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## India

### Grain and Feed Annual

#### 2019

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**Report Highlights:**

India is heading for third consecutive record wheat harvest with marketing year (MY) 2019/20 (April/March) production forecast at 100 million metric tons (MMT). After two consecutive record harvests, MY 2019/20 rice production is forecast at 112 MMT, still the fourth highest crop on record. Indian wheat remains uncompetitive in the international market, with MY 2019/20 wheat exports forecast at just 550,000 MT. However, India will remain the leading supplier of rice in the international market with MY 2019/20 exports forecast at 12 MMT, unchanged from the previous year. MY 2019/20 coarse grain production is forecast to recover to 44.9 MMT, but corn imports are forecast to increase to 1.0 MMT on growing feed demand.

## **Executive Summary:**

India is set to harvest third consecutive record wheat harvest (100 MMT) in the upcoming (MY 2019/20 (April/March) on forecast higher yields due to favorable weather conditions compared to previous year. Assuming normal 2019 monsoon and weather conditions, MY 2019/20 (October/September) rice production is forecast slightly lower at 112 MMT (from 44 million hectares and trend yield) compared to MY 2018/19 record production of 114 MMT.

Successive bumper harvests and increasing minimum support prices (MSP) in recent years have bolstered government procurement of rice and wheat, and bloated grain stocks, which is likely to balloon 12-15 MMT above the existing storage space by end of June 2019 after the new wheat crop is harvested. The government of India (GOI) will strive to bring down their stocks to manageable levels by selling through various food security programs and open market sales in MY 2019/20 at subsidized prices.

Indian wheat remains uncompetitive in the international market due to relatively higher MSP-driven local prices compared to wheat from other origins, limiting MY 2019/20 wheat exports at just 550,000 MT. India will remain the leading supplier of rice in the international market with MY 2019/20 exports forecast at 12 MMT, unchanged from the previous year, on sufficient exportable surplus.

Assuming normal 2019 monsoon and weather conditions, MY 2019/20 coarse grain production is forecast to recover to 44.9 MMT from last year's weak 2018 monsoon affected harvest. Nevertheless, MY 2019/20 corn imports are forecast to increase to 1.0 MMT on growing feed demand.

## **Commodities:**

## Wheat

**Table 1. India: Commodity, Wheat, PSD**

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

Wheat	2017/2018		2018/2019		2019/2020	
Market Begin Year	Apr 2017		Apr 2018		Apr 2019	
India	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	30785	30785	30000	30000	0	29850
Beginning Stocks	9800	9800	13203	13230	0	17500
Production	98510	98510	99700	99700	0	100000
MY Imports	1166	1166	100	50	0	50
TY Imports	863	863	100	50	0	50
TY Imp. from U.S.	0	0	0	0	0	0
Total Supply	109476	109476	113003	112980	0	117550
MY Exports	439	569	500	450	0	550
TY Exports	482	515	500	450	0	550
Feed and Residual	5000	5000	5000	5000	0	5500
FSI Consumption	90834	90677	90000	90030	0	91500
Total Consumption	95834	95677	95000	95030	0	97000
Ending Stocks	13203	13230	17503	17500	0	20000
Total Distribution	109476	109476	113003	112980	0	117550
Yield	3.1999	3.1999	3.3233	3.3233	0	3.3501

### Production:

#### MY 2019/20 Outlook

India is heading for its third consecutive record wheat harvest in the upcoming season due to favorable growing conditions from well-distributed rains and extended winter in major wheat growing areas.

Assuming normal weather conditions through harvest (April/May), Post forecasts marketing year (MY) 2019/20 (April/March) wheat production at 100 million metric tons (MMT) from 29.9 million hectares (MHa), marginally higher than last year's record harvest of 99.7 MMT.

Despite a weak late 2018 monsoon, wheat planting commenced on time as farmers strived to optimize residual soil moisture. With the wheat crop largely irrigated, farmers provided supplemental irrigation at the time of planting and at crop establishment stages. The Government of India's (GOI) continual increases in the minimum support price (MSP) for wheat, coupled with the expectation of governments in wheat growing states announcing additional bonuses, and expanded MSP procurement operations due

to the upcoming National elections (April/May), all are factors which prompted farmers to continue to plant wheat. The Ministry of Agriculture and Farmers Welfare (MoAFW) *rabi* (winter planted) crop planting report estimated wheat planting at 29.85 million hectares on February 15, 2019, marginally lower than last year, due to marginal losses in unirrigated areas.

Agricultural experts and farmers report that overall growing conditions have been favorable compared to previous years due to well-distributed rains and extended winter conditions, raising the yield prospects over the previous year yield. For this season winter set in by mid-December, which is early compared to previous years, and low temperatures supported establishment and vegetative growth of the crop. Wheat growing states also experienced several well-distributed, beneficial rains and experienced extended low temperatures from January through March during critical growth stages (vegetative growth, tillering, flowering, panicle initiation, milking, and seed-setting stages). The relatively favorable weather also helped forestall any major incidences of pests or disease in the major wheat growing areas.

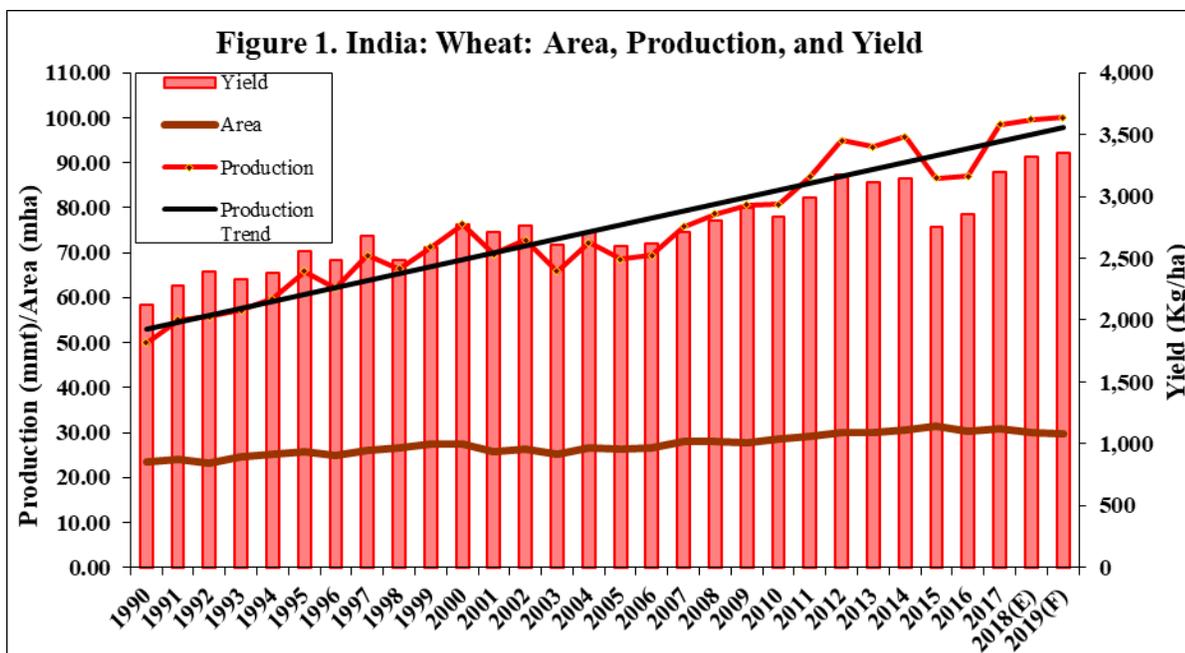
Assuming normal weather conditions from now through harvest (April/May), despite marginally lower acreage, Post forecasts marketing year (MY) 2019/20 wheat production at 100 MMT based on forecast record yield (3.4 MT/Ha). The GOI's preliminary estimate (2<sup>nd</sup> Advance Estimate of Feb 28, 2019) forecasts 2019 wheat production at a near-record 99.1 MMT, while most trade sources are currently estimating the crop in the range of 95 to 100 MMT. The ongoing longer-than-normal cold temperature conditions in March may delay the harvest by 1-2 weeks, but would improve the quality of the grains (bold size/higher grain weight). However, an early rise in temperature in April (grain maturity stage) and/or heavy rains/hailstorms during harvest (April/May) could adversely affect the yield prospects and lower the production from the forecast level.

#### MY 2017/18 Production Unchanged

Against its normal practice, the MoAFW did not release the final production estimates for the Indian crop year (ICY) 2017/18 (July/June) in February 2019 along with the 2<sup>nd</sup> Advance estimate for ICY 2018/19. Consequently, Post continues to estimate MY 2018/19 production unchanged as 99.7 MMT from 30.0 MHa based on the MoAFW fourth estimate for ICY 2017/18 released in August 2018.

#### Production Trend and Challenges

As a result of the GOI's rice and wheat based domestic agricultural and food security policies and programs (see policy section), Indian wheat production has grown steadily over the last few decades. Acreage in recent years has been relatively stable at around 30 million hectares, as farmers prefer wheat to other crops in irrigated areas because of 'assured' returns. Due to the government's effective MSP wheat procurement program in major growing states, market prices during the harvest season are relatively stable compared to other crops. While winter temperatures and rains during the crop season (November-April) influence crop growth and yield prospects, wheat productivity is relatively stable under irrigated conditions vis-à-vis other competing crops. While wheat yields in the irrigated northern states are comparable to other high yielding producers in the world, yields in other states have also been steadily increasing with the expansion in irrigation facilities and adoption of improved varieties and production technologies, resulting in an upward yield trajectory in recent years.



Source: Ministry of Agriculture and Farmers Welfare (MoAFW), Government of India (GOI); and FAS/New Delhi forecast for 2019 (MY 2019/20).

Indian wheat is soft to medium hard, medium protein, white bread wheat, somewhat comparable to U.S. hard white wheat. Wheat from the central and western regions grown under relatively drier conditions (less frequency of irrigation) has relatively higher protein and gluten in comparison to wheat from northern India. Depending on the availability of irrigation resources (no. of irrigation), soil condition, and adoption of technology, wheat yields show variations across major growing states. Wheat yields in largely irrigated northern India (Punjab, Haryana, and Western Uttar Pradesh) are about 4.5 to 5.0 tons per hectare, while yields in western and central states (Gujarat, Rajasthan, Madhya Pradesh, Bihar and parts of Uttar Pradesh) are relatively lower at 1.5 to 3.0 tons 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, so farmers can only manage about 2-5 irrigations.

Despite nearly a decade of bumper wheat harvests, Indian wheat cultivation faces future threats of diversion of acreage to non-agricultural use, soil degradation, and climate change. India's growing population and 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 leading to an increasing diversion of area dedicated to wheat cultivation adjacent to urban habitats. In northern India, over-exploitation of ground water and the continued practice of flood irrigation is causing problems with soil salinity and declining water tables in the wheat growing belts, which may force farmers to switch to less water intensive crops like corn, pulses and vegetables in the near future.

Vulnerability of the wheat crop to climate change, particularly the threat of rising temperatures due to an 'earlier-than-normal' onset of summer (terminal heat) affecting the crop at the grain filling/maturity stages (March/April), is a major concern among researchers. Of the 30 MHa under wheat cultivation,

about 10-12 MHa are reportedly prone to terminal heat stress. Recent incidences of untimely heavy rains/hailstorms during maturity/harvest stage (MY 2016/17), some scientists attribute 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 developing appropriate response mechanisms through agronomic management (early planting) and technological advances (short duration varieties) to mitigate potential climate change risks.

Agricultural experts report that the yields of most of the popular Indian wheat varieties are near their genetic potential, and are showing signs of fatigue due to re-use of seeds by farmers (seed replacement rate around 20-25 percent). In recent years, various NARS constituents have worked on developing location-specific wheat variety 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 in order to develop resistance to biotic and abiotic stresses. Recent government programs to promote the new wheat varieties have been gradually making inroads among growers.

In recent years, sporadic incidence of yellow rust has been reported in the northwestern wheat areas, but there has been no known incidence of Ug99, a wheat rust of global concern. Local agricultural scientists assert that the agro-climatic conditions in northern India's wheat belt are not conducive to Ug99, but some scientists are concerned that the highly mutative nature of the Ug99 strain could make India's wheat growing areas vulnerable to this rust. The NARS teams regularly survey and monitor the wheat crop and screen newly developed varieties for various rusts, including Ug99. In the last few years, the GOI has focused on encouraging state governments to replace susceptible varieties with Ug99-resistant varieties screened by NARS.

### Durum Wheat Prospects

India produces small quantities of durum in Madhya Pradesh, Rajasthan, and Maharashtra, mostly for food processors. Over the last decade, farmers have shifted from durum wheat cultivation to non-durum common wheat varieties, due to declining profit margins for durum vis-à-vis common wheat. Common wheat yields are reportedly 30-40 higher than durum wheat, and GOI's increasing MSP ensures higher returns from common wheat compared to durum. Most durum wheat is procured by the private sector, typically at a premium over common wheat for higher-value bakery and confectionary products. In the last few years, the availability of relatively 'cheap' high quality imported wheat (APW) for blending and processing lowered the price premium for local durum wheat compared to common wheat. However, the GOI raised the import duty on wheat from zero to 30 percent during March 2017 to May 2018, resulting in imports coming to a halt. Consequently, durum wheat producers realized significantly higher prices (25-30 percent) during MY 2018/19 compared to last year, supporting higher planting of durum wheat in MY 2019/20. Market sources report that India is likely to produce about 1.5 MT of Durum wheat in MY 2019/20, compared to an estimated 1.2 MMT in MY 2018/19.

### **Consumption:**

After two consecutive years of decline, wheat consumption (FSI) in MY 2019/20 is forecast to recover to 97 MMT on expected sufficient domestic supplies and strong off-take of government wheat. Wheat use for feed and residual in MY 2019/20 is forecast at 5.5 MMT, up nearly 10 percent over last year, on

expected higher supplies of damaged/spoiled government wheat stocks and relatively weak wheat prices compared to other feed grains.

### FSI Consumption

Current high government grain stocks, coupled with expected record MY 2019/20 government MSP wheat procurement, is likely to lead to ballooning of government grain stocks in the next few months, creating storage pressure. The GOI is likely to off-load higher quantities of wheat through the public distribution system (PDS), other food security programs, and open-market sales. With more-than-sufficient grain stocks at their disposal, the newly elected government after the April/May National elections can address the twin challenges of food inflation and storage pressure by supplying wheat to the open market at 'reasonable' prices. With a current import duty of 30 percent, millers from the non-traditional wheat growing areas (south and east) will rely on local wheat to meet their requirements. Wheat demand from these regions is likely to recover in the upcoming marketing year from the price shocks of the past two years due to the increase in import duties. Consequently, MY 2018/19 FSI wheat consumption is forecast to increase to 91.5 MMT, compared to 90 MMT last year, on expected stable domestic prices and growing population (1.2 percent per annum) demand.

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). After reaching a record 92.4 MMT in MY 2016/17, FSI consumption in MY 2017/18 and MY 2018/19 went down due to GOI policies affecting consumption in the non-wheat growing southern and eastern states. Wheat imports have been adversely affected after the government raised import duties from zero to 30 percent (March 2017 to May 2018), as coastal southern and eastern markets have to depend on local wheat. Due to the GOI's MSP policy, local wheat prices have also gone up in the last two years (see Figure 3). Prices in the coastal regions are also affected by high inland-transportation costs of moving wheat from the growing regions in north/central India. Consumption in these regions was significantly affected in the last two years as consumers are more price responsive than consumers from traditional wheat growing states. Consequently, MY 2018/19 FSI consumption is estimated lower at 90 MMT compared to MY 2017/18 consumption at 90.7 MMT.

As a staple food, wheat is consumed at the household level, local restaurants, and eateries in the form of handmade breads called *chapattis* or *rotis* or *parathas* (unleavened flat bread) using *atta* (whole wheat flour) estimated at around 75-80 percent of total consumption. Some wheat is used for traditional processed products like raised breads, "biscuits" (cookies) and other bakery items (about 15 percent). There is a small, but growing market for high quality wheat (4-5 MMT) for western style pasta, and the baking and confectionary foods markets, which has been growing at a healthy 10-12 percent, per annum, over the last few years.

The organized milling sector is relatively small at about 1,250-1,300 medium-to-large flourmills with aggregate milling capacity of about 25 MMT, per annum. These businesses mill mostly *maida* (flour) 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 50-60 percent of their capacity, and process about 15 MMT of wheat, per annum.

### Feed Use

Typically, spoiled and inferior quality wheat not deemed fit for human consumption, whether government-held or the open market stocks, is used for animal feed. 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. India's dairy sector is largely comprised of backyard dairy farmers who have 2-3 animals, and use 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. Recent trends suggest dairy farmers are replacing local low-yielding dairy animals with higher yielding crossbred cows and buffaloes, which require high-energy feed. Reports suggest that demand for commercial dairy feed is growing by about 15 percent, per annum, which is also supporting higher wheat usage in the dairy-feed sector. Due to the chance for higher spoilage of 'relatively' excess government-held wheat stocks, market sources report higher diversion of government-held wheat to animal feed.

### Distribution System

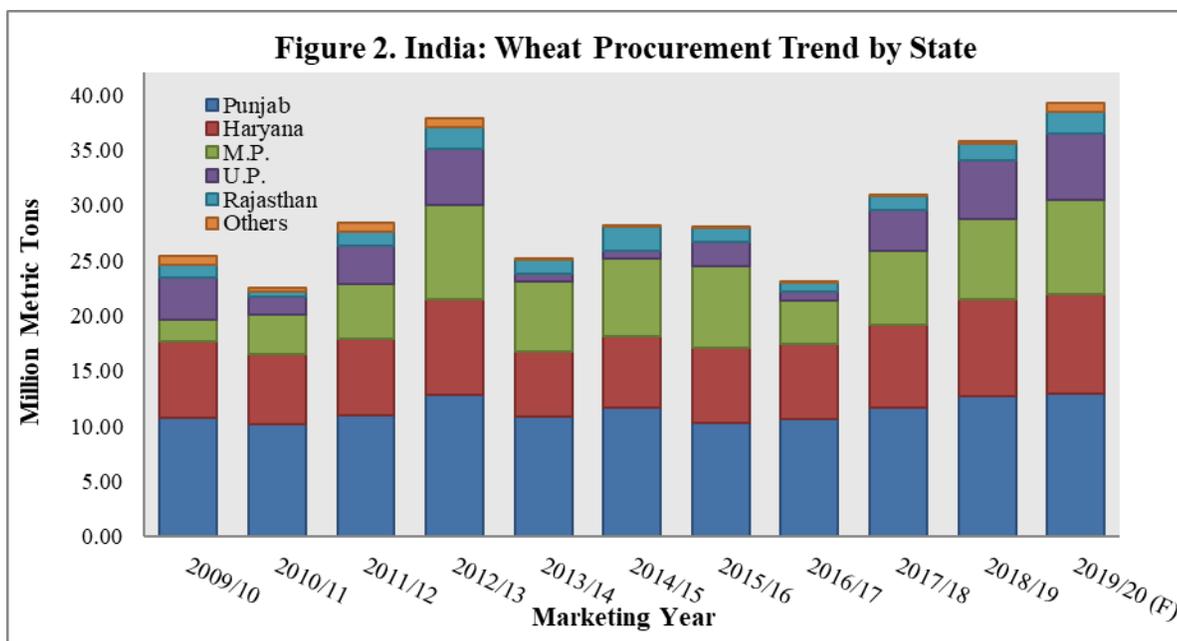
Market sources report that only about 55-60 percent of wheat is marketed by farmers, and the balance is used for personal food, feed, and seed use. More than half of the marketed wheat is procured under the MSP program by the government for distribution through PDS, various other food programs, and for open market sale to private millers. The balance of marketed wheat is procured directly by the private sector for milling, processing and other uses.

Typically, the government distributes whole wheat through the PDS, other government programs and on the open market, to either be custom milled by the household for home use, or milled for processors and institutional buyers. Most of the wheat retained by farmers (about 40-45 percent) is custom-milled in the local *chakkies* (small stone grinding flourmills) for home consumption, while small quantities (15-20 percent) are milled 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, per annum, on growing consumption by semi-urban and urban consumers.

### Government Procurement and Offtake

Back-to-back record domestic production and higher government MSP boosted MY 2018/19 government wheat procurement to 35.8 MMT, more than 16 percent higher than the previous year, and significantly higher than the initial target of 32 MMT. Based on the expected upcoming bumper harvest, the GOI has set up the MY 2019/20 procurement target at 35.7 MMT.

Given the forecast record domestic harvest, higher MSP, and political compulsions of ensuring sufficient MSP procurement operations due to the ongoing national elections occurring at peak harvest (April/May), wheat procurement is likely to cross a record 39 MMT.



Source: Food Corporation of India, GOI, and FAS/New Delhi forecast for MY 2019/20

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 will continue to preclude market purchase by private trade. Due to the ongoing elections, other states like Madhya Pradesh, Uttar Pradesh, and Rajasthan are likely to expand the government MSP procurement operation. News reports suggest that the newly elected Madhya Pradesh government has announced it will pay an additional bonus of INR 1,600 (\$ 23), per MT, over and above the MSP to their farmers, and other states may announce additional bonus as the harvest nears.

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, and Uttar Pradesh. With FCI's current covered storage capacity estimated at around 72.5 million tons, total wheat and rice stocks by the end of June 2019 are likely to swell to around 86-89 MMT. Consequently, significant quantities of wheat are likely to be kept under open storage structures (covered by tarpaulin sheets on wood plinth), especially during and after procurement (June onwards). 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 as quickly as possible.

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

Marketing Year	Production	GOI Procurement <sup>1</sup>	MSP	GOI Total Cost <sup>2</sup>	Offtake from GOI Stocks <sup>3</sup>	PDS Issue Price		
						Rs. per ton	APL	BPL
(Apr–Mar)	(Million Tons)	(Million Tons)	Rs. per ton	Rs. Per ton	(Million Tons)	Rs. per ton		
2005/06	68.64	14.79 (21.6)	6,400	10,419	16.71	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	N/A	N/A	2,000
2015/16	86.53	28.09(32.5)	14,500	21,274	31.57	N/A	N/A	2,000
2016/17	87.00	22.96(26.4)	15,250	21,970	29.25	N/A	N/A	2,000
2017/18	98.51	30.83(31.3)	16,250	22,979	25.30	N/A	N/A	2,000
2018/19	99.70	35.80(35.9)	17,350	24,352	25.30	N/A	N/A	2,000
2019/20 <sup>4</sup>	100.00	39.00(39.0)	18,400	25,057	30.502	N/A	N/A	2,000

Sources: MoAFW and Food Corporation of India.

Notes: Exchange rate INR 68.6 = US\$ 1 on March 18, 2019

<sup>1</sup> Figure in parentheses is GOI procurement as percentage of total production

<sup>2</sup> GOI Total Cost includes cost of procurement (MSP), handling, storage, transport, interest, etc.

<sup>3</sup> Offtake includes sales through PDS, other government programs, open market and exports.

<sup>4</sup> FAS/New Delhi production and procurement estimate

N/A – Not applicable

PDS - Public Distribution System

APL - Above Poverty Line

BPL - Below Poverty Line

AAY -*Antyodaya Anna Yojana* (Poorest of the Poor)

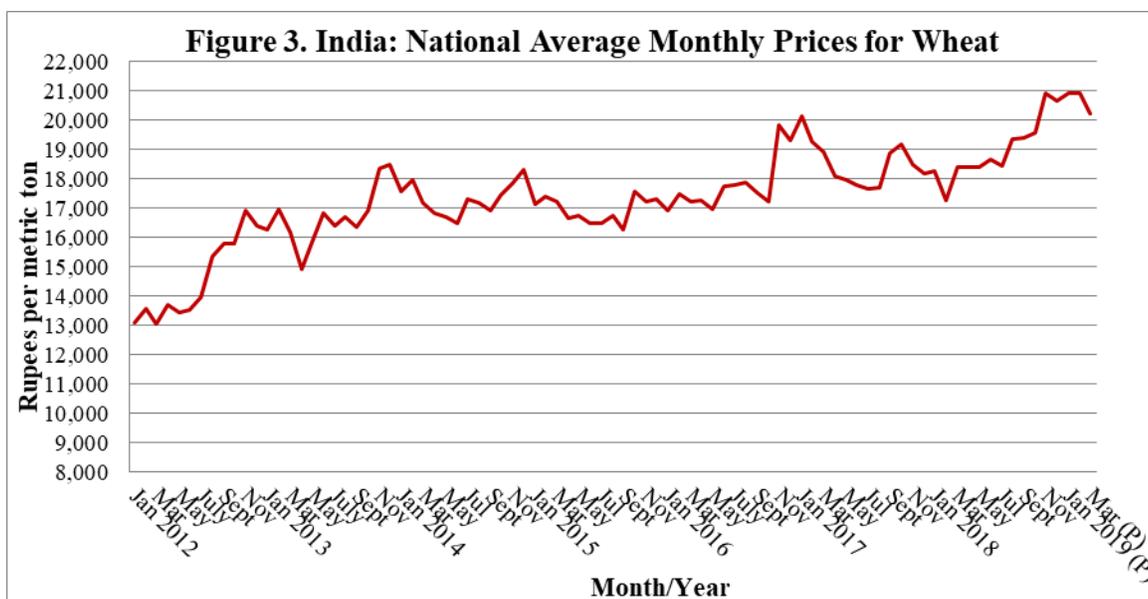
NFSA-National Food Security Act

Over the last decade, the cost of wheat to the government has increased by over 75 percent on increasing MSP and overheads of the procurement, storage, 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, the target beneficiaries receive 5 kilograms of rice, wheat, or coarse grain (millet) at highly subsidized prices of INR 3 (4.4 US cents), INR 2 (3 US cents) and INR 1 (1.5 US cents) per kilogram, respectively. With most states expanding implementation of the NFSA, an increasing quantity of wheat is being distributed every year through the PDS at INR 2,000/MT. The government annually distributes about 24 MMT of wheat under the NFSA, and other food security programs.

The government also sells wheat under the OMSS to the private trade, estimated at over 6.5 MMT in MY 2018/19 compared to 1.4 MMT in MY 2017/18. Market sources suggest higher open market sales of government wheat as the GOI constitute a major share of the marketed surplus forcing local mills to depend on government wheat to meet their requirements.

### Domestic Prices Swayed by GOI Policy

Despite record harvests, domestic wheat prices remained firm after September 2018, selling around the government's OMSS prices (MSP plus storage plus inland transport costs).



Source: [Agmarket News](#), MoAFW, GOI.

With reports of another bumper harvest, domestic prices started easing in March. Spot prices in March 2019 in the major producing states ranged between INR 18,800 (\$271) to INR 19,600 (\$286) per MT, slightly higher than the GOI's MSP of INR 18,400 (\$268) per MT announced for MY 2019/20.

Despite a forecast record domestic harvest, MY 2019/20 prices are likely to hover around the GOI's MSP during the procurement season (April-June). Prices after the procurement season will largely depend on the GOI's pricing policy for wheat offtake under OMSS. Private traders expect a more relaxed OMMS price policy in MY 2019/20 as the government strives to reduce anticipated abnormally high wheat stocks to manageable levels.

**Table 3. India: Commodity, Wheat, Prices Table**

Prices in Rupees per metric tons				
Year	2016	2017	2018	%Change
<b>Jan</b>	16,914	20,149	18,284	-9.3
<b>Feb</b>	17,472	19,247	17,280	-10.2
<b>Mar</b>	17,242	18,922	18,406	-2.7
<b>Apr</b>	17,257	18,092	18,402	1.7
<b>May</b>	16,979	17,980	18,396	2.3
<b>Jun</b>	17,725	17,790	18,658	4.9
<b>Jul</b>	17,804	17,663	18,454	4.5

<b>Aug</b>	17,863	17,684	19,350	9.4
<b>Sep</b>	17,513	18,886	19,402	2.7
<b>Oct</b>	17,214	19,188	19,583	2.1
<b>Nov</b>	19,849	18,479	20,917	13.2
<b>Dec</b>	19,316	18,171	20,648	13.6
<b>Exchange Rate</b>	68.60	Local Currency/US\$		
<b>Date of Quote</b>	03/18/2019			

National Average Monthly Wholesale Price of Wheat

Source: [Agmarket News](#), MoAFW, GOI.

### Trade:

Although India was a net wheat importer for two consecutive years (MYs 2016/17 and 2018/19), imports have come to a halt since May 2018 after the GOI raised the import duty to 30 percent (see IN 8064). The current duty precludes opportunities for wheat imports after accounting for shipping, clearance and inland transport costs. Imports of wheat and wheat products in MY 2019/20 are forecast at 50,000 MT, and are limited to small quantities of wheat products like pasta for high-end consumer markets.

Despite a third consecutive record wheat harvest, Indian wheat is not export-competitive due to relatively higher MSP-driven domestic prices compared to international prices. Assuming no significant change in the price parity for Indian wheat compared to foreign wheat, MY 2019/20 wheat exports are forecast at 550,000 MT, and will be mostly limited to exports to neighboring Nepal and Bangladesh by land route, with some wheat flour exports to traditional African and Middle Eastern markets.

Provisional official figures for MY 2018/19 estimate wheat and wheat products imports during April through January 2019 at 22,500 MT, but this is mostly wheat products as wheat imports have not been observed since October 2018. Consequently, MY 2018/19 imports have been revised lower to 50,000 MT. Based on the latest available official wheat and wheat product export figures derived from Global Trade Atlas, MY 2018/19 exports are estimated at 450,000 MT and MY 2017/18 exports at 569,000 MT (TY 2017/18 exports at 515,000 MT).

**Table 4. India: Commodity, Wheat<sup>1</sup>, Import Trade Matrix**

<b>Time Period</b>	<b>April-March</b>	<b>Units</b>	<b>Tons</b>
<b>Imports for</b>	MY 2017/18		MY 2018/19 <sup>2</sup>
U.S.	0	U.S.	0
<b>Others</b>		<b>Others</b>	
Ukraine	691,528	Pakistan	2,000
Australia	545,491		
Russia	404,309		
<b>Total for Others</b>	<b>1,648,233</b>	<b>Total for Others</b>	<b>2,000</b>
Others not Listed	1,492	Others not Listed	750

<b>Grand Total</b>	<b>1,649,725</b>	<b>Grand Total</b>	<b>2,750</b>
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Source: Global Trade Atlas and DGCIS, GOI

<sup>1</sup> Does not include wheat product

<sup>2</sup> Provisional data for the period April 2018 through December 2019

**Table 5. India: Commodity, Wheat<sup>1</sup>, Export Trade Matrix**

Time Period	April-March	Units	Tons
<b>Exports for</b>	MY 2017/18		MY 2018/19 <sup>2</sup>
U.S.	0	U.S.	0
<b>Others</b>		<b>Others</b>	
Nepal	184,819	Nepal	120,291
Afghanistan	108,308	Bangladesh	18,344
U.A.E	7,085	U.A.E.	5,301
Bangladesh	6,345		
<b>Total for Others</b>	<b>306,557</b>	<b>Total for Others</b>	<b>143,936</b>
Others not Listed	16,233	Others not Listed	13,250
<b>Grand Total</b>	<b>322,790</b>	<b>Grand Total</b>	<b>157,186</b>

Source: Global Trade Atlas and DGCIS, GOI

<sup>1</sup> Does not include wheat products

<sup>2</sup> Provisional data for the period April 2018 through December 2019

### Tariffs

Since May 2018, India has imposed an import tariff of 30 percent on wheat (HS1001). Back-to-back record production in MYs 2017/18 and 2018/19, combined with relatively weak domestic prices vis-à-vis foreign wheat resulted in the GOI raising the import duty in phases. On March 2017, the import duty was raised from zero to 10 percent; in November 2017 to 20 percent; and further to 30 percent in May 2018 to discourage imports and support domestic wheat prices. 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 (countervailing duty). See below the applicable import tariff table for wheat and wheat products. 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.

**Table 6: Import Tariffs on Wheat and Wheat Products**

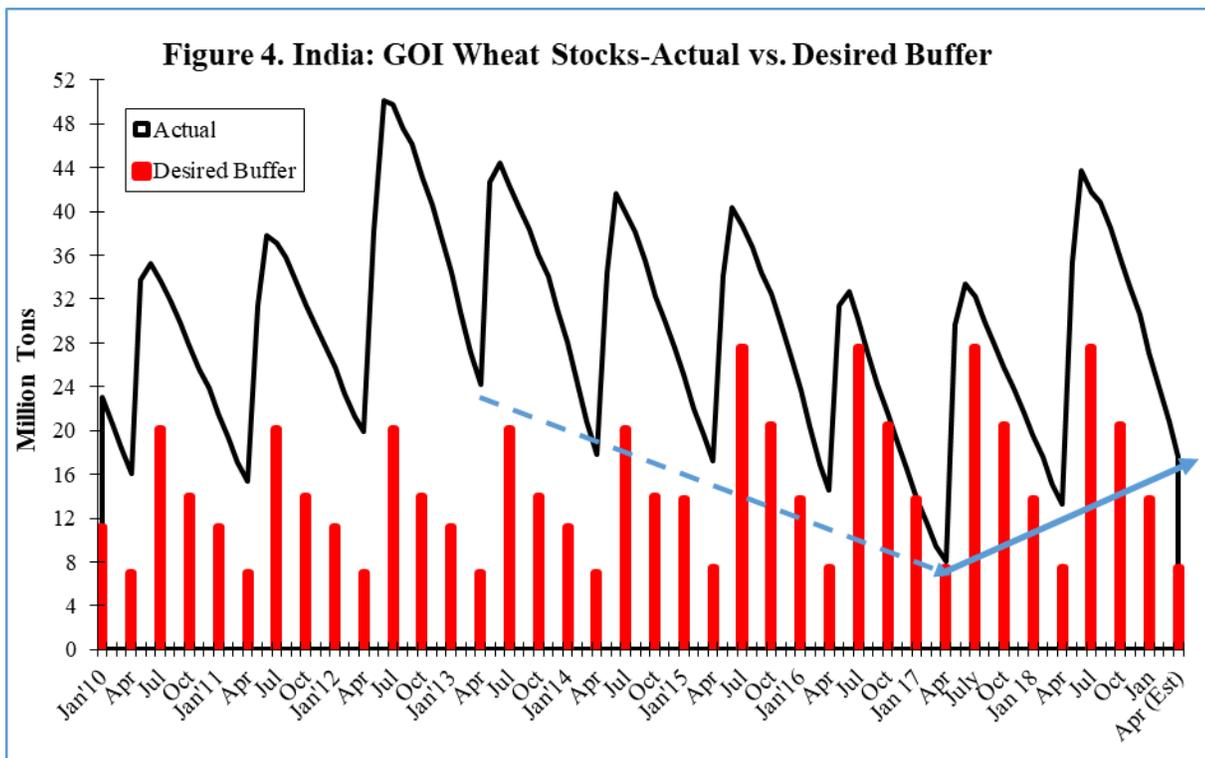
HS Code	Description	Basic Duty (BD) on Assessable value	Social Welfare Surcharge (SWS) on AV+BD	Integrated GST (IGST) on AV+BD+IGST	Total Effective Duty (BD+SWS+IGST)
1001	Wheat and	30 percent	10 Percent	Nil	33 percent

	Muslin				
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	49.68 percent
190230	Other Pasta	30 percent	10 percent	12 percent	49.68 percent
190240	Couscous	30 percent	10 percent	12 percent	49.68 percent

Exchange rate on Feb 18, 2019 1US\$= INR 68.60

### Stocks:

Back-to-back record domestic harvest and strong government procurement have buoyed government wheat stocks in the last two years. Assuming normal off-take of wheat in the last two months (Feb-Mar 2019), MY 2018/19 wheat ending stocks are estimated at 17.5 MMT, more than four MMT higher than last year, and more than double that of the government’s minimum buffer stock norm of 7.5 MMT. Expected record MY 2019/20 government procurement is likely to further swell the MY 2019/20 ending stocks, currently forecast at 20 MMT.



Source: Food Corporation of India, GOI

With forecast higher government wheat supplies (higher opening stocks and forecast record procurement), the GOI will aggressively push more wheat in the upcoming marketing year through various food security programs and open market sales to bring stocks to manageable levels. 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 in the section does not include privately held stocks.

## **Policy:**

### Research & Development

With more than 50 percent of the Indian population dependent on agriculture for their living and nearly one-third of the population living below the poverty level, food production remains a high priority for the GOI and various state governments. Wheat and rice remain the two primary crops designated to address food security concerns. Therefore, central and state governments allocate significant funding to support research, development, and extension activities for new varieties and improved production technologies (e.g., pest management) for these crops. NARS conducts wheat research and development at national and state levels complemented by various agricultural extension agencies at the regional and state levels.

Central and state governments also support farmers by subsidizing inputs (fertilizer, seed, power, irrigation, and chemicals), and by offering agricultural credit at affordable prices for various crops such as wheat. The GOI and state governments also support development and extension activities to educate farmers about new varieties and improved production technologies (seed, implements, pest management).

### Price Support

The GOI's major market intervention program has twin engines – (i) MSP for select agricultural crops to ensure remunerative prices to the farmers, and (ii) government MSP procurement for distribution through the PDS and other programs to ensure food security at affordable prices for the Indian population. The GOI establishes a MSP for wheat and various other crops on the recommendations of the Commission for Agricultural Costs and Prices (CACP). On February 1, 2018, the GOI announced its intention to ensure that MSP would be at least 1.5 times the cost of production.

Government parastatals like the Food Corporation of India (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 public distribution system and welfare schemes at a subsidized price. In years of sufficient procurement and stocks, the government also sells wheat in the open market to the private trade to stabilize open market prices.

### Trade Policy

India's phytosanitary requirement that a wheat sample drawn from a single consignment should 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:**

In the near future, India is likely to continue to be an erratic participant in the international wheat market, importing wheat when domestic supplies are depressed or of particularly low quality and exporting wheat when international prices are favorable. However, India is expected to emerge as a small, but growing, consistent market for high-protein wheat imports for the growing bakery/confectionary industry and western-style fast food sector. 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 market access to India, despite numerous bilateral discussions.

**Commodities:**

Rice, Milled

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

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

<b>Rice, Milled</b>	<b>2017/2018</b>		<b>2018/2019</b>		<b>2019/2020</b>	
<b>Market Begin Year</b>	<b>Oct 2017</b>		<b>Oct 2018</b>		<b>Oct 2019</b>	
<b>India</b>	<b>USDA Official</b>	<b>New Post</b>	<b>USDA Official</b>	<b>New Post</b>	<b>USDA Official</b>	<b>New Post</b>
<b>Area Harvested</b>	43789	43789	44500	43500	0	44000
<b>Beginning Stocks</b>	20550	20550	22600	22600	0	24500
<b>Milled Production</b>	112910	112910	116000	114000	0	112000
<b>Rough Production</b>	169382	169382	174017	171017	0	168017
<b>Milling Rate (.9999)</b>	6666	6666	6666	6666	0	6666
<b>MY Imports</b>	0	0	0	0	0	0
<b>TY Imports</b>	0	0	0	0	0	0
<b>TY Imp. from U.S.</b>	0	0	0	0	0	0
<b>Total Supply</b>	133460	133460	138600	136600	0	136500
<b>MY Exports</b>	12041	12041	12500	12000	0	12000
<b>TY Exports</b>	11791	11791	12500	12000	0	12000
<b>Consumption and Residual</b>	98819	98819	101100	100100	0	102000
<b>Ending Stocks</b>	22600	22600	25000	24500	0	22500
<b>Total Distribution</b>	133460	133460	138600	136600	0	136500
<b>Yield (Rough)</b>	3.8681	3.8681	3.9105	3.9314	0	3.8186

**Production:**

## MY 2019/20 Outlook

Assuming a normal southwest monsoon this summer (June-September 2019) and no major weather aberration, India's MY 2019/20 rice production is forecast at 112 MMT from 44 MHa on trend yields (3.8 MHa). Despite below-normal 2018 monsoon rains, rice growers realized good returns in MY 2018/19 due to relatively strong MSP-driven domestic prices (figure 7) and record yields. The expectation of the GOI's 'regular' practice of steadily increasing the MSP, backed by strong government procurement operations, should encourage farmers to continue to plant rice in the upcoming season. However, a timely and well-distributed 2019 monsoon across the country and crop season will be critical to realize the forecast area planted and productivity. A delayed, erratic, or weak monsoon across major growing regions and at planting and critical crop growth stages could potentially bring down planting by 2-3 MHa and production by 5-10 MMT from forecast levels. Alternatively, timely, adequate, and well-distributed rains could raise forecast production by 3-5 MMT.

## MY 2018/19 Production

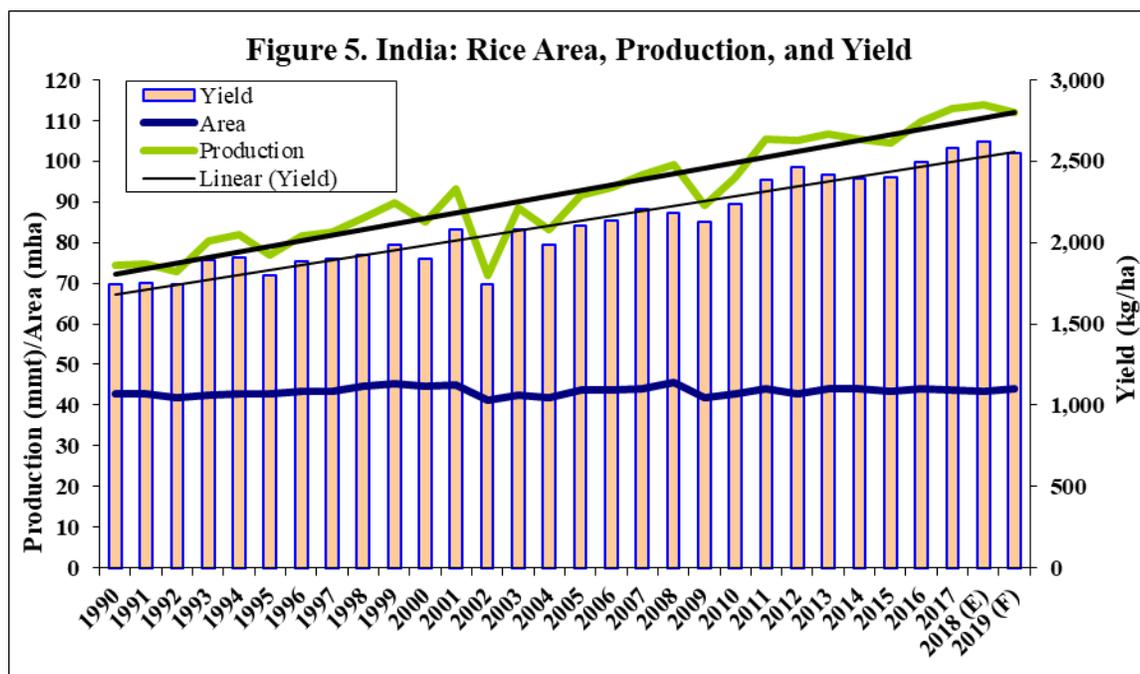
Despite a weak 2018 monsoon, MY 2018/19 rice production is estimated at a record 114 MMT, from 43.5 MHa due to higher yields of *kharif* (fall harvested) rice in southern and eastern states. Relatively good rains during June/July supported timely planting of rice in the largely unirrigated peninsular and southern India. Overall, monsoon rainfall in the southern states was only 2 percent below normal, providing favorable planting and growth conditions for the crop. The relatively 'wet' eastern states (average monsoon precipitation of 1,438 mm compared to 888 mm for the country), which normally experience crop loss due to excessive rains/floods, received 24 percent below-normal rains, avoiding 'normal' losses and enabling farmers to undertake more intensive crop management to support higher yields.

Nevertheless, Post's estimate is below the MoAFW's 'highly optimistic' ICY 2018/19 second advance estimate of 115.6 MMT (typically subject to future revisions). The weak second half of the 2018 monsoon and subsequent dry conditions in September-November 2018 affected unirrigated *kharif* rice at critical stages (flowering to maturity), as well as the planting of *rabi* (winter planted) rice. The MoAFW's planting report of February 15, 2018, estimates *rabi* rice planting at 3.39 million hectares, compared to 3.96 million hectares at the same time last year. Reports of relatively lower-than-normal reservoir water in southern India is also likely to affect planting of summer rice (February/March planted). Consequently, Post estimates MY 2018/19 rice production at 114 MMT (100.5 MMT *kharif* and 13.5 MMT *rabi*) compared to last year's 112.9 MMT (97.5 MMT *kharif* and 15.4 MMT *rabi*) from 43.5 MHa. MY 2018/19 planting is estimated at 43.5 MHa based on the MoAFW's latest *kharif* rice planting estimate, and the expectation of lower plantings of *rabi* rice.

## Production Trend

Rice is the most important staple food crop cultivated across the country, and accounts for more than 40 percent of the country's food grain production. Rice is predominantly a *kharif* season crop, as it requires significant water for transplanting and during major vegetative growth stages. Although an estimated 60 percent of India's rice area is irrigated, planting of the *kharif* season crop closely follows

the onset and progress of the south-west monsoon rains during June/July, and other crop growth stages are highly dependent on monsoon precipitation from July through September. There is a small *rabi* crop cultivated in the irrigated eastern and southern states of West Bengal, Odisha, Andhra Pradesh, Telangana, and Tamil Nadu.



Source: MoAFW, GOI; and FAS/New Delhi for 2018 (MY 2018/19) and 2019(MY 2019/20).

With increasing pressure from urbanization and other high value crops, India’s rice acreage has plateaued at around 44 MHa in recent years. However, production shows steady increases on improving yields due to the new varieties, better agronomic practices, and expansion in irrigation facilities. Various GOI programs, including the [National Food Security Mission](#) and other crop specific programs, have enabled productivity gains in the 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 improving the adoption of newer varieties and technology.

Due to the wider coverage of rice, 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 also active in developing technology for the market, such as hybrid seeds and chemicals to control common pests and diseases. However, agriculture experts are concerned about the sustainability of the current rice production system. 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 intensive cropping systems are repeated year-after year on the same land, leading to deteriorating soil health, declining water tables, and the emergence of new resistant diseases/pests.

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. However, and 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 the growers. Consequently, a significant shift away from rice planting is not imminent, due to a lack of awareness by farmers (and MSP support by GOI) 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. For example, glacier melting may affect the irrigation water supply through perennial rivers originating in the Himalayas. Experts also attribute recent monsoon aberrations, such as intermittent short and heavy rains followed by prolonged dry spells – all of which affect rice cultivation to climate change. In addition, India has a vast coastline and a significant share of rice crop is cultivated in regions susceptible to the ‘potential’ rise in sea levels due to global warming. NARS is working actively on climate change issues related to rice cultivation, including developing salinity-tolerant rice cultivars.

### Basmati (long grain) Rice

Long-grain *Basmati* rice is exclusively grown in the northern Indian states of Punjab, Haryana, West Uttar Pradesh, Uttarakhand, and Himachal Pradesh. The higher yielding *PUSA Basmati 1121* variety (2003) and recently introduced shorter duration semi-dwarf *PUSA Basmati 1509* variety (2013) have driven strong growth in Basmati rice production in the last two decades, and together account for about 80 percent of the total basmati area. However, *Basmati* rice production in MY 2018/19 was estimated lower at 8.2 MMT (1.8 MHa) compared to 9.0 MMT (1.9 million hectares) in the previous year due to weak and late seasonal monsoon. Consequently, *Basmati* prices in MY 2018/19 have been very strong (15-20 percent) compared to last year, supporting farmers’ overall returns from the crop. Consequently, MY 2019/20 *Basmati* rice production is forecast higher at 9.5 MMT from 2.0 MHa, assuming normal 2019 monsoon and weather conditions.

### Hybrid Rice

Most hybrid rice is cultivated in eastern and central India. While there are no reliable published official or industry statistics, market sources report that the area planted with hybrid rice in the last few years has ranged from 1.8 to 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 the consumers.

There are about 60 hybrids developed by both private seed companies and public research organizations, but only 25 hybrids (mostly by private sector) are popular among farmers. Some state government promote hybrids by offering seed subsidies and other support. However, the growth of area under hybrid rice cultivation has been hampered by poor market acceptance due to its: (i) inability to cater to different consumer quality preferences; (ii) relatively low incremental returns compared to higher seed cost; and (iii) poor milling quality over traditional cultivars. Consequently, most of the hybrid rice is marketed to the GOI's MSP procurement program and some quantities are exported to African markets. Nevertheless, several private seed companies and public sector institutions continue to work on developing improved hybrid rice varieties focusing on higher yields and addressing quality concerns.

### Biotechnology

Several public and private sector organizations are working to develop transgenic rice varieties/hybrids to incorporate resistance to various pests, diseases, and abiotic stresses. However, approval and commercialization of transgenic rice are still years away. The policy uncertainty and prolonged 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 IN8129). Meanwhile, several private seed companies and most public sector rice research organizations are increasingly focusing on marker-assisted breeding of rice for resistance to biotic and abiotic stresses and incorporating quality traits.

### **Consumption:**

Rice consumption in MY 2018/19 is estimated at 100 MMT, about 1.2 percent higher than last year and consistent with the current population growth rate. Forecast sufficient domestic supplies and 'large' government grain (rice and wheat) stocks are likely to drive consumption higher than the population growth rate next season. Consequently, MY 2019/20 consumption is forecast to increase by about 2 percent to 102 MMT on expected higher offtake of subsidized government rice under PDS and other programs.

There are no reliable published data or long-term studies on consumption of various staple foods including rice. Being one of the world's fastest growing developing economies, experts report that India's per capita consumption of rice has been stagnant in recent years. 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. However, with the growing economy and expanding middle/upper class, consumers are increasingly replacing a 'basic' food staple like rice with higher protein and higher nutrition items such as pulses, meat, dairy, fruits, and vegetables.

### Food Use

Rice is the key staple in the daily diet of more than 70 percent of the Indian population, and the balance of the population consumes rice regularly along with wheat or other grains. More than 4,000 rice varieties are grown across the country to meet varied consumer preferences. About 40-50 percent of

production is retained by the vast majority of small farmers (90 percent having less than 2 hectares) for their own consumption (locally milled) and seed use.

Most coarse grain, high yielding/hybrid rice is procured by the government or exported. Locally preferred rice varieties are procured by the private trade, and primarily marketed unbranded in bulk. A relatively small, but growing share, of rice is branded and marketed in consumer packaging. The long grain *Basmati rice* and other specialty/fragrant rice varieties are procured by millers for export or sold as branded/packaged rice in the local markets.

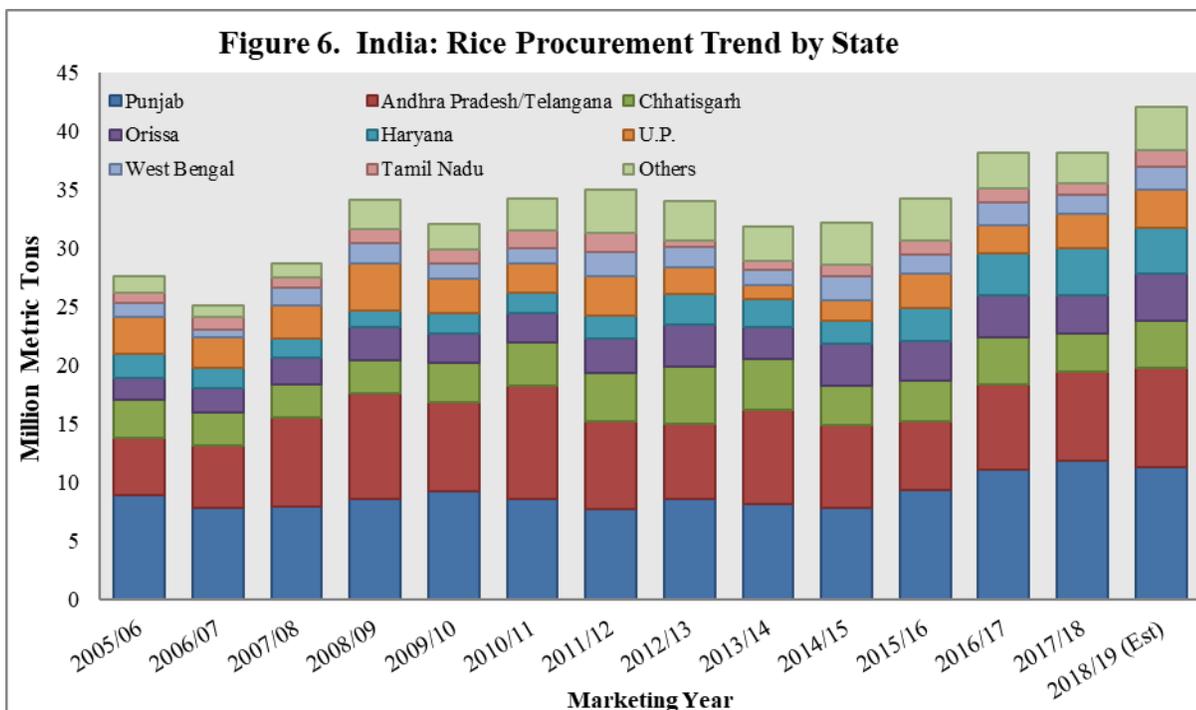
### Feed Use

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 unfit for human consumption is used for alcohol production, mostly for the potable liquor industry, and the by-product DDGS is sold to the feed industry. However, there are no official or reliable industry estimates available for rice for feed consumption or industrial use.

### Procurement and Offtake for Government Programs:

Rice, along with wheat, are the two important food grains for the GOI's food security programs, with the government procuring about 30-35 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 by imposing levies on private mills in other states, or a combination of both. Riding on three consecutive record domestic harvests, government rice procurement under the MSP program has been very strong the last three years.

Besides record domestic supplies, MY 2018/19 procurement has been bolstered by the GOI's decision to raise the MSP by about 13 percent over last year. Official sources estimate rice procurement through March 6, 2019, at 36.3 MMT compared to 30.3 MMT during the same time last year. The pace of rice procurement is likely to slow in the remaining marketing season on expected lower *rabi* harvest. Nevertheless, MY 2018/19 procurement is likely to cross a record 40 MMT, compared to last year's record 38.2 MMT. MY 2019/20 procurement will largely depend on government policies to be announced after the national elections in May 2019.



Source: Food Corporation of India, GOI.

Until the late 1990s, most of the rice obtained under the GOI's MSP procurement program came through a mandatory levy on local millers. Under that program, with some variation among states, local rice millers were required to sell a fixed portion of their milled rice to the government 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 have reduced their purchase of paddy rice for milling. Consequently, the government has been largely procuring paddy rice from the farmers at the MSP, which is subsequently custom-milled by private millers at government expense for storage and distribution through the PDS.

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

Marketing Year	Production (Million Tons)	GOI Procurement <sup>1</sup> (Million Tons)	MSP for Paddy (Unmilled Rice Common variety) Rs. per ton	GOI Economic Cost <sup>2</sup> Rs. Per ton	Offtake from GOI Stocks in Indian Fiscal Year (Apr/Mar) <sup>3</sup> (Million Tons)	PDS Issue Price		
						Rs. per ton		
						APL	BPL	AAY/NFS A
2005/06	91.79	27.58 (30.0)	5,700	13,036	23.99	7,950	5,650	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	109.97	38.11(34.7)	14,700	31,050	33.71	7,950	4,150	3,000
2017/18	112.91	38.18 (33.8)	15,500	32,803	34.40	7,950	4,150	3,000
2018/19 <sup>4</sup>	114.00	40.00 (35.1) <sup>2</sup>	17,500	34,729	na	7,950	4,150	3,000
2019/20 <sup>4</sup>	112.00	na	na	36,019	na	7,950	4,150	3,000

Sources: MoAFW and Food Corporation of India.

Notes: Exchange rate INR 68.60 = US\$ 1 on March 18, 2019

<sup>1</sup> Figure in parentheses is GOI procurement as percentage of total production

<sup>2</sup> GOI total cost includes cost of procurement (MSP), handling, storage, transport, interest, etc.

<sup>3</sup> Offtake includes sales through PDS, other government programs, open market and export.

<sup>4</sup> FAS/New Delhi estimate

PDS - Public Distribution System

APL - Above Poverty Line

BPL - Below Poverty Line

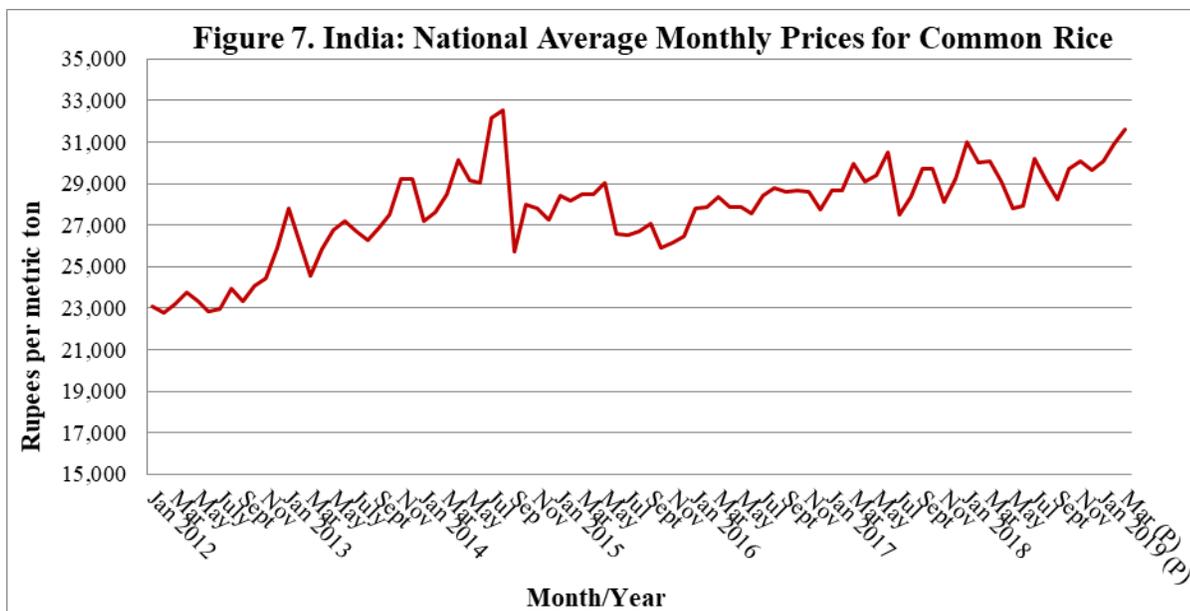
AAY -*Antyodaya Anna Yojana* (Poorest of the Poor)

NFSA-National Food Security Act

With ‘more-than-sufficient’ government rice stocks, offtake of government rice during MY 2018/19 has been strong compared to last year. 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, while the MSP has ballooned by over 75 percent in the past decade.

### Prices

Despite record domestic production, the higher MSP has driven the MY 2018/19 domestic prices right from the beginning of the season. Market prices during the second half of the season are likely to remain steady on the forecast lower *rabi* harvest. However, domestic prices may also respond to international price movements.



Source: [Agmarket News](#), MoAFW, GOI.

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

Prices in Rupees per metric tons				
Year	2016	2017	2018	%Change
Jan	27,827	28,656	31,017	8.2
Feb	27,876	28,648	30,038	4.9
Mar	28,343	29,964	30,099	0.5
Apr	27,836	29,072	29,066	0.0
May	27,856	29,422	27,799	-5.5

Jun	27,541	30,500	27,937	-8.4
Jul	28,393	27,467	30,204	10.0
Aug	28,761	28,370	29,141	2.7
Sep	28,610	29,679	28,246	-4.8
Oct	28,652	29,718	29,736	0.1
Nov	28,599	28,121	30,095	7.0
Dec	27,765	29,213	29,656	1.5
Exchange Rate	68.60	Local Currency/US\$		
Date of Quote	03/18/2019			

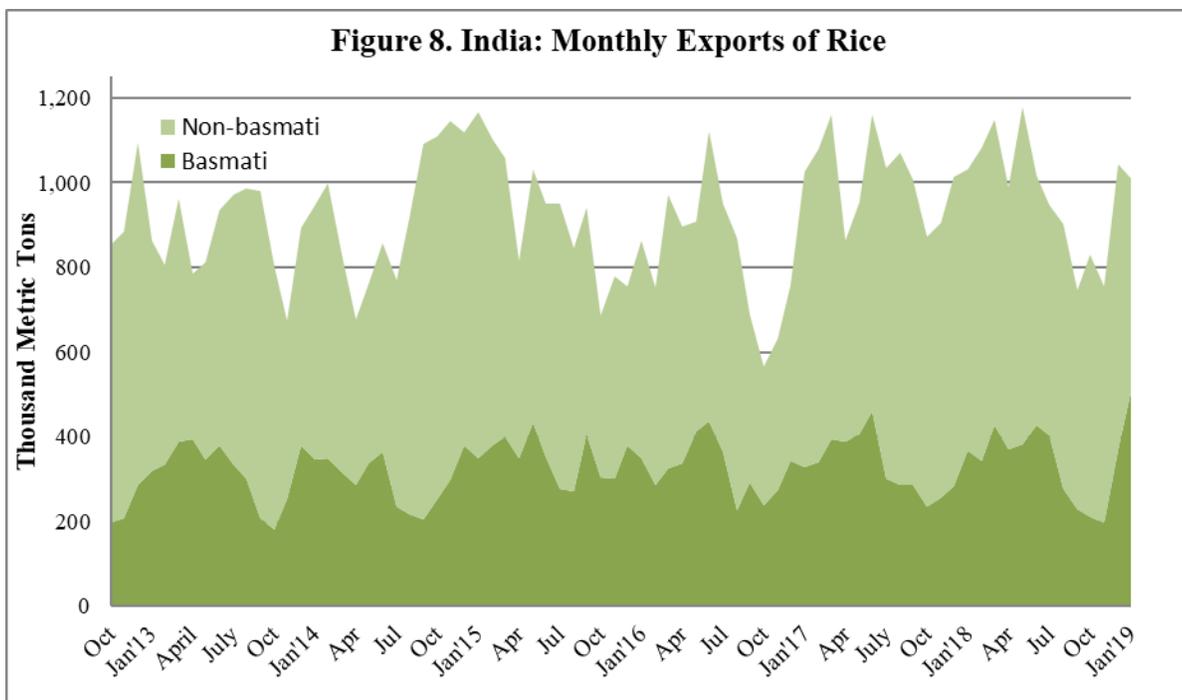
National Average Monthly Wholesale Price of Common Rice

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. Assuming current price parity for Indian rice vis-à-vis rice from competing origins, rice exports in MY 2019/20 are forecast at 12 MMT (8.0 MMT coarse rice and 4.0 MMT *Basmati* rice), the same as last year, on expected sufficient exportable supplies. However, the significant increase in the government MSP for the upcoming season may adversely affect the export competitiveness of Indian rice. Relative price movements in the international market and/or changes in the value of the Indian Rupee vis-à-vis other currencies may also 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 in the upcoming season.

Based on the current pace of monthly exports, Post's MY 2018/19 export estimate is lowered marginally to 12 MMT on relatively weak export demand for non-Basmati rice.



Source: Monthly exports through January 2019 from Global Trade Atlas and Directorate General of Commercial Intelligence (DGCIS), GOI.

Despite sufficient domestic supplies and the government extending an export subsidy for non-*Basmati* rice, coarse rice exports have been slow since the beginning of MY 2018/19 due to relatively weak export demand from traditional African and neighboring markets on uncompetitive prices compared to other exporting countries. Trade sources report a recent surge in exports of *Basmati* rice, largely due to increase in exports to Iran under a special rupee payment arrangement (against India’s import of oil from Iran). Provisional official estimates for rice exports in the first four months of MY 2018/19 are estimated at 3.6 MMT, compared to 3.8 MMT during the same period in MY 2017/18. With the government’s 5 percent export subsidy under the Merchandise Exports from India Scheme (MEIS) ending on March 25, 2019, trade sources expect coarse grain rice exports to slow further in the coming months. Assuming no significant change price parity for Indian rice, and a stable Indian rupee, MY 2018/19 rice exports are estimated lower at 12 MMT (7.8 MMT of coarse rice and 4.2 MMT of *Basmati* rice). However, export prospects may improve if the new government that comes to power after the National elections in May 2019 decide to extend MEIS benefits again to rice exports.

Preliminary CY 2018 export figures from official data indicate export sales totaled 11.9 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 2017		CY 2018
U.S.	165,677	U.S.	176,633
Others		Others	

Bangladesh	1,332,540	Iran	1,138,863
Iran	928,205	Saudi Arabia	1,004,144
Senegal	907,768	Bangladesh	944,706
Saudi Arabia	853,961	Senegal	824,998
Benin	810,725	Nepal	754,116
United Arab Emirates	667,486	United Arab Emirates	621,566
Nepal	608,165	Benin	602,478
Sri Lanka DSR	560,344	Guinea	462,035
Iraq	555,554	Cote D'Ivoire	431,088
Guinea	493,055	Iraq	419,632
Cote D'Ivoire	479,777	Indonesia	350,818
Somalia	368,753	Somalia	317,415
<b>Total for Others</b>	<b>8,566,333</b>	<b>Total for Others</b>	<b>7,871,859</b>
Others Not Listed	3,894,619	Others Not Listed	3,818,102
<b>Grand Total</b>	<b>12,626,629</b>	<b>Grand Total</b>	<b>11,866,594</b>

Source: Global Trade Atlas

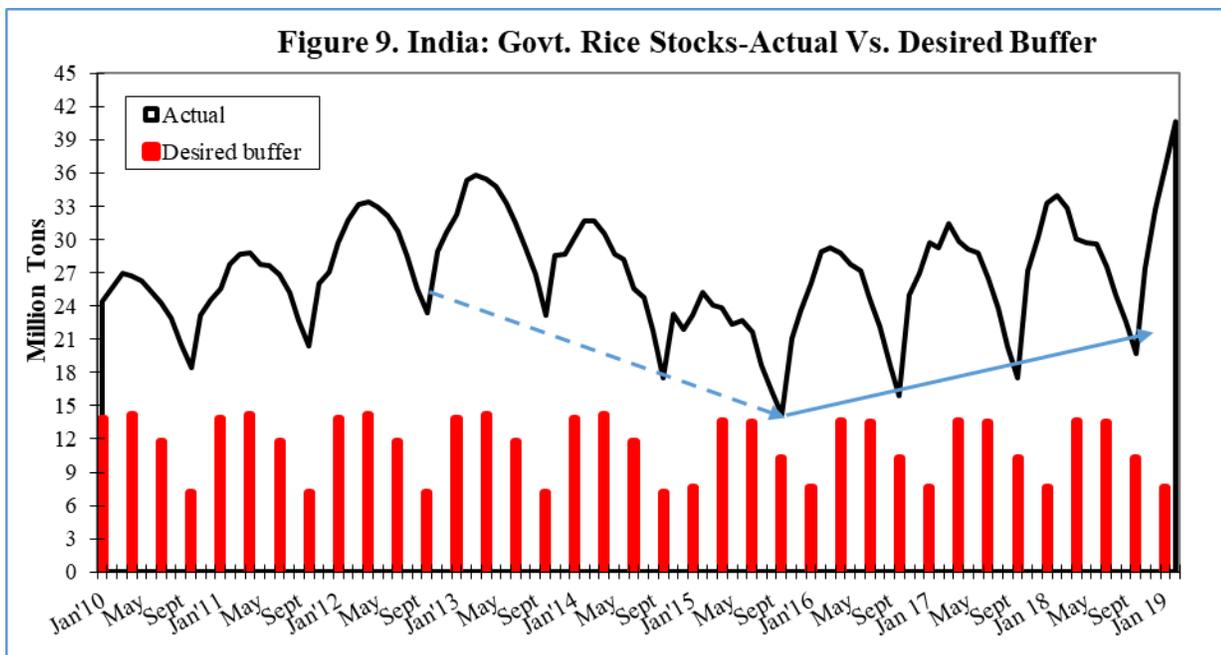
### Tariff

The GOI removed the import duty on rice in March 2008, and there are no other applied/applicable taxes, social surcharge or IGST. However, imports of rice have been negligible in the recent past due to competitive local prices and consumer preferences for local rice varieties.

### **Stocks:**

Largely accounted for by government-held rice, India's rice stocks have been swelling 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 2018/19 ending stocks are estimated at 24.5 MMT. MY 2019/20 ending stocks are forecast slightly lower at 22.5 MMT on forecast relatively tight supplies compared to last year, and an expected stronger push by the GOI to off-load government rice to bring stocks to manageable levels.



Source: Food Corporation of India, GOI

Fueled by strong procurement, government rice stocks on February 1, 2018, were estimated at 40.7 MMT, more than 6.7 MMT higher than last year stocks at the same time, and nearly three times the government's peak desired buffer stocks (13.58 MMT on April 1). Assuming higher than normal monthly offtake in the remaining eight months of the marketing season, MY 2018/19 government-held rice ending stocks are estimated at 21.8 MMT, more than 2 MMT higher than last year. Consequently, Post's MY 2018/19 ending stocks have been raised to 24.5 MMT (21.8 MMT government stocks and 2.7 MMT 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 higher acreage and number of producing states of rice compared to wheat across the country, 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 also have state specific programs for rice growers, including input subsidies on rice transplanters, harvesters, etc. 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 policy makers 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.

On November 22, 2018, the GOI announced that coarse grain non-Basmati rice (NBR) would be eligible for the MEIS benefit of 5 percent of the FOB value for exports from November 26, 2018, to March 25, 2019. While the trade is lobbying for continuation of MEIS benefits, and increasing the subsidy to 10 percent, the GOI is unlikely to take a decision until after the national elections conclude in May. At that time, the new government that comes to power can review the industry demand for extending MEIS benefits.

### **Marketing:**

Indian high-quality *Basmati* rice compete against U.S. rice in several markets, including the Middle East and European Union. India exports increasing quantities of *Basmati* rice and other specialty/fragrant rice to the United States, with demand driven mostly by consumers coming from India, the Middle East and South Asia.

### **Commodities:**

Corn  
Sorghum  
Millet  
Barley

### **Production:**

#### MY 2019/20 Outlook

Coarse grain production in India essentially hinges on the performance of the monsoon, as only about 15 percent of the total cultivated area is irrigated. For the first time, fall armyworm (FAW -*Spodoptera frugiperda*), a major corn pest native to tropical and subtropical regions in the Americas, was detected in the Indian subcontinent in the MY 2018/19 *kharif* season. Fortunately, there was only limited damage due to various factors including heavy rains and intensive human surveillance control measures. However, in the absence of such, there is concern that FAW could establish in the Indian sub-continent, which would negatively affect various crops, including corn.

Assuming a normal 2019 monsoon and overall weather conditions during both the *kharif* and *rabi* growing seasons, MY 2019/20 coarse grain production is forecast to recover to 44.9 MMT, compared to last year's weak 2018 monsoon-affected harvest of 40.9 MMT. Forecast higher production is based on expected increased plantings due to firm domestic prices and trend yields for corn and other coarse grains. Favorable weather conditions (well-distributed rains and low temperatures during December through March) are likely to support a record MY 2019/20 (April/March) barley crop, to be harvested in April. The MY 2019/20 coarse grain production forecast includes 27 MMT of corn, 11.2 MMT of millet, 4.8 MMT of sorghum, and 1.9 MMT of barley. However, weather aberrations and/or an outbreak of FAW in the upcoming season could lower the forecast significantly.

#### MY 2018/19 Performance

Post estimates MY 2017/18 total coarse grain production at 40.9 MMT, significantly lower than last year's estimated record production of 46.9 MMT, due to lower planting and yield prospects for corn and other coarse grains as a result of the below-normal 2018 monsoon in the major *kharif* coarse grain growing areas in central and western India.

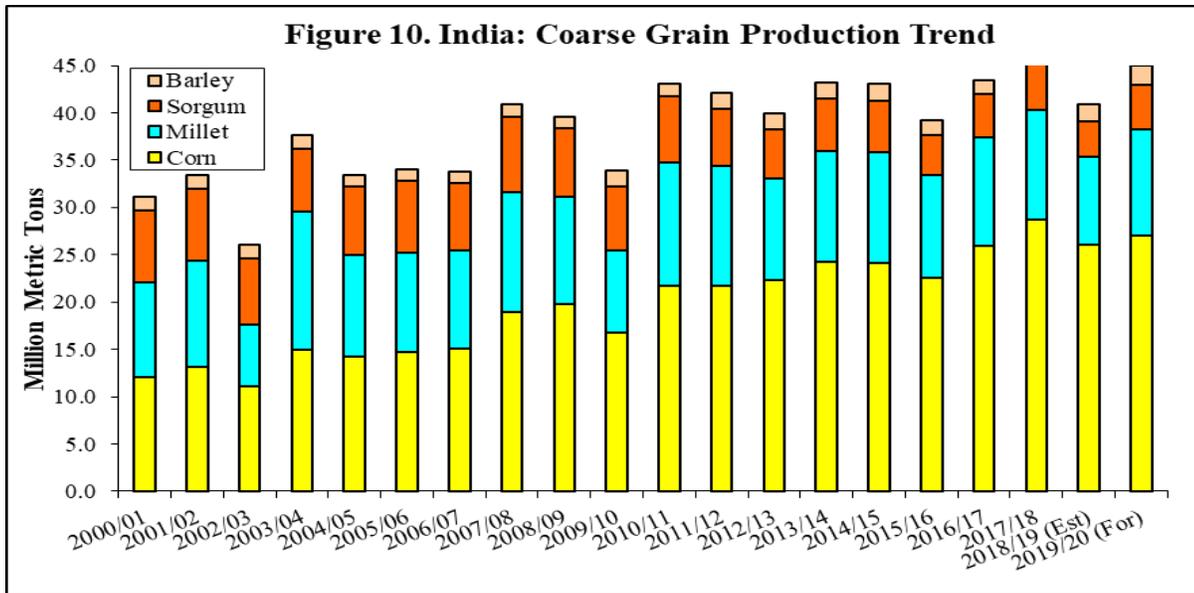
Planting of most *kharif* coarse grains (corn, millet, and sorghum) started under favorable conditions due to timely monsoon rains in June, but insufficient rains and prolonged dry spells from the second week of July through mid-March negatively affected planting and yield prospects. Continued below-normal rains in August/September further negatively affected the crop during the vegetative growth and other critical crop stages, also lowering yield prospects. Market sources report lower overall yields compared to last year for most coarse grains, including corn, in the central and western states.

In July 2018, incidence of FAW infestations in the corn crop was reported in the southern states of Karnataka, Telangana, Andhra Pradesh, and Tamil Nadu, with some isolated incidences in Maharashtra and Orissa. The GOI, along with the governments of the affected states, closely monitored the spread and suggested various control measures. Sources report that the FAW incidences in the *kharif* corn were observed at the early vegetative growth stage; monsoon rains during August/September and various pest control measures helped contain outbreak and potential crop damage. Continued incidence of FAW caused some damage in the small *rabi* corn and sorghum crops in southern India, but no outbreaks were reported in the major *rabi* corn producing states of Bihar and West Bengal.

Data collected from Post's field travel and information from market sources in the major corn growing belt suggest that the current year's harvest has been impacted by a prolonged dry spell in July-August in the *kharif* corn belt; incidence of FAW; and lower planting compared to last year. Consequently, Post continues to estimate MY 2018/19 corn production at 26 MMT, lower than the government's optimistic 2<sup>nd</sup> advance estimate of 27.8 MMT. Weak 2018 monsoon rains affected planting and yields of largely unirrigated sorghum and millet. The MY 2018/19 coarse grain production estimate of 40.9 MMT includes 26 MMT corn (vs. record 28.7 MMT last year), 9.4 MMT of millet (vs. 11.5 MMT last year), 3.75 MMT of sorghum (vs. 4.95 MMT last year), and 1.77 MMT of barley (vs. 1.75 MMT last year).

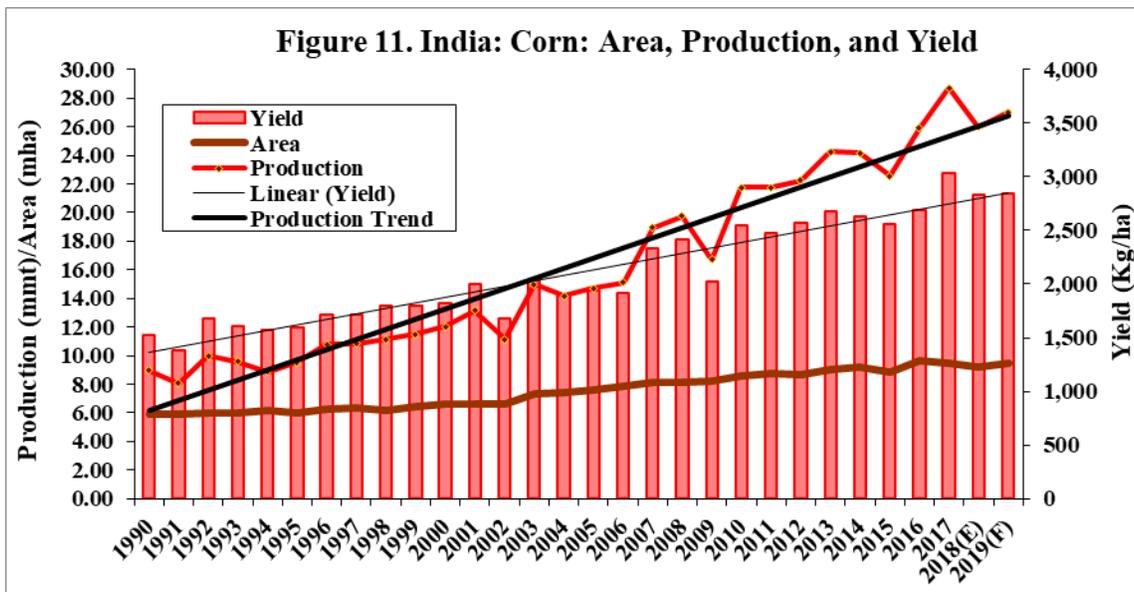
### Production Trend

More than three-fourths of India's coarse grains production is cultivated during the *kharif* season (corn, sorghum and millet); and the remaining one-fourth (corn, sorghum, and barley) are *rabi* season crops. *Kharif* planting and productivity is critically dependent on the performance of the southwest (June-September) monsoon, while the *rabi* harvest depends on residual moisture of southwest (June-September) and northeast (October-November) monsoon precipitation.



Source: Ministry of Agriculture, GOI; and FAS/New Delhi estimates for MY 2017/18 and 2018/19.

Corn accounts for the major share of India’s coarse grain production, and has shown a steady upward trend over the last two decades on growing demand and improved productivity. On the other hand, sorghum and millet cultivation has been declining due to reduced profitability compared to major cereals and other competing crops (pulses, oilseeds, and cotton). India’s weak intellectual property regulations (IPR) and slow agricultural biotechnology regulatory system have precluded any major technological breakthrough for productivity gains in most coarse grains. The exception, to some extent, is corn, wherein companies continue to research and develop newer hybrids with higher productivity gains.



Source: MoAFW, GOI; FAS/New Delhi for 2018/19 and 2019/20

Corn Dominates

India's corn production has been growing steadily over the last two decades due to growing demand (poultry feed and industrial use) and increasing productivity on expanding usage of improved hybrid seeds. The introduction of newer, higher-yielding hybrids, particularly single cross hybrids since the late 1990s, has encouraged farmers to replace traditional varieties with improved varieties. However, MY 2018/19 corn acreage is estimated lower due to dry conditions for the late-planted *kharif* corn and soil moisture stress for post-monsoon *rabi* corn in some states. Strong prices during MY 2018/19 are likely to encourage farmers to plant more corn compared to other competing crops in the upcoming MY 2019/20 season, provided the 2019 monsoon rains are normal across the growing states and season (June-August).

Market sources report that hybrid corn accounts for about 72-75 percent of the planted area, most of which is feed/industrial grade corn, while food grade corn is generally produced using traditional cultivars. Relatively weak international prices have rendered Indian corn uncompetitive in the international market over the last few years. However, growing demand from the rapidly expanding domestic poultry industry, as well as commercial animal feed and starch industries, has more than offset the loss of the export market. Although further expansion of hybrids acreage has slowed in recent years, farmers continue to replace old hybrids with newer higher-yielding hybrid varieties released by the private sector.

#### Sorghum/Millet Stagnate

Since sorghum and millet are cultivated largely under unirrigated conditions in relatively dryland areas, production fluctuates year-to-year depending on the performance of the monsoon. These crops have been plagued in recent years by the absence of any significant productivity-enhancing technological (varietal or agronomic) breakthroughs and/or demand for industrial or commercial usage. Expansion of irrigation infrastructure has also eroded planted area as farmers shift to irrigation intensive/higher profitability crops. Further, industrial sector demand is weak for the two cereals. With increasing MSP-driven procurement and NFSA supplies of rice and wheat, consumers are shifting away from sorghum and millet, influencing farmers' planting decisions for these crops. Over the last two decades, the traditional cultivated area under sorghum and millet has shifted to commercially viable crops like corn, cotton, soybeans, and other higher-value crops.

#### Barley Production Steady on Industrial Demand

Barley is a relatively small winter crop cultivated in northwest India, and its production has been growing steadily on demand from the malting and brewing industry. The MY 2019/20 barley production is forecast at a record 1.95 MMT on reported higher planting. Favorable weather conditions that have helped the wheat crop are also likely to support higher barley yields in the upcoming season.

Traditionally, India produced six-row varieties of barley, which are mostly for food and feed use and unsuitable for malting. Recently, a few high quality, malting grade barley varieties have been developed through public-private breeding programs, and these varieties are steadily replacing older 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 2019/20 is forecast to increase to 45.4 MMT, compared to an estimated 43.2 MMT in MY 2018/19, mostly on higher consumption of sorghum, millet and barley. With the domestic prices expected to soften from the current 'short' supply driven high prices, demand for other coarse grains is likely to recover strongly in MY 2019/20 by various end users (animal feed, industrial and food). However, MY 2019/20 consumption is forecast same as last year on forecast tight supplies. Market sources expect steady growth of the poultry, dairy, and textile sector starch use will continue to fuel demand for corn and other coarse grains, forcing the domestic users to augment requirements through imports, in the near future.

Historically, coarse cereals were the staple diet of Indians for rural and lower income semi-urban households. Since the 1970s, they are being increasingly replaced by rice and wheat due to government's food security programs that provides highly subsidized rice and wheat across the country. Although there has not been any published national consumption survey since [National Sample Survey - Household Consumption of Good and Services in India, 2011/12](#) (see Table 10 of IN4005), changing consumer preferences driven by strong economic growth continues to fuel a steady shift away from coarse grains.

Coarse grains are still an important cereal supplement in the staple diet for a section of subsistence farmers/rural poor due to traditional preference and/or if they are not adequately covered under the government food security programs. Consumption of coarse grains like sorghum and millet is also growing among the health conscious urban consumers, including Indians suffering from diabetes and other life style diseases for their higher fiber and nutrient content compared to rice/wheat.

Due to the growing Indian economy and expanding consuming class (middle and higher income), growing demand for meat/animal protein (poultry and livestock sector) and clothing (starch sector) have been fueling demand for corn in recent years. Industry sources report that over the last decade, the poultry industry has been growing at 5-7 percent, organized dairy (more than 20 animal herds) at 10 percent, and the starch industry (catering to textile industry) at 3-5 percent per annum. However, abnormally high MY 2018/19 corn prices (see below Figure 12) and relatively stagnant poultry meat/egg prices have slowed down the poultry sector during the current season. The starch industry has also been negatively affected by high domestic corn prices, especially in the international market on uncompetitive prices compared other competitors. There is small but growing use of corn for ethanol production, mostly for use by the high-end potable liquor industry for blended whisky and other liquor. Some corn is used to produce traditional foods, snacks, and savories.

## Animal Feed Use

There is no published information on India's animal feed industry by 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 poultry (75 percent), aquaculture (12-15 percent) and dairy cattle (10-12 percent) feed sectors. (See wheat section for more information). Industry sources report that corn and soybean meal dominate the commercial feed market, which is supplemented by other coarse grains and other oilseed meals depending on the comparative

pricing. Small quantities of DDGS from grain based ethanol plants (using broken rice and other inferior quality/damaged grains) are used by poultry and aquaculture feed manufacturers.

**Table 11. India: Usage of Grains, Oil Meals and Other Feed Ingredients**

(Quantity in Million Metric Tons)

Commodity	Quantity	Comments
Corn	15.0-16.0	Largely commercial feed for poultry and aquaculture sector
Wheat	4.8-5.0	Largely farm feed mixes and commercial feed for dairy sector
Other Course Grains	1.5-2.0	Largely farm feed mixes and some for commercial feed for all sectors
Soybean Meal	4.5-5.1	Largely commercial feed for poultry and aquaculture sector
Cotton Seed & Meal	3.7-4.3	Largely farm feed mixes and some for commercial feed for dairy sector
Rapeseed Meal	2.6-2.8	Largely commercial feed and some for farm feed mixes for all sectors
Peanut Meal	1.2-1.6	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
Wheat Bran <sup>1</sup>	3.5-4.5	Largely farm feed mixes and some commercial feed for dairy sector
DDGS	0.2-0.3	Compound feed for poultry sector
Total	38.0-42.0	Compound feed accounts for about 55-60 percent of the total share

Source: FAS New Delhi Estimates based on information from trade sources

<sup>1</sup>Byproduct of the roller flour mills

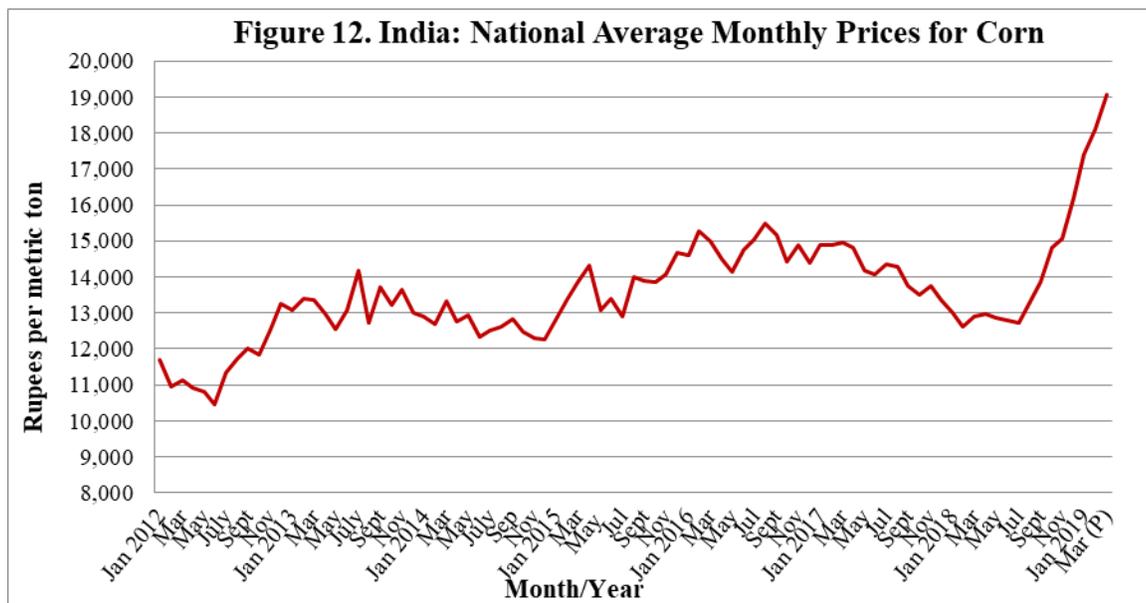
Over the last decade, India's feed industry is reportedly growing at a CAGR of 5-7 percent with poultry, cattle and aqua feed sectors emerging as major growth drivers. Growth of animal feed sector in MY 2018/19 has slowed down considerably (estimated 1-2 percent per annum) on high raw material prices. Experts report a gap in the demand and supply for animal feed – current demand for animal protein and dairy products suggests compound feed consumption demand in Indian fiscal year 2017/18 (April-March) at 27-28 MMT against an estimated supply of 21-22 MMT. This demand-supply gap has expanded in MY 2018/19 and will continue to expand further in future years, which would force the Indian feed industry to source feed ingredients from the international market in 2-3 years.

#### Domestic Corn Market

Despite expected steady demand for poultry feed, starch, and other industrial use, MY 2019/20 corn consumption is forecast at 27.7 MMT, unchanged from the past year, due to relatively tight domestic supplies. Forecast consumption includes 14.8 MMT for poultry feed, 1.4 MMT for other animal feed, 1.8 MMT for starch, 1.5 MMT for ethanol, and the balance for food, seed and other uses. MY 2017/18

corn consumption is revised lower to 27.7 MMT, on estimated lower production of corn due to dry conditions in the western and central India.

The government decision to raise the MSP for corn by a whopping 19 percent over last year and reports of lower crop yields due to a weak 2018 monsoon have shored up domestic corn prices since the beginning of the MY 2018/19 season.



Source: [Agmarket News](#), Ministry of Agriculture, GOI.

Currently the market prices for corn in the major producing and consuming states are nearly 50 percent over last year prices, and more than 11 percent higher than the government’s MSP (INR 17,000 (\$248), per MT), suggesting lower harvest than last year. In MY 2017/18, average market prices in March 2018 was more than nine percent lower than the GOI’s MSP (INR 14,250 (\$208), per MT).

**Table 12. India: Commodity, Corn, Prices Table**

Prices in Rupees per metric ton				
Year	2016	2017	2018	%Change
Jan	14,600	14,896	12,995	-12.8
Feb	15,286	14,897	12,614	-15.3
Mar	14,982	14,947	12,910	-13.6
Apr	14,501	14,815	12,976	-12.4
May	14,129	14,168	12,870	-9.2
Jun	14,762	14,068	12,788	-9.1
Jul	15,015	14,366	12,707	-11.5
Aug	15,505	14,299	13,246	-7.4
Sep	15,169	13,745	13,871	0.9
Oct	14,411	13,488	14,807	9.8
Nov	14,901	13,743	15,078	9.7

Dec	14,381	13,369	16,199	21.2
Exchange Rate	68.6	Local Currency/US\$		
Date of Quote	03/18/2019			

National Average Monthly Wholesale Prices of Corn

Source: [Agmarket News](#), Ministry of Agriculture, GOI

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.

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 the rice milling industry waste (broken rice) and lower quality wheat and coarse grains (not fit for human and animal consumption) to be used for potable liquor and other industrial uses. Small quantities of DDGS (200,000 MMT to 300,000 MMT) from these ethanol plants are used by the animal feed industry.

### Trade:

Indian corn is uncompetitive in the international market due to relatively strong MSP-driven domestic prices vis-à-vis corn prices from other origins. Due to expected tight domestic supplies, Post forecasts MY 2019/20 exports at 200,000 MT (mostly to neighboring Nepal and seed corn exports), and imports higher at 1 MMT, mostly under the existing tariff rate quota (TRQ) of 500,000 MT for an Indian fiscal year (April/March) and some import under advance license.

Indian corn has been priced out of the international market since 2015 due to relatively firm domestic prices largely driven by the government MSPs and strong domestic demand, except for a small window in MY 2017/18 when Indian corn was price competitive in the neighboring markets. With the domestic prices escalating since August 2018, Indian corn has become uncompetitive even in the neighboring markets on relatively weak international prices. Based on the latest official export statistics for the first quarter of trade year 2018/19 and current pace of monthly exports reported by trade sources, MY 2018/19 exports are likely to reach 500,000 MT, mostly feed corn for Nepal and seed corn to traditional markets.

Industry sources have been lobbying with the government to allow corn imports under the TRQ since November 2018 without success due to political reasons. After the national elections are over in May, and *rabi* corn harvest is over by end June, the new government is likely to take a decision depending on the price situation. Assuming current price parity to remain firm after the *rabi* corn is marketed, imports under TRQ may be allowed during the last quarter of MY 2018/19. Consequently, Post estimates MY 2018/19 imports at 500,000 MT.

Historically, India exported small quantities of sorghum and barley, largely to neighboring countries and the Middle East. MY 2017/18 sorghum exports have been revised lower to 125,000 MT based on the

latest GTA data. Strong domestic prices resulted in India turning into a net importer of barley since MY 2016/17, mostly for malting purpose. Back-to-back record domestic harvests are likely to limit MY 2019/20 barley imports to 100,000 on improved domestic supplies of malting barley.

### Tariff

India imposes a basic import duty of 50 percent on sorghum and millet, while the import duty for barley is zero. India allows corn imports under a tariff rate quota (TRQ) of 500,000 MT with a zero percent duty. Imports of corn outside the TRQ are subject to a 50 percent import duty. To import corn under the TRQ, the importer must obtain a Tariff Rate Quota Allocation Certificate issued by the Directorate General of Foreign Trade (DGFT). This certificate is issued in accordance with procedures developed by the EXIM Facilitation Committee.

**Table 13: Import Tariffs on Coarse Grains**

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

\* India has a TRQ of 500,000 on imports of corn at zero duty  
Exchange rate on Feb 18, 2019 1US\$= INR 68.60

### **Policy:**

#### Production

The GOI coverage of policy and programs in terms of number of programs and financial allocations for coarse grains 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 the GOI limits MSP procurement only for food grade grains strictly for distribution for NFSA and other food security programs (excludes feed corn and other non-food use grains). However, few states have undertaken MSP procurement of all corn in their respective states to a limited extent whenever domestic prices went significantly below 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 certified as not fit 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 it may take several years before it can be commercialized. Most biotech events in other coarse grains (sorghum and millet) 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, the GEAC has not approved any GE coarse grains or byproducts for import.

**Marketing:**

Growth of the poultry, livestock, and starch industries and consequent demand for feed ingredients from these sectors will soon outstrip domestic production of corn, eventually creating demand for imported corn and/or corn products like corn-based distiller’s dried grains with soluble (DDGS) in the next few years. Steady growth in the brewing industry will continue to fuel demand for malting grade barley. In MY 2018/19 and MY 2019/20, India is likely to import corn and barley to augment domestic supply shortages.

**Production, Supply and Demand Data Statistics:**

**Table 14. India: Commodity, Corn, PSD**

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

<b>Corn</b>	<b>2017/2018</b>		<b>2018/2019</b>		<b>2019/2020</b>	
<b>Market Begin Year</b>	<b>Nov 2017</b>		<b>Nov 2018</b>		<b>Nov 2019</b>	
<b>India</b>	<b>USDA Official</b>	<b>New Post</b>	<b>USDA Official</b>	<b>New Post</b>	<b>USDA Official</b>	<b>New Post</b>
<b>Area Harvested</b>	9219	9470	9200	9200	0	9500
<b>Beginning Stocks</b>	1337	1337	2296	2296	0	596
<b>Production</b>	28720	28720	27800	26000	0	27000
<b>MY Imports</b>	28	28	500	500	0	1000
<b>TY Imports</b>	27	27	500	500	0	1000
<b>TY Imp. from U.S.</b>	4	4	0	0	0	0

<b>Total Supply</b>	30085	30085	30596	28796	0	28596
<b>MY Exports</b>	1089	1089	500	500	0	200
<b>TY Exports</b>	1076	1076	500	500	0	200
<b>Feed and Residual</b>	16200	16200	17500	16700	0	17200
<b>FSI Consumption</b>	10500	10500	11500	11000	0	10500
<b>Total Consumption</b>	26700	26700	29000	27700	0	27700
<b>Ending Stocks</b>	2296	2296	1096	596	0	696
<b>Total Distribution</b>	30085	30085	30596	28796	0	28596
<b>Yield</b>	3.1153	3.0327	3.0217	2.8261	0	2.8421

**Table 15. India: Commodity, Sorghum, PSD**

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

<b>Sorghum</b>	<b>2017/2018</b>		<b>2018/2019</b>		<b>2019/2020</b>	
<b>Market Begin Year</b>	<b>Nov 2017</b>		<b>Nov 2018</b>		<b>Nov 2019</b>	
<b>India</b>	<b>USDA Official</b>	<b>New Post</b>	<b>USDA Official</b>	<b>New Post</b>	<b>USDA Official</b>	<b>New Post</b>
<b>Area Harvested</b>	4829	4965	5200	4000	0	5000
<b>Beginning Stocks</b>	198	198	308	323	0	148
<b>Production</b>	4950	4950	3750	3750	0	4800

<b>MY Imports</b>	0	0	0	0	0	0
<b>TY Imports</b>	0	0	0	0	0	0
<b>TY Imp. from U.S.</b>	0	0	0	0	0	0
<b>Total Supply</b>	5148	5148	4058	4073	0	4948
<b>MY Exports</b>	140	125	25	25	0	50
<b>TY Exports</b>	140	123	25	25	0	40
<b>Feed and Residual</b>	600	600	300	300	0	500
<b>FSI Consumption</b>	4100	4100	3600	3600	0	4000
<b>Total Consumption</b>	4700	4700	3900	3900	0	4500
<b>Ending Stocks</b>	308	323	133	148	0	398
<b>Total Distribution</b>	5148	5148	4058	4073	0	4948
<b>Yield</b>	1.0251	0.997	0.7212	0.9375	0	0.96

**Table 16. India: Commodity, Millet, PSD**

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

<b>Millet</b>	<b>2017/2018</b>	<b>2018/2019</b>	<b>2019/2020</b>
<b>Market Begin</b>	<b>Nov 2017</b>	<b>Nov 2018</b>	<b>Nov 2019</b>

<b>Year</b>						
<b>India</b>	<b>USDA Official</b>	<b>New Post</b>	<b>USDA Official</b>	<b>New Post</b>	<b>USDA Official</b>	<b>New Post</b>
<b>Area Harvested</b>	9107	9107	8070	8070	0	9000
<b>Beginning Stocks</b>	547	547	597	597	0	297
<b>Production</b>	11550	11550	9400	9400	0	11200
<b>MY Imports</b>	0	0	0	0	0	0
<b>TY Imports</b>	0	0	0	0	0	0
<b>TY Imp. from U.S.</b>	0	0	0	0	0	0
<b>Total Supply</b>	12097	12097	9997	9997	0	11497
<b>MY Exports</b>	0	0	0	0	0	0
<b>TY Exports</b>	0	0	0	0	0	0
<b>Feed and Residual</b>	1500	1500	700	700	0	1200
<b>FSI Consumption</b>	10000	10000	9000	9000	0	10000
<b>Total Consumption</b>	11500	11500	9700	9700	0	11200
<b>Ending Stocks</b>	597	597	297	297	0	297
<b>Total Distribution</b>	12097	12097	9997	9997	0	11497
<b>Yield</b>	1.2683	1.2683	1.1648	1.1648	0	1.2444

**Table 17. India: Commodity, Barley, PSD**

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

<b>Barley</b>	<b>2017/2018</b>		<b>2018/2019</b>		<b>2019/2020</b>	
<b>Market Begin Year</b>	<b>Apr 2017</b>		<b>Apr 2018</b>		<b>Apr 2019</b>	
<b>India</b>	<b>USDA Official</b>	<b>New Post</b>	<b>USDA Official</b>	<b>New Post</b>	<b>USDA Official</b>	<b>New Post</b>
<b>Area Harvested</b>	656	656	677	662	0	725
<b>Beginning Stocks</b>	235	235	245	241	0	201
<b>Production</b>	1750	1750	1770	1770	0	1950
<b>MY Imports</b>	211	211	100	100	0	100
<b>TY Imports</b>	89	89	100	100	0	100
<b>TY Imp. from U.S.</b>	0	0	0	0	0	0
<b>Total Supply</b>	2196	2196	2115	2111	0	2251
<b>MY Exports</b>	1	5	50	10	0	50
<b>TY Exports</b>	1	4	50	10	0	50
<b>Feed and Residual</b>	450	450	450	450	0	500
<b>FSI Consumption</b>	1500	1500	1400	1450	0	1500
<b>Total Consumption</b>	1950	1950	1850	1900	0	2000
<b>Ending Stocks</b>	245	241	215	201	0	201
<b>Total Distribution</b>	2196	2196	2115	2111	0	2251
<b>Yield</b>	2.6677	2.6677	2.6145	2.6737	0	2.6897