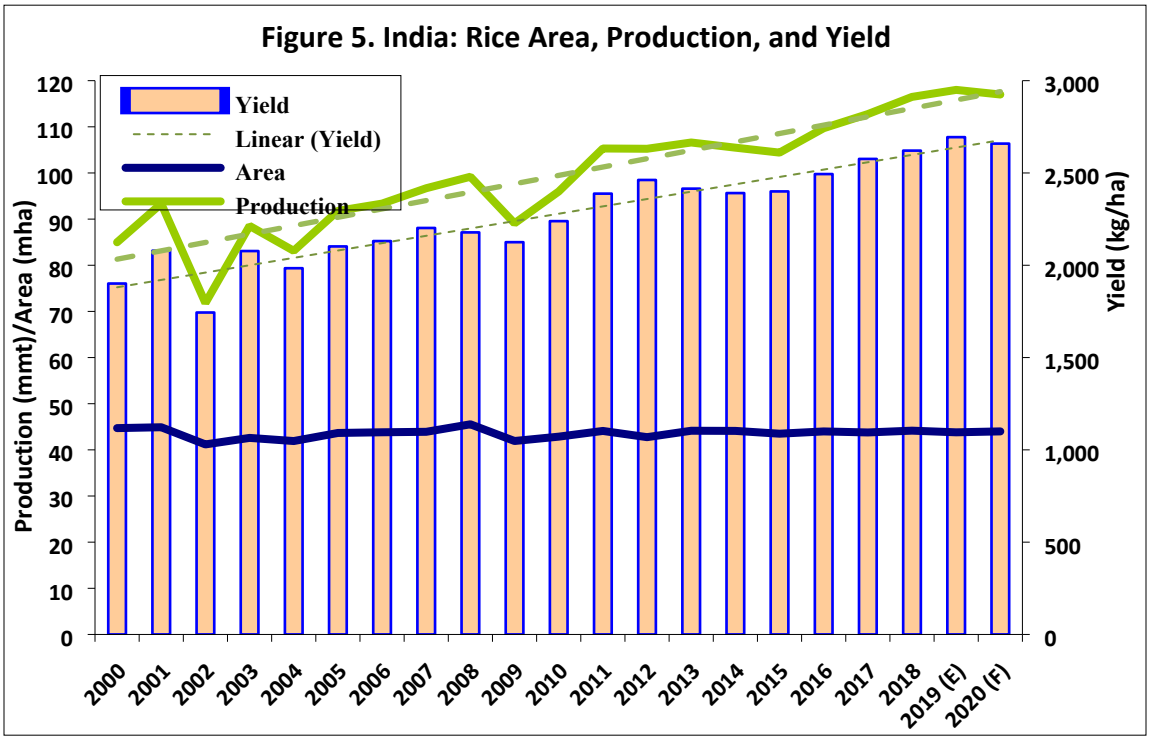
major rice growing areas, particularly in largely unirrigated peninsular and southern India. Good late monsoon rains (August-October) supported growth and maturity of *kharif* (fall harvested) rice, and favorable planting conditions for *rabi* (winter planted) rice. The absence of floods in eastern India, cyclones in southern India, and no major incidence of pest or disease also contributed to record *kharif* rice yields.

MoAFW's second advance estimate reported *rabi* rice planting at 4.47 million hectares, compared to 4.19 million hectares last year. Sufficient reservoir water in southern India supported *rabi* rice growth and the planting of summer rice (February/March planted). Consequently, Post estimates MY 2019/20 rice production at 118 MMT (102.4 MMT *kharif* and 15.6 MMT *rabi*), compared to last year's total production of 116.5 MMT (102 MMT *kharif* and 14.5 MMT *rabi*). Post's estimate is marginally higher than MoAFW's ICY 2019/20 second advance estimate of 117.47 MMT (typically subject to future revisions).

Production Trends

Rice is the most important staple crop cultivated across the country, and accounts for more than 40 percent of the country's food grain production. Predominantly a *kharif* season crop, rice requires significant water for transplanting and during major growth stages. Although 60 percent of India's rice area is irrigated, planting of the *kharif* rice crop closely follows the onset of the southwest monsoon in June/July, and its progress through September helps critical crop growth stages. There is a small *rabi* rice crop cultivated in the irrigated eastern and southern states of West Bengal, Odisha, Andhra Pradesh, Telangana, and Tamil Nadu.

Figure 5. India: Rice Area, Production, and Yield



Source: MoAFW, GOI; and FAS/New Delhi for 2019(MY 2019/20) and 2020(MY 2020/21).

Similar to India's wheat production, Indian rice production has also been above the trend line in the past four years due to increasing yields. In the last decade, planted rice acreage has plateaued at around 44 MHa, due to increasing demand for land from urbanization and high value crops. Nevertheless, production has grown steadily in recent years from increasing yields due to new and improved varieties, better agronomic practices, and expansion of irrigation facilities. Various GOI programs, including the National Food Security Mission and other crop specific programs, have enabled steady productivity gains in the lower yielding eastern and southern states. However, India's overall rice yields are still well below the world average, with wide variations in productivity among the major producing states and across the country. Analysts suggest that there is further room for increasing rice productivity in the country by expanding irrigation facilities and further improving the development and adoption of newer varieties and technology.

NARS works across the country on developing new rice varieties/hybrids and crop management practices for improving yields and/or tackling common pests/diseases for various agro-climatic conditions. The private sector is active in developing technology for the market, particularly through hybrid seeds and chemicals to control common pests and diseases. However, agricultural experts are concerned about the sustainability of the current rice production systems in several states. Various rice-growing states like Punjab, Haryana, Uttar Pradesh, Andhra Pradesh, West Bengal, Orissa, and Chhattisgarh follow intensive rice-based cropping systems (rice-wheat or rice-rice). These cropping systems are very water-, fertilizer-, and chemical-intensive, leading to deteriorating soil health, declining water tables, and the emergence of new resistant diseases/pests in several of these states. In recent years, the GOI and several state governments have promoted crop diversification from rice to less water-intensive crops like corn, pulses, and horticultural crops. At the same time, the GOI continues to focus on rice and wheat procurement via MSP for its food security programs, which help stabilize market prices compared to alternative crops and lower market risk to growers. Consequently, and if the MSP system continues, a significant shift away from rice planting is not imminent in the near future due to the lack of more profitable and/or lower-risk crop alternatives.

Global warming and climate change issues may also affect the future of rice cultivation in India. India has a vast coastline and a significant share of the rice crop is cultivated in regions susceptible to a potential rise in sea levels due to global warming. Reported glacier melt may also affect the irrigation water supply from perennial rivers originating in the Himalayas in the northern and eastern states. Experts also attribute recent monsoon aberrations, such as intermittent short and heavy rains followed by prolonged dry spells—and both of which affect rice cultivation—to climate change. NARS is working actively on climate change issues related to rice cultivation, including developing saline-tolerant rice cultivars.

Basmati (long grain) Rice

India's globally popular long-grain aromatic *Basmati* rice is exclusively grown in the northern Indian states of Punjab, Haryana, West Uttar Pradesh, Uttarakhand, and Himachal Pradesh. The high yielding *PUSA Basmati 1121* variety introduced in 2003, and the shorter duration semi-dwarf *PUSA Basmati 1509* variety introduced in 2013, have supported strong growth in *Basmati* rice production in the last two decades. Today, these two varieties account for about 80 percent of the total basmati area planted in MY 2019/20. Due to strong export demand, *Basmati* rice prices in MY 2019/20 have increased (10-15 percent) compared to last year, supporting farmers' overall returns from the crop. Consequently, assuming normal 2020

monsoon and weather conditions, MY 2020/21 *Basmati* rice production is forecast higher at 9.8 MMT from 2.0 MHa, compared to 9.2 MMT from 1.9 MHa last year.

Hybrid Rice

Most hybrid rice is cultivated in eastern and central India, with the majority produced for the GOI's MSP program and for export (of cheaper rice) to Africa. While there are no reliable published statistics, market sources report that the area planted with hybrid rice last year was around 2.0 MHa. With state governments expanding MSP rice procurement operations in these non-traditional government-rice supplier states, farmers are increasingly adopting the higher yielding hybrids for government procurement against the traditional rice cultivars preferred by consumers.

There are about 60 hybrids developed by both private seed companies and public research organizations, but only 25-30 hybrids (mostly by private sector) are popular among farmers. Nevertheless, the growth in area planted to hybrid rice has been hampered by poor market acceptance due to its: (i) inability to cater to different consumer quality preferences; (ii) relatively low incremental yields compared to higher seed cost; and (iii) poor milling quality over traditional cultivars, resulting in lower prices for farmers.

Biotechnology

Several public and private sector organizations are working to develop transgenic rice varieties/hybrids to incorporate resistance to various pests, diseases, and abiotic stress, but commercialization of transgenic rice is still years away due to policy issues. Specifically, uncertainty about GOI policy regarding agricultural biotechnology, and indefinite delays in the regulatory approval system have severely constrained the advancement of transgenic rice research, thereby retarding product development for commercial release in both the private and public sectors (see Biotechnology Annual IN2019-0109). Consequently, several private seed companies and most public sector rice research organizations are increasingly focusing on marker-assisted breeding of rice.

CONSUMPTION

Rice consumption in MY 2019/20 is estimated at 102 MMT, about 3 percent higher than last year, reflecting increases in procurement of subsidized government rice under various food security programs to feed the growing population (1.2 percent per annum), and purchases of inferior quality/broken rice for animal feed and the distillery industry. Forecast surplus domestic supplies and 'more-than-sufficient' government grain (rice and wheat) stocks are likely to drive consumption higher next season. Consequently, MY 2020/21 consumption is forecast to increase by about 6 percent to 108 MMT as the government is likely to push more 'subsidized' government rice under PDS and other programs.

Over the last decade, the GOI has expanded various food security programs to ensure the supply of food, mainly rice, to the impoverished segment of the population. With the growing economy and expanding middle/upper class, consumers are increasingly replacing 'basic' food staples like rice with higher protein and more nutritional items such as pulses, meat, dairy, fruits, and vegetables. However, more than half of the population is still considered food insecure and needs government-subsidized rice and wheat to meet

daily food requirements. With more than sufficient food grain stocks, and increasing procurement, the government is likely to release more rice and wheat in the coming months to ease the storage crisis and likely food supply disruptions due to the ongoing global pandemic of Covid-19.

Food Use

Rice is the dominant staple food for about 70-75 percent of the Indian population, with the balance consuming rice with wheat, or other staple cereals, across the country. Due to varied consumer preference across regions and population classes, more than 4,000 rice varieties are grown in India. Since the vast majority (90 percent) of farmers are small (less than 2 hectares holding), about 45-50 percent of production is retained by farmers for their own consumption (locally milled) and seed use.

Most coarse grain rice production (mostly high yielding/hybrid rice) is procured by the government, with smaller quantities purchased by private trade for exports. Conversely, locally preferred rice cultivars are procured by private trade and primarily marketed in bulk and unbranded. A relatively small, but growing, share of rice is branded and marketed in consumer packaging. Long grain *Basmati rice* and other specialty/fragrant rice varieties are procured by millers for export, or domestic sales in bulk or branded/packaged rice in local markets.

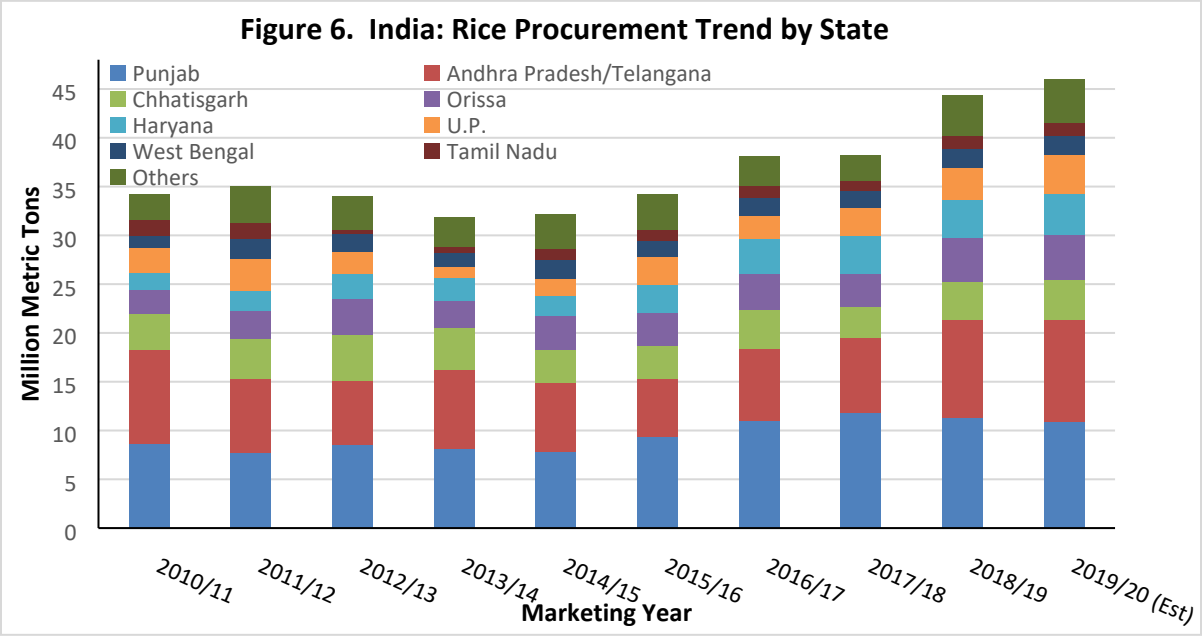
Feed Use

The livestock feed industry uses small quantities of broken rice and de-oiled rice bran as fillers in commercial feed. A small quantity of broken/damaged rice deemed unfit for human consumption is used for alcohol production, mostly by the potable liquor industry, and the by-product DDGS is sold to the feed industry. While there are no official or reliable industry estimates available for rice for feed consumption or industrial use, sources report increasing usage in recent years due to back-to-back bumper harvests, as well as the ability to sell milling by-products and waste for profit.

Procurement and Offtake for Government Programs:

Besides wheat, rice is the other important food grain for the GOI's food security programs, with the government procuring about 34-39 percent of total rice production in recent years. The GOI procures rice in various states, either by directly buying unmilled paddy rice from farmers through various agencies and having it custom milled, or imposing levies on private mills in other states. Until the late 1990s, most of the rice obtained under the GOI's MSP procurement program came through a mandatory levy on local millers at pre-established rates, called the "levy price," which was linked to the MSP of unmilled paddy rice plus milling costs. With the government raising the MSP significantly in recent years, local millers reduced their purchase of paddy rice for milling, forcing the government to procure paddy rice directly from the farmers at the MSP, and then have it custom-milled by private millers at government expense for storage and distribution through the PDS.

Figure 6. India: Rice Procurement Trend by State



Source: Food Corporation of India, GOI.

Riding on three consecutive record domestic harvests and increasing MSPs, government rice procurement has been very strong in the last few years. For MY 2019/20, the government raised the MSP for paddy rice by nearly 5 percent to INR 18,500 ($ 250), per MT, and set a procurement target of 42 MMT against last year's record procurement of 44.4 MMT. MY 2019/20 procurement has further shored-up relatively weak export demand compared to last year. Official sources estimate rice procurement through March 11, 2020 at 38.12 MMT, compared to 36.67 MMT during the same period last year. Most of the additional procurement over last year is accounted for by southern and eastern states, which received good monsoon rains. The pace of rice procurement is likely to remain steady for the rest of the marketing season due to the expected higher*rabi* harvest. Consequently, MY 2019/20 procurement is likely to cross a new record of 46 MMT.

Table 8. India: Government's Rice Procurement, Offtake and PDS Price

Marketing Year	Production	GOI Procurement[1]	MSP for Paddy (Unmilled Rice Common variety)	GOI Economic Cost	Offtake from GOI Stocks in Indian Fiscal Year (Apr/Mar)	PDS Issue Price		
(Oct-Sept)	(Million Tons)	(Million Tons)	Rs. per ton	Rs. Per ton	(Million Tons)	Rs. per ton		
						APL	BPL	AAY/NFSA
2005/06	91.79	27.58 (30.0)	5,700	13,036	23.99	7,950	5,650	3,000
2006/07	93.35	25.11 (26.9)	6,200	13,912	24.85	7,950	4,150	3,000
2007/08	96.69	28.74 (29.7)	7,450	15,499	25.21	7,950	4,150	3,000
2008/09	99.18	34.10 (34.4)	9,000	17,407	24.67	7,950	4,150	3,000
2009/10	89.09	32.03 (36.0)	10,000	18,201	27.64	7,950	4,150	3,000
2010/11	95.98	34.20 (35.6)	10,000	19,831	29.96	7,950	4,150	3,000
2011/12	105.30	35.04 (33.3)	10,800	21,229	32.05	7,950	4,150	3,000

2012/13	105.24	34.04 (32.3)	12,500	23,049	32.64	7,950	4,150	3,000
2013/14	106.60	31.85 (29.9)	13,100	26,155	29.20	7,950	4,150	3,000
2014/15	105.48	32.17(30.5)	13,600	29,436	35.57	7,950	4,150	3,000
2015/16	104.41	34.22(32.8)	14,100	31,255	32.13	7,950	4,150	3,000
2016/17	109.70	38.11(34.7)	14,700	31,050	33.71	na/2	na/2	3,000
2017/18	112.76	38.19 (33.9)	15,500	32,803	34.67	na/2	na/2	3,000
2018/19	116.48	44.40 (38.1)	17,500	34,441	34.23	na/2	na/2	3,000
2019/20	118.00/3	46.00(39.0)/3	18,350	37,481	35.00\3	na/2	na/2	3,000
2020/21	117.00/3	na	na	37,268/4	na	na/2	na/2	3,000

Source: Ministry of Agriculture and Farmers Welfare, Food Corporation of India, and GOI Budget.

Notes

Exchange rate INR 73.90 = US$ 1 on March 17, 2020

APL - Above Poverty Line

BPL - Below Poverty Line

AAY - Poorest of Poor

NFSA - National Food Security Act

1/: Figure in parenthesis is GOI procurement as percentage of total food production

2/: NFSA implemented in most states replacing APL/BPL by end of 2015

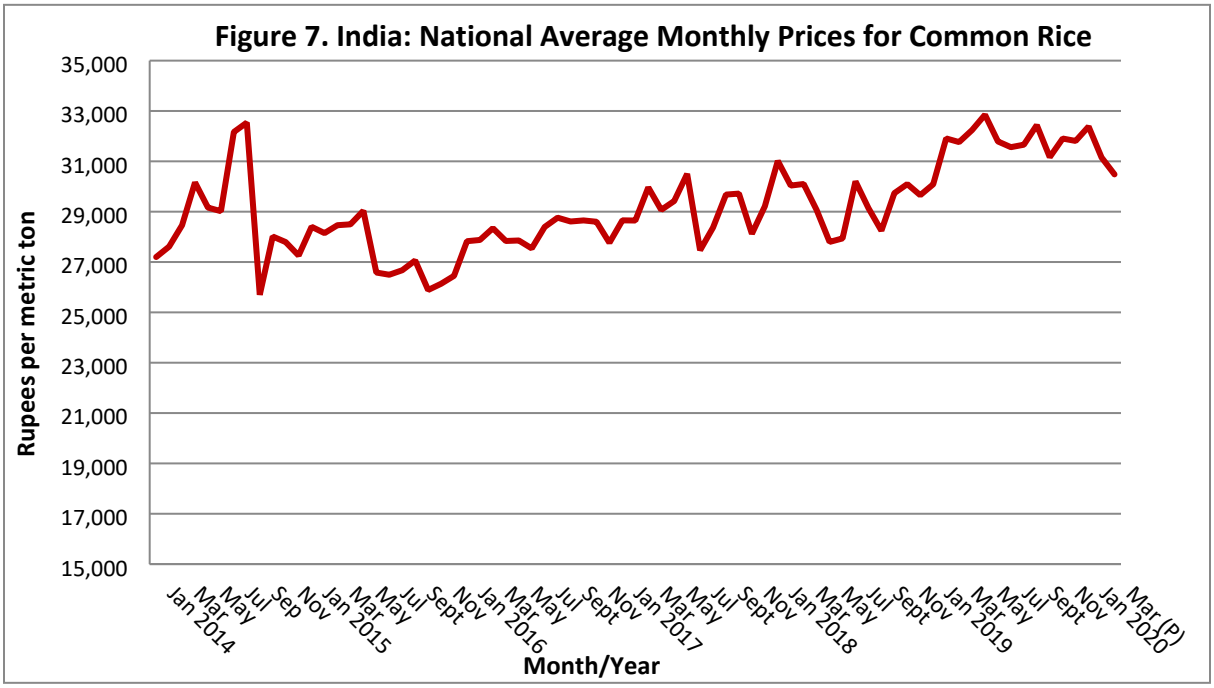
3/: FAS/New Delhi Estimate

4/: GOI budget estimate

Due to sufficient open market supplies, offtake of government rice during MY 2019/20 has been relatively steady, despite excess government food grain stocks. Market sources expect higher offtake in the second half of the marketing year, when the government will liquidate more rice to try to manage burgeoning grain stocks and dwindling storage. Recently, the GOI announced that it will supply an additional 5 kg food grain, per month (free of cost), in addition to the PDS quota (5kg per month), for the next three months to an estimated 800 million poor labor force affected by the GOI's 21-day lockdown announced on March 24, to slow the spread of Covid-19 in India. This will help offload an additional 12 MMT of food grain over the next three months, of which the majority will be rice. The GOI is likely to distribute more foodgrains (mostly rice and some wheat) later during the year to ensure sufficient food supplies for the labor force affected by Covid-19. As in the case of wheat, there has been no increase in the retail price of rice distributed through the PDS since July 1, 2002.

Prices

Despite the higher MSP, record harvests and weak export demand have kept MY 2019/20 domestic prices steady since the beginning of the season, with prices declining since January 2020 given expectations of another bumper rice harvest. Market prices during the second half of the season are likely to remain weak on the forecast record *rabi* harvest and higher offtake of government subsidized rice. Prices may potentially respond to export demand and international price movements during the balance of MY 2019/20.



Source: Agmarket News, MoAFW, GOI.

Table 9. India: Commodity, Rice, Milled, Prices Table

Prices In	Rupees	metric tons		
Year	**2018**	**2019**	**2020**	**%Change**
Jan	31,017	30,087	32,382	7.6
Feb	30,038	31,909	31,153	-2.4
Mar	30,099	31,764	30,481	-4.0
Apr	29,066	32,241		
May	27,799	32,850		
Jun	27,937	31,789		
Jul	30,204	31,563		
Aug	29,141	31,660		
Sep	28,246	32,438		
Oct	29,736	31,166		
Nov	30,095	31,905		
Dec	29,656	31,810		
Exchange Rate	73.90	Local Currency/US$		
Date of Quote	03/17/2020	MM/DD/YYYY		

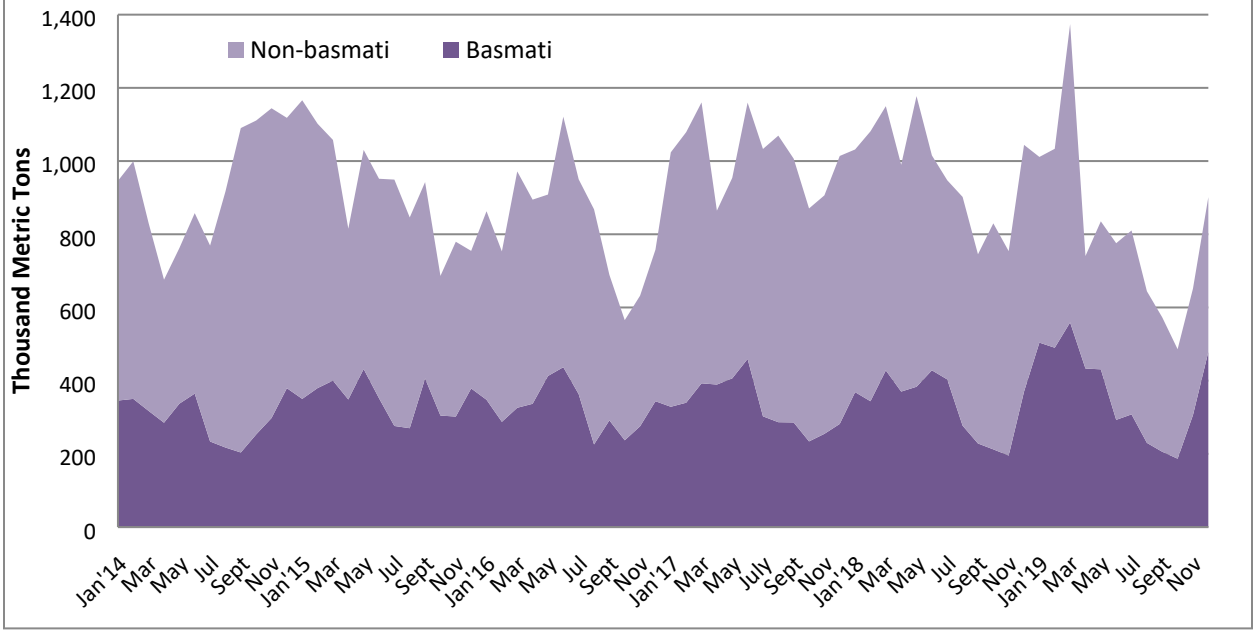
National Average Monthly Wholesale Price of Common Rice
Source: Agmarket News, MoAFW, GOI

TRADE

India has been the world's leading rice exporter since the GOI removed the export ban on coarse grain rice in 2011. However, increases in MSP have influenced domestic prices, and the relatively stable value of the Indian rupee vis-à-vis other currencies has impacted export demand for rice since the second quarter of calender year (CY) 2019. However, market sources report improved export demand due to better price parity for Indian rice vis-à-vis rice from competing origins since the beginning of CY2020 due to lower domestic prices and a decline in the value of the Indian rupee vis-à-vis the U.S. dollar. Consequently, rice exports in MY 2020/21 are forecast to recover to 12 MMT (7.5 MMT coarse rice and 4.5 MMT *Basmati* rice) from an estimated 10.5 MMT the previous year, on expected sufficient exportable supplies. However, relative price movements in the international market and/or changes in the value of the Indian Rupee vis-à-vis other currencies may affect the forecast export. With expected sufficient production and 'more-than-desired' government grain stocks, the GOI is unlikely to impose any export restrictions on rice exports, and may actually export some government rice through government-to-government arrangements if labor scarcity due to Covid-19 prompts global food shortages.

Based on the current pace of monthly exports, Post's MY 2019/20 export estimate is 10.5 MMT, reflecting relatively weak export demand for non-Basmati rice, particularly in the first quarter (Oct-Dec 2020).

Figure 8. India: Monthly Exports of Rice



Source: Monthly exports through December 2019 from Directorate General of Commercial Intelligence (DGCIS), GOI.

After the export subsidy benefit (5%) under the Merchandise Export Incentive Scheme (MEIS) terminated in March 2019, coarse rice exports have been slow since April 2019 due to relatively weak export demand from traditional African and neighboring markets on uncompetitive prices compared to other origins. However, exports of long grain *Basmati* rice have remained steady to traditional markets, including Iran, the Middle

East, and Europe. Provisional official estimates for rice exports in the first quarter of MY 2019/20 are estimated at 2.04 MMT, compared to 2.63 MMT during the same period last year.

Market sources report a recovery in export demand for coarse grain rice in traditional markets since December 2019, due to the weakening of domestic prices and decline in the value of the Indian rupee (declined from INR 69-70 to 1 U.S. dollar in the beginning of MY to current level of INR 73.9 to 1 U.S. dollar). Assuming current price parity for Indian rice for the remainder balance of the season, MY 2019/20 rice exports are estimated to reach 10.5 MMT (6 MMT of coarse rice and 4.5 MMT of *Basmati* rice).

Preliminary CY 2019 export figures from official data indicate export sales totaled 9.84 MMT, with a significant increase in exports to Iran and other Middle Eastern countries, and a decline in exports to neighboring Bangladesh, Sri Lanka, and African countries.

Table 10. India: Commodity, Rice, Milled, Export Trade Matrix

Time Period	Jan-Dec	**Units**	Tons
Exports for	CY 2018		CY 2019
U.S.	176,614	U.S.	180,311
Others		**Others**	
Iran	1,138,861	Iran	1,386,519
Saudi Arabia	1,004,148	Saudi Arabia	1,081,827
Bangladesh	987,544	Benin	675,117
Senegal	824,999	Nepal	673,170
Nepal	758,507	Iraq	512,236
UAE	621,567	UAE	470,073
Benin	602,478	Somalia	354,473
Guinea	462,036	Guinea	340,287
Cote D' Ivoire	431,088	Cote D' Ivoire	316,804
Iraq	419,631	Togo	309,604
Total for Others	**7,250,859**	**Total for Others**	**6,120,110**
Others Not Listed	4,486,294	Others Not Listed	3,563,001
Grand Total	**11,913,767**	**Grand Total**	**9,863,422**

Source: Directorate General of Commercial Intelligence and Statistics (DGCIS), GOI

Tariff

Table 11: Import Tariffs on Rice

HS Code	Description	Basic Duty (BD) on Assessable value	Social Welfare Surcharge (SWS) on BD	Integrated GST (IGST) on AV+BD+SWS	Total Effective Duty (BD+SWS+IGST)
10061090	Paddy Rice in Husk	80 percent	Nil	Nil	70 percent
100620	Husked (brown) rice	80 percent	Nil	Nil	80 percent
100630	Semi milled or wholly milled rice	70 percent	Nil	Nil	70 percent
100640	Broken Rice	80 percent	Nil	Nil	70 percent

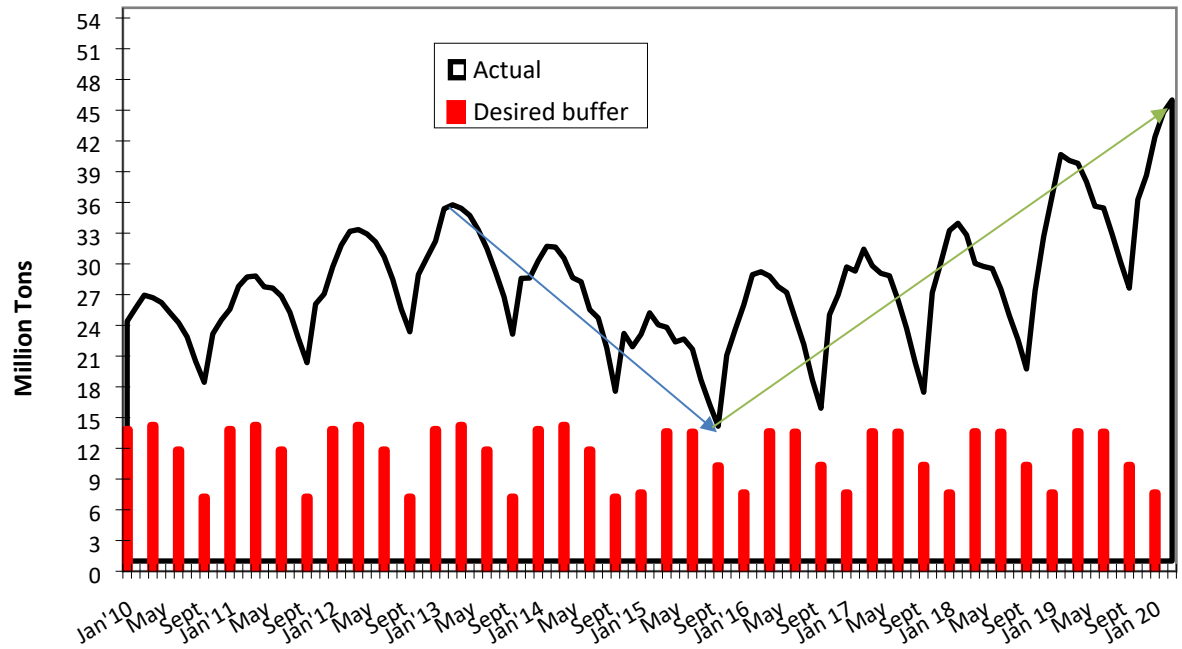
While there are no other applied/applicable taxes, social surcharge, or IGST, India's trade policy stipulates that rice imports have to be routed through the Food Corporation of India. In addition, the import of genetically modified rice in banned. The high import duty and restrictive import policy, coupled with competitive local rice prices and consumer preferences for local cultivars, has ruled out any Indian imports of rice in the recent past and near future.

Stocks:

India's rice stocks, which are largely government held, have been steadily growing over the last three years due to back-to-back record harvests and government procurement. There is no published information, official or otherwise, about privately-held rice stocks, but they are estimated to be in the range of 2.0 to 4.0 MMT, depending on the market situation.

Based on the latest government rice stock estimates, MY 2019/20 ending stocks are estimated at 35 MMT. MY 2020/21 ending stocks are forecast lower at 32 MMT on an expected stronger push by the GOI to off-load government rice to bring stocks down to more manageable levels, and forecast higher exports.

Figure 9. India: Govt. Rice Stocks-Actual Vs. Desired Buffer



Source: Food Corporation of India, GOI

Fueled by strong procurement, government rice stocks on February 1, 2020, were estimated at 44.8 MMT, over 4.1 MMT higher than last year stocks, and more than three times the government's peak desired buffer stocks (13.58 MMT on April 1). Assuming higher monthly offtake in the remaining marketing season and strong *rabi* rice procurement, MY 2019/20 government-held rice ending stocks are estimated at 32 MMT, more than 4.2 MMT higher than last year, and with an additional 3 MMT in private stocks.

POLICY

Production and Market Support:

The GOI and various state governments follow similar production and market support policies for rice and wheat (see WHEAT section). Given the broader coverage of rice compared to wheat due to higher acreage planted across more producing states, there are various rice-specific development schemes such as the Special Rice Development Program (SRDP) and Promotion of Hybrid Rice (price subsidies on seed). In addition, several state governments have also sponsored programs for rice growers, including input subsidies on rice transplanters and harvesters. Similar to wheat, the GOI undertakes price support, procurement, and distribution programs for rice.

Futures trading in rice has been banned since September 2007 due to food inflation concerns, as GOI policymakers believe that futures trading may lead to speculation in critical staple food items like rice.

Trade

India's existing trade policy imposes no export restrictions on rice, but imposes severe restrictions on imports, through high tariffs and other non-tariff measures (see Tariff section).

Marketing:

Indian high-quality *Basmati* rice competes with U.S. rice in several markets, including Middle Eastern countries and the European Union. Indian exports of *Basmati* rice and other specialty/fragrant rice to the United States have been rising in recent years, with demand driven mostly by consumers coming from India, the Middle East, and South Asia.

COARSE GRAINS
Corn
Millet
Sorghum
Barley

PRODUCTION

MY 2020/21 Outlook

Accounting for only 15 percent of the country's total cultivated area under irrigation, India's coarse grain production is critically dependent on the performance of the southwest monsoon. Assuming a normal 2020 monsoon and weather conditions during the *kharif* and *rabi* growing seasons, MY 2020/21 coarse grain production is forecast at 45.6 MMT, which is marginally higher than last year's harvest of 45.4 MMT, but lower than the MY 2017/18 record harvest (46.9 MMT). Forecast production is based on the trend yields for corn and other coarse grains, and the expected recovery in plantings of millet and sorghum due to firm domestic prices. However, the corn planting is forecast marginally lower due to an expected decrease in corn prices reflecting weakened demand by the domestic poultry industry.

Favorable weather conditions (well-distributed rains and low temperatures during December through March) will support a record MY 2020/21 (April/March) barley crop, which will be harvested in April. The MY 2020/21 coarse grain production forecast includes 28 MMT of corn, 11 MMT of millet, 4.5 MMT of sorghum, and 1.85 MMT of barley. However, in case of an erratic or weak 2020 monsoon, other weather aberrations (flood/cyclone), or any outbreaks of pest or disease in the upcoming season, the forecast could lower significantly for corn and other coarse grains.

MY 2019/20 Performance

Post estimates MY 2018/19 total coarse grain production at a near-record 45.4 MMT. This is significantly higher than last year's weak 2018 monsoon-affected harvest of 43.2 MMT, reflecting higher planting and yield prospects for most coarse grains as a result of the excellent 2019 monsoon, especially in central and western India.

Planting of most *kharif* coarse grains (corn, millet, and sorghum) commenced under favorable conditions due to timely monsoon rains in June, which finished at the end of July on a normal planting schedule. Sufficient rains in August/September provided favorable conditions to the standing crop during the vegetative growth and other critical crop stages, and further boosted yield prospects. Also, and in spite of widespread incidence of fall armyworm (FAW -*Spodopterafrugiperda*), which was first observed in 2018 in the Indian subcontinent, favorable weather and government-initiated control measures contained potential crop losses in 2019.

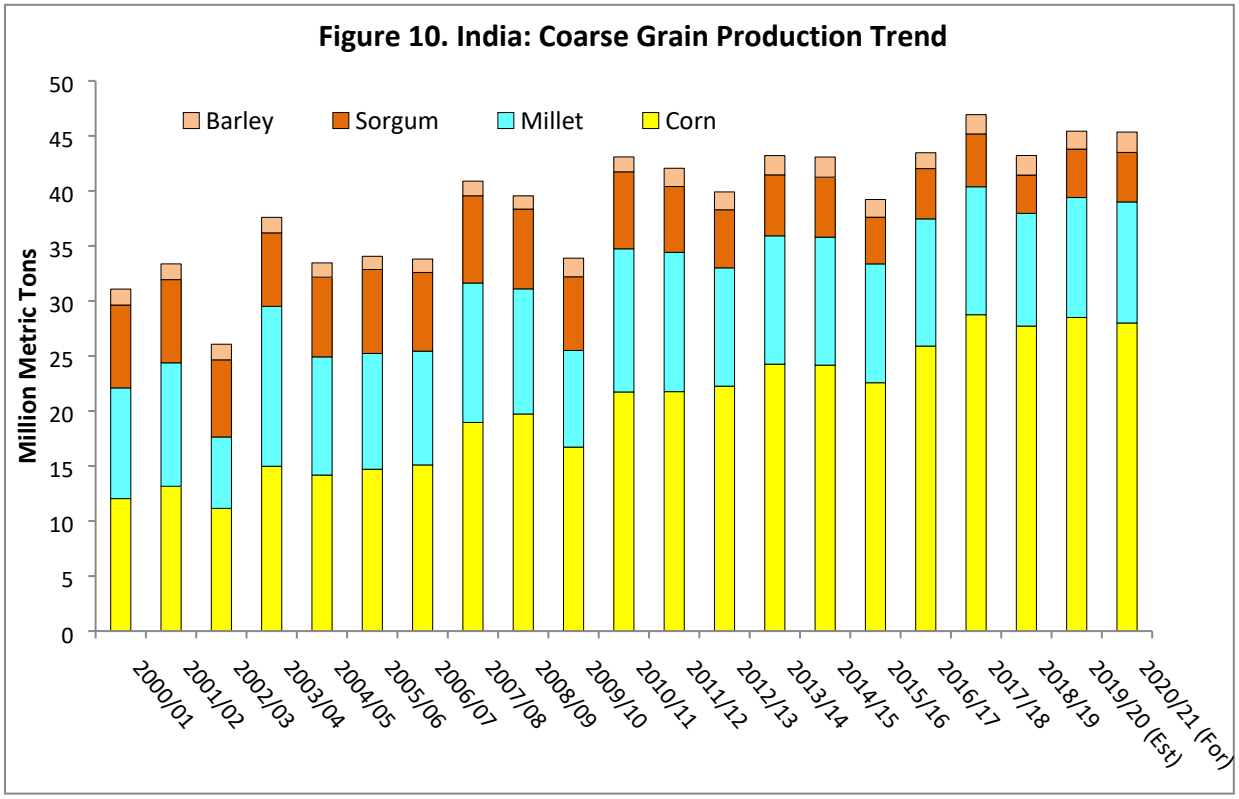
Field sources reported incidence of FAW in corn, and some sorghum and millet fields, across major growing states in MY 2019/20 during both the *kharif* and *rabi* seasons. Fortunately, the GOI, in tandem with various state governments, closely monitored the pest and promoted broad control measures. Further, periodic heavy rains during July-September also helped contain FAW spread, and mitigated damage in affected areas. However, concern remains that now that FAW is established in the Indian sub-continent, it is positioned to negatively affect various crops, including corn, if weather conditions are favorable (longer dry spell) during crop growth stages.

The MY 2019/20 coarse grain production estimate of 45.4 MMT includes a near-record 28.5 MMT of corn (vs. 27.7 MMT last year), 10.9 MMT of millet (vs. 10.2 MMT last year), 4.4 MMT of sorghum (vs. 3.5 MMT last year), and a record 1.85 MMT of barley (vs. 1.63 MMT last year).

More than three-fourths of India's coarse grain production is cultivated during the *kharif* season (corn, sorghum and millet), with the balance cultivated in the *rabi* season (corn, sorghum, and barley). *Kharif* planting and productivity is critically dependent on the performance of the southwest (June-September) monsoon, while the *rabi* harvest depends on residual moisture from the southwest (June-September) monsoon, the productivity of the northeast (October-November) monsoon, and winter temperatures and rains.

Production Trends:

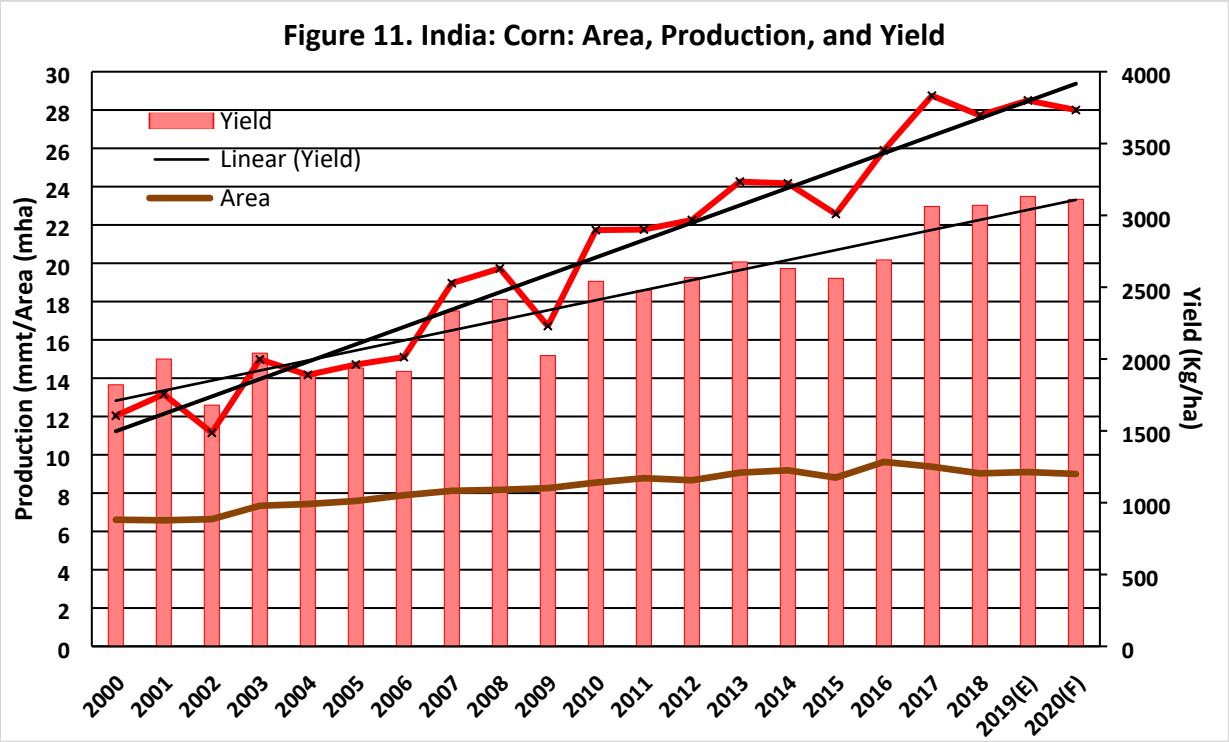
India's coarse grain production trend has been driven by corn, which accounts for the major and growing share in recent years. In contrast, weak demand and lower yields have driven the steady decline of millet and sorghum production over the past few decades, while barley has only a very small share.



Source: MoAFW, GOI; and FAS/New Delhi estimate for MY 2019/20 and MY 2020/21 forecast.

Corn

Corn production has enjoyed a steady upward trend over the last two decades thanks to growing demand from feed manufacturers and the starch industry, and steady productivity gains due to improved hybrid seeds. In contrast, sorghum and millet cultivation has been declining, with acreage shifting to more profitable cereals (rice, wheat, corn and pulses) and other competing crops (oilseeds and cotton). India's weak intellectual property regulations which allow farmers to reuse seeds are a disincentive to seed companies who might otherwise invest in technological developments in productivity gains for most coarse grains, except corn. In contrast, the private sector, including major multinational companies, have developed new corn hybrids with higher productivity gains over the years.



Source: MoAFW, GOI; FAS/New Delhi for MY 2019/20 and 2020/21

Until only recently, rapidly growing demand from the poultry feed and industrial use industries fueled the steady, 20-year upward trend in India's corn production, so much so that it was even growing faster than rice and wheat, albeit from a lower base. Corn growers have brought more acreage under corn and expanded the use of improved hybrid seeds: Since the early 1990s, private sector seed companies have been developing newer, higher-yielding hybrids, particularly single cross hybrids, to replace traditional varieties and old hybrids. However, due to fake news reports in India that consuming poultry can cause Covid-19, the poultry sector has had to cull flocks, thereby reducing its demand for feed corn which, in turn, depressed the domestic corn price. Expected weak end-of-season prices are likely to lower corn planting in MY 2020/21, which will also depend on the 2020 monsoon rains across the growing states and season (June-September).

Market sources report that hybrid corn, which is mostly feed and industrial grade corn, accounts for about 75 percent of the planted area, while food grade corn is produced using traditional cultivars in traditional corn consuming states in the north. Indian corn has not been price competitive in international markets over the last few years. However, growing domestic demand from the rapidly expanding domestic poultry/ commercial animal feed and starch industries, has outstripped production growth, fueling higher domestic corn prices. Further expansion of hybrid acreage has slowed in recent years, but farmers continue to replace old hybrids with newer, higher-yielding hybrid varieties released by the private sector.

Millet and Sorghum

Sorghum and millet production fluctuates year-to-year, depending on the performance of the monsoon as the crop is largely unirrigated. These low value crops have not experienced any significant productivity-enhancing technological (varietal or agronomic) breakthroughs and/or demand for industrial or commercial usage. Expansion of irrigation infrastructure has further eroded traditionally planted area for these crops, as farmers shift to irrigation intensive/higher profitability crops. With increasing supplies of rice and wheat available through government food security programs, consumers are shifting away from sorghum and millet, further eroding farmers' confidence for these crops. Consequently, over the last two decades, the traditional cultivated area under sorghum and millet has shifted significantly to rice and wheat, and other commercially viable crops like corn, cotton, soybeans, and other higher-value crops.

Barley

Barley is a relatively small winter crop cultivated in northwest India, with production around 1.7-1.8 MMT, with minor weather induced fluctuations. While demand is growing from the malting and brewing industries, it is declining for food/feed use. Nevertheless, MY 2020/2 barley production is forecast at a record 1.85 MMT, on higher planting and favorable weather conditions.

Traditionally, India produced six-row varieties of barley for food and feed use, which was unsuitable for malting. In recent years, however, a few high-quality/ malting grade barley varieties have been developed through public-private breeding programs, and these varieties are steadily replacing older food/feed varieties. Trade sources report that some malting and brewing companies are promoting the cultivation of malting-grade barley varieties under contract farming (buy-back arrangement) in the traditional growing areas of Rajasthan, Punjab, and Haryana.

CONSUMPTION

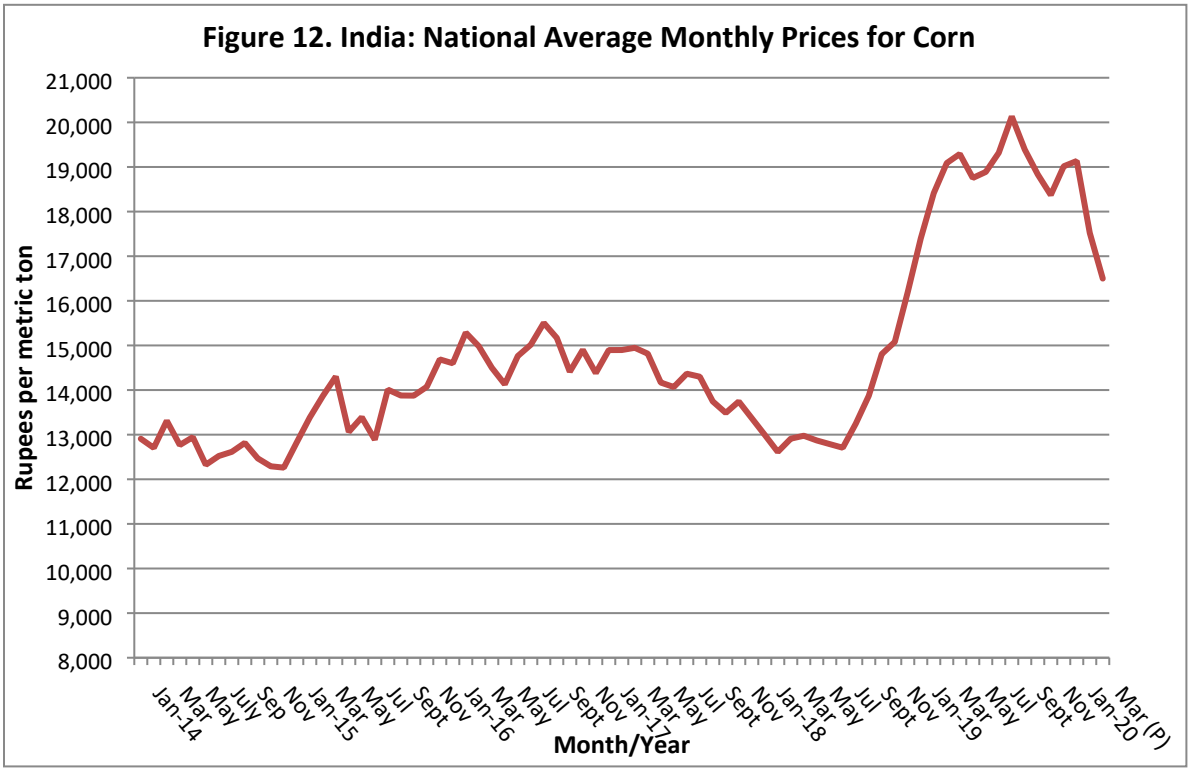
Coarse grain consumption in MY 2020/21 is forecast at 45.8 MMT, marginally higher than the estimated 45.3 MMT in MY 2019/20 on expected higher consumption of sorghum, millet, and barley. While MY 2020/21 corn consumption is forecast the same as last year on expected weak demand from the poultry sector, offtake of other coarse grains are likely to improve on forecast higher supplies, reflecting decreased demand from poultry producers as they reduce their production capacity, at least for the short-term. Market sources expect that reduced demand for corn and coarse grains by the poultry sector will be at least partially offset by anticipated steady growth in starch manufacturing (used by textile sector) and in the dairy and other livestock sectors.

Corn

Post's MY 2020/21 corn consumption is forecast at 28.4 MMT, unchanged from last year, due to expected weak demand from the poultry sector and relatively tight domestic supplies. Forecast consumption includes 15 MMT for poultry feed, 1.5 MMT for other animal feed, 1.9 MMT for starch, 1.5 MMT for ethanol, with the balance for food, seed and other uses. MY 2019/20 corn consumption is revised lower to 28.4 MMT, reflecting the expected lower demand from the poultry feed sector.

Over the last two decades, India's growing economy and expanding consumer-class (middle and higher income) have been fueling demand for meat / animal protein (poultry and livestock sector) and clothing (starch sector) which, in turn, has been driving demand for corn. Industry sources report that the poultry industry had been growing at 5-7 percent until just recently. Since the beginning of 2020, India's poultry industry has experienced a severe setback due to false rumors linking the consumption of poultry meat and products with Covid-19. Market sources expect the impact of the demand shock to continue through CY 2020, as poultry companies and producers have faced massive financial losses and cut production, which will take some time to recover. However, the organized dairy sector (herd size > 20 animals) is likely to continue growing at 8-10 percent, per year, while the starch industry (catering to textile industry) could grow at 5-6 percent in CY 2020 due to expected weak corn prices. There is also a small (2-3 MMT), but increasing, use of low quality corn and other coarse grains for ethanol production by the high-end potable liquor industry for blended whiskies and other liquors. Most food grade corn (5-6 MMT) is used to produce traditional foods and savory snacks.

Poultry industry crisis resulted in a sharp decline in prices since beginning of CY 2020.



Source: Agmarket News, Ministry of Agriculture, GOI.

Currently, the market prices for corn in the major producing and consuming states are about 14 percent lower than last year's prices, and 6 percent below the government's MSP (INR 17,600 ($238), per MT), suggesting weak demand as domestic supplies are relatively steady compared to last year.

Table 12. India: Commodity, Corn, Prices Table

Prices In	Rupees	per uom	Metric tons	
Year	**2018**	**2019**	**2020**	**%Change**
Jan	12,995	17,399	19,134	10.0
Feb	12,614	18,414	17,522	-4.8
Mar	12,910	19,088	16,499	-13.6
Apr	12,976	19,291		
May	12,870	18,754		
Jun	12,788	18,889		
Jul	12,707	19,318		
Aug	13,246	20,132		
Sep	13,871	19,390		
Oct	14,807	18,833		
Nov	15,078	18,372		
Dec	16,199	19,016		
Exchange Rate	73.90	Local Currency/US$		
Date of Quote	03/17/2020	MM/DD/YYYY		

National Average Monthly Wholesale Prices of Corn
Source: Agmarket News, Ministry of Agriculture, GOI

Other Coarse Grains

Traditionally, other coarse grains, namely millet, sorghum, and barley, were the staple diet for rural and lower income semi-urban households in India. However, following India's Green Revolution in the 1970s, they have been gradually replaced by rice and wheat due to the government's food security focus to provide subsidized rice and wheat across the country. Nevertheless, coarse grains are still an important cereal supplement in the staple diet for a section of subsistence farmers/rural poor, due to traditional preference in several states. Also, the consumption of sorghum and millet (nutri-cereals) has been growing among a small population of 'health conscious' urban consumers—especially those suffering from diabetes and other lifestyle diseases—who are incorporating these cereals in their diets because of their higher fiber and nutrient content compared to rice and wheat (higher carbohydrate).

Food use accounts for a significant share of sorghum, millet, and barley consumption. Some poor quality (largely weather and rain damaged) coarse grains are also fed to cattle at the farm household level. The new malting barley varieties are used for brewing (650,000- 700,000 metric tons). Indian sorghum is not traditionally fed to chickens due to its high tannins (poor taste), but is reportedly increasingly incorporated in the production of spirits, industrial alcohol, and starch.

Animal Feed Use

There is no information on India's animal feed industry published by either the government or reliable industry sources. Market sources report that the commercial feed industry accounts for more than half of the total animal feed market. The commercial feed industry largely caters to the poultry (72-75 percent), aquaculture (12-15 percent) and dairy cattle (10-12 percent) feed sectors.

Industry sources report that corn and soybean meal are the leading ingredients used by the commercial feed industry, which supplements these inputs with other coarse grains and oilseed meals, inferior quality wheat, wheat bran, and low quality broken rice (milling waste), depending on the comparative pricing. High corn prices since 2019 have resulted in higher usage of wheat and broken rice, as feed millers have increased their share of other additives. Small quantities of DDGS from grain based ethanol plants are used by poultry and aquaculture feed manufacturers.

Table 13. India: Usage of Grains, Oil Meals and Other Feed Ingredients
(Quantity in Million Metric Tons)

Commodity	Quantity	Comments
Corn	15.0-15.5	Largely commercial feed for poultry and aquaculture sector
Wheat	4.5-5.0	Largely farm feed mixes and commercial feed for dairy sector
Other Course Grains	1.5-1.8	Largely farm feed mixes and some for commercial feed for all sectors
Soybean Meal	5.3-5.6	Largely commercial feed for poultry and aquaculture sector
Cotton Seed & Meal	4.2-4.6	Largely farm feed mixes and some for commercial feed for dairy sector
Rapeseed Meal	2.8-3.0	Largely commercial feed and some for farm feed mixes for all sectors
Peanut Meal	1.4-1.7	Largely commercial feed and some for farm feed mixes for all sectors
Other Oil Meals	0.7-0.8	Largely commercial feed and farm feed mixes for all sectors
Broken rice/ deoiled rice bran/1	2.5-3.0	Largely commercial feed for poultry and aquaculture sector
Wheat Bran/2	4.5-5.0	Largely farm feed mixes and some commercial feed for dairy sector
DDGS	0.2-0.3	Compound feed for poultry sector
Total	43.0-45.0	Compound feed accounts for about 60 percent of the total share

Source: FAS New Delhi Estimates based on information from trade sources
[1]By product of the rice mills
[2]By product of the roller flour mills

Over the last decade, India's feed industry had been reportedly growing at 5-7 percent per annum, with the poultry, dairy cattle, and aqua feed sectors emerging as major growth drivers. However, growth has slowed down since MY 2018/19 on relatively high prices for raw materials, and is likely to remain weak in MY 2020/21 due to the recent Covid-19-induced crisis in the poultry sector.

India's domestic ethanol program uses molasses (a sugar industry byproduct) as feedstock, and does not utilize cereal grains for producing ethanol for "fuel." Consequently, fuel ethanol use does not affect the domestic and export market demand for cereal grains and its byproducts. However, small quantities of ethanol are produced from rice milling industry waste (broken rice), and lower quality wheat and coarse grains (not fit for human and animal consumption) can be used for potable liquor and other industrial uses.

Small quantities of DDGS (250,000 MMT to 300,000 MMT) from these ethanol plants are used by the animal feed industry.

TRADE

Since 2015, Indian corn has been uncompetitive in the international market due to relatively strong MSP-driven domestic prices vis-à-vis corn prices from competing origins, with exports limited to neighboring Nepal and Bangladesh through land routes. Even with declining domestic prices and the value of Indian rupee vis-à-vis the U.S. dollar, Indian corn prices are still relatively higher than international prices. Assuming current price parity and value of Indian rupee, Post forecasts MY 2020/21 exports at 400,000 MT, and imports at 500,000 MMT, of which most would be duty-free imports by the starch industry under advance license, and imports for feed use from less developed countries (LDC) like Myanmar.

Official trade statistics for the first two months of MY 2019/20 estimate exports at less than 93,000 MT, compared to over 140,000 MT during the same period last year. Sources report that the weakening of the Indian rupee against the U.S. dollar, and expected weak domestic prices with the arrival of *rabi* corn from April, onwards, will improve export prospects to neighboring Bangladesh. At the current price parity for Indian corn vs. competing corn in the neighboring markets, Post estimates MY 2019/20 exports higher at 500,000 MT. This estimate could further improve if local prices and/or the value of the Indian rupee declines by another 10-15 percent in the balance of the marketing season.

Market sources reported that, by the end of February, India had imported about 300,000 MT of corn, mainly from Myanmar and Ukraine. Most of the imported corn entered the country at zero duty under advance licensing schemes for the starch industry, or under duty exemptions given to Less Developed Countries. Earlier, the GOI allowed 500,000 MT of imports under a tariff rate quota (TRQ) of 15 percent for the Indian fiscal year 2019/20 (April-March) for poultry feed users, but there was no interest to use the TRQ as industry was able to access cheaper corn from Myanmar. Some additional quantities of corn contracted for imports are likely to continue through early April before the onset of the *rabi* harvest. At the current price parity, MY 2019/20 imports will reach 400,000 MT, with negligible imports in the second half of the marketing season on expected weak demand and sufficient *rabi* corn supplies.

Traditionally, India exports small quantities of feed grade sorghum and barley to neighboring countries and the Middle East. India is a net importer of barley since MY 2016/17, importing small, but increasing, quantities of barley for malting purposes. Based on the provisional trade figures through December 2019, Post estimates MY 2019/20 barley imports at 250,000 MT, and forecast MY 2020/21 lower at 200,000 on an expected record local harvest and growing cultivation of malting barley.

Tariffs

India imposes a basic import duty of 50 percent on sorghum and millet, while the import duty for barley is zero. India allows imports of non-GE corn under a TRQ of 500,000 MT, with a 15 percent duty. Outside the TRQ, imports of corn are subject to a 50 percent import duty. To import corn under the TRQ, the importer must obtain a TRQ Allocation Certificate issued by the Ministry of Commerce and Industry's Directorate General of Foreign Trade. This certificate is issued in accordance with procedures developed by the EXIM

Facilitation Committee. In addition, the GOI's advance licensing scheme allows the duty-free import of corn by processors such as starch manufacturers, against export commitments for processed end products that meet value-addition norms.

Table 14: Import Tariffs on Coarse Grains

HS Code	Description	Basic Duty (BD) on Assessable value	Social Welfare Surcharge (SWS) on BD	Integrated GST (IGST) on AV+BD+IGST	Total Effective Duty (BD+SWS+IGST)
1003	Barley	Nil	Nil	Nil	Nil
1005	Corn*	50 percent	10 percent	Nil	55 percent
1007	Grain Sorghum	50 percent	10 percent	Nil	55 percent
100821-100829	Various Millets	50 percent	10 percent	Nil	55 percent

*** India has a TRQ of 500,000 on imports of corn at 15 percent basic duty**
Exchange rate on March 17, 2020 1US$= INR 73.90

POLICY

Production

GOI policies and program coverage for coarse grains, including funds allocation, is significantly lower compared to rice and wheat. The government's MSP procurement program and food distribution program through the PDS for coarse grains are restricted to a few states, as MSP procurement is only for food-grade grains distribution for NFSA and other food security programs (excludes feed corn and other non-food use grains). Occasionally in the past, some states have undertaken MSP procurement of corn in their respective states whenever domestic prices dropped significantly below the GOI's MSP.

Unlike wheat and rice, the government does not have any food security or buffer stock commitments for coarse grains. The GOI does not allow the use of grains, including coarse cereals, to produce alcohol or ethanol (biofuels), unless it has been certified as unfit for human consumption. Efforts to produce ethanol from other feedstocks like sweet sorghum stover and crop waste are still at the research stage.

India has not commercialized any genetically engineered (GE) coarse grain crops. Several Indian seed companies and public sector research institutions are developing various GE crops including corn and sorghum, but these are still at the developmental stage, and have not been submitted for regulatory approval.

Trade

Currently, the GOI imposes no restrictions on exports of corn, millet, sorghum, and barley. Imports of these commodities are also allowed by private trade, subject to the effective import duty and phytosanitary conditions specified in the Plant Quarantine (Regulation of Imports into India) Order 2003.

The GOI's phytosanitary requirements for weed seeds, ergot, and other SPS issues, including no approvals to date for any GE corn events, have effectively banned U.S. coarse grain exports to India. Imports of any GE

product, including GE corn and food products derived from GE crops, are subject to approval by India's biotech regulatory agency, the Genetic Engineering Appraisal Committee (GEAC). To date, GEAC has not approved any GE coarse grains or byproducts for import.

MARKETING

Despite the recent Covid-19-related poultry industry crisis, growing demand in the poultry, livestock, and starch industries will support growth in the near future. Market sources report significant shortages of feed ingredients, which are likely to only grow further, eventually creating demand for imported corn and/or corn products like corn-based distiller's dried grains with solubles (DDGS) in the next few years. Steady growth in the brewing industry will also fuel demand for malting grade barley. India is likely to continue to import small quantities of corn and barley in MY 2020/21 to augment domestic supply shortages.

Production, Supply, and Demand Data for Coarse Grains:

Table 15. India: Commodity, Corn, PSD
(Area in Thousand Hectares, Quantity in Thousand Metric Tons, Yield in MT/Hectare)

Corn	2018/2019		2019/2020		2020/2021	
Market Begin Year	Nov 2018		Nov 2019		Nov 2020	
India	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	9275	9027	9300	9100	0	9000
Beginning Stocks	2329	2329	1346	1346	0	1346
Production	27715	27715	28500	28500	0	28000
MY Imports	221	221	400	400	0	500
TY Imports	212	212	400	400	0	500
TY Imp. from U.S.	0	0	0	0	0	0
Total Supply	30265	30265	30246	30246	0	29846
MY Exports	419	419	400	500	0	400
TY Exports	482	482	400	500	0	400
Feed and Residual	17300	17300	17500	17200	0	17000
FSI Consumption	11200	11200	11200	11200	0	11400
Total Consumption	28500	28500	28700	28400	0	28400
Ending Stocks	1346	1346	1146	1346	0	1046
Total Distribution	30265	30265	30246	30246	0	29846
Yield	2.9881	3.0702	3.0645	3.1319	0	3.1111

Table 16. India: Commodity, Millet, PSD

(Area in Thousand Hectares, Quantity in Thousand Metric Tons, Yield in MT/Hectare)

Millet	2018/2019		2019/2020		2020/2021	
Market Begin Year	Nov 2018		Nov 2019		Nov 2020	
India	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	8146	8450	8000	8250	0	8900
Beginning Stocks	687	687	323	323	0	523
Production	10236	10236	10900	10900	0	11000
MY Imports	0	0	0	0	0	0
TY Imports	0	0	0	0	0	0
TY Imp. from U.S.	0	0	0	0	0	0
Total Supply	10923	10923	11223	11223	0	11523
MY Exports	0	0	0	0	0	0
TY Exports	0	0	0	0	0	0
Feed and Residual	700	700	900	900	0	950
FSI Consumption	9900	9900	9800	9800	0	10000
Total Consumption	10600	10600	10700	10700	0	10950
Ending Stocks	323	323	523	523	0	573
Total Distribution	10923	10923	11223	11223	0	11523
Yield	1.2566	1.2114	1.3625	1.3212	0	1.236

Table 17. India: Commodity, Sorghum, PSD

(Area in Thousand Hectares, Quantity in Thousand Metric Tons, Yield in MT/Hectare)

Sorghum	2018/2019		2019/2020		2020/2021	
Market Begin Year	Nov 2018		Nov 2019		Nov 2020	
India	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	3919	4093	4600	4500	0	4800
Beginning Stocks	274	274	148	148	0	198
Production	3475	3475	4400	4400	0	4500
MY Imports	0	0	0	0	0	0
TY Imports	0	0	0	0	0	0
TY Imp. from U.S.	0	0	0	0	0	0
Total Supply	3749	3749	4548	4548	0	4698
MY Exports	51	51	50	50	0	50
TY Exports	53	53	50	50	0	50
Feed and Residual	350	350	400	400	0	450
FSI Consumption	3200	3200	3900	3900	0	3900
Total Consumption	3550	3550	4300	4300	0	4350
Ending Stocks	148	148	198	198	0	298
Total Distribution	3749	3749	4548	4548	0	4698
Yield	0.8867	0.849	0.9565	0.9778	0	0.9375

Table 18. India: Commodity, Barley, PSD

(Area in Thousand Hectares, Quantity in Thousand Metric Tons, Yield in MT/Hectare)

Barley	2018/2019	2019/2020	2020/2021

Market Begin Year	Apr 2018		Apr 2019		Apr 2020	
India	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	661	661	696	576	0	696
Beginning Stocks	240	240	250	250	0	228
Production	1781	1781	1633	1633	0	1850
MY Imports	135	135	250	250	0	200
TY Imports	258	258	200	250	0	200
TY Imp. from U.S.	0	0	0	0	0	0
Total Supply	2156	2156	2133	2133	0	2278
MY Exports	6	6	5	5	0	5
TY Exports	2	2	5	5	0	5
Feed and Residual	450	450	400	400	0	450
FSI Consumption	1450	1450	1500	1500	0	1600
Total Consumption	1900	1900	1900	1900	0	2050
Ending Stocks	250	250	228	228	0	223
Total Distribution	2156	2156	2133	2133	0	2278
Yield	2.6944	2.6944	2.3463	2.8351	0	2.658

Attachments:

No Attachments