Required Report: Required - Public Distribution **Date:** March 31, 2021

Report Number: IN2021-0040

Report Name: Grain and Feed Annual - 2021

Country: India

Post: New Delhi

Report Category: Grain and Feed

Prepared By: Dr. Santosh K Singh, Senior Agricultural Specialist and Mariano J. Beillard, Senior Regional Agricultural Attaché

Approved By: Mariano Beillard, Senior Regional Agricultural Attaché

Report Highlights:

India is heading for its fifth consecutive bumper wheat harvest in the upcoming marketing year thanks to favorable weather conditions in the major wheat growing areas. Assuming normal weather conditions through the harvest (April-May), FAS New Delhi (Post) forecasts marketing year (MY) 2020/2021 (April-March) wheat production at 107 million metric tons (MMT) from 31.6 million hectares, compared to last year's record harvest of 107.9 MMT, on an expected lower yield from last year's record yield. Post forecasts MY 2021/2022 (October-September) rice production at 118 MMT from 44 million hectares with a trend yield of 4.02 MT/hectare. In MY 2020/2021, above-normal 2020 monsoon rains supported record yields. An increase in the government's minimum support price program for rice next year will encourage farmers to favor rice over other crops. Assuming a normal monsoon this summer, MY 2021/2022 coarse grain production is forecast at 47.6 MMT, lower than the MY 2020/2021 record harvest of 49.2 million metric tons.

EXECUTIVE SUMMARY

India is heading for its fifth consecutive bumper wheat harvest in the upcoming marketing year thanks to favorable weather conditions in the major wheat growing areas. Assuming normal weather conditions through the harvest (April-May), FAS New Delhi (Post) forecasts marketing year (MY) 2020/2021 (April-March) wheat production at a near-record 107 million metric tons (MMT) from 31.6 million hectares, compared to last year's record harvest of 107.9 MMT, on an expected lower yield from last year's record yield. Nonetheless, any abnormal increases in temperature in April (during the grain filling/maturity stage) and/or hailstorms during the harvest will affect yield prospects, lowering production from the forecast level.

India's wheat consumption in MY 2021/2022 is forecast at 97 MMT, higher than last year's estimated consumption of 96.6 MMT (includes 11 MMT of 'free' wheat under COVID-19 food relief programs). While the COVID-19 relief programs ended in November 2020, the government is likely to continue to offload excess government grain (wheat and rice) stocks procured under the minimum support price (MSP) program at subsidized prices to reduce government grain stocks. Wheat use for feed and residual is forecast higher at 7.0 MMT compared to 6.5 MMT last year on expected higher supplies of spoiled government wheat stocks.

India is an erratic participant in the international wheat market. It imports wheat in low production years; and exports when local supplies are sufficient and prices are competitive, and/or if the government subsidizes exports. High domestic supplies will keep most foreign wheat out of the Indian market in MY 2021/2022.

Assuming a normal 2021 monsoon (June-September 2021), Post forecasts MY 2021/2022 rice production at 118 MMT from 44 million hectares with a trend yield of 4.02 MT/hectare (rough rice). In MY 2020/2021, above-normal 2020 monsoon rains supported record yields. The rains lowered production costs by requiring less irrigation; leading to higher rice profit margins compared to other crops. An increase in the government's MSP price for rice next year will encourage farmers to favor rice over other crops. With 40 percent of rice acreage unirrigated, a timely and well-distributed 2021 monsoon is critical for forecast area planted and yields. A delayed, erratic, and/or below normal monsoon in the growing regions will lower production by 5-10 MMT, while good rains may augment forecast production by 2-4 MMT over forecast level.

Rice consumption in MY 2020/2021 is estimated at 103.1 MMT, up eight percent from last year, due to the government releasing more than 22 MMT of 'free' rice under various COVID-19 relief programs during April-November 2020. Forecast surplus domestic supplies and 'more-than-sufficient' government grain stocks are likely to support consumption next season; the MY 2021/2022 consumption forecast is marginally higher at 104 MMT as government is likely to push out more 'subsidized' rice under food security relief programs.

India has become the world's leading rice exporter following the government's 2011 removal of its export ban on coarse rice. Post forecast MY 2021/2022 rice exports lower at 14 MMT (10 MMT coarse rice and 4 MMT *Basmati* rice) on expected higher MSP driven domestic rice prices and response from competing origins

India's coarse grain production is dependent on the monsoons as 85 percent of the acreage is unirrigated. Assuming a normal monsoon this summer, MY 2021/2022 coarse grain production is forecast at 47.6 MMT, lower than the MY 2020/2021 record harvest of 49.2 MMT, on trend yields. Favorable weather conditions, combining well-distributed rains and low temperatures from December to February, will support a record MY 2021/2022 (April-March) barley crop (mid-April harvest). The MY 2021/2022 coarse grain production forecast includes 29 MMT of corn, 12 MMT of millet, 4.6 MMT of sorghum, and 1.95 MMT of barley.

COMMODITIES:

WHEAT

TABLE 1: India: Commodity, Wheat, PS&D						
Wheat	**2019/2020**		**2020/2021**		**2021/2022**	
Market Year Begins	**Apr 2019**		**Apr 2020**		**Apr 2021**	
India	**USDA Official**	**New Post**	**USDA Official**	**New Post**	**USDA Official**	**New Post**
Area Harvested (1000 HA)	29319	29313	31357	31357	0	31580
Beginning Stocks (1000 MT)	16992	16992	24700	24700	0	27500
Production (1000 MT)	103600	103600	107860	107860	0	107000
MY Imports (1000 MT)	20	26	25	25	0	25
TY Imports (1000 MT)	20	26	25	25	0	25
TY Imp. from U.S. (1000 MT)	0	0	0	0	0	0
Total Supply (1000 MT)	120612	120618	132585	132585	0	134525
MY Exports (1000 MT)	509	509	2000	2000	0	2000
TY Exports (1000 MT)	595	595	2500	2500	0	2000
Feed and Residual (1000 MT)	6000	6000	6500	6500	0	7000
FSI Consumption (1000 MT)	89403	89409	96585	96585	0	97000
Total Consumption (1000 MT)	95403	95409	103085	103085	0	104000
Ending Stocks (1000 MT)	24700	24700	27500	27500	0	28525
Total Distribution (1000 MT)	120612	120618	132585	132585	0	134525
Yield (MT/HA)	3.5335	3.5343	3.4397	3.4397	0	3.3882

MY = Marketing Year, begins with the month listed at the top of each column.
TY = Trade Year, begins in July for all countries; TY 2021/22 = July 2021-June 2022.

PRODUCTION

MY 2021/2022 Outlook: India is heading for its fifth consecutive bumper wheat harvest in the upcoming marketing year thanks to favorable weather conditions in the major wheat growing areas. Assuming normal weather conditions through the harvest (April-May), FAS New Delhi (Post) forecasts marketing year (MY) 2020/2021 (April-March) wheat production at a near-record 107 million metric tons (MMT) from 31.6 million hectares, compared to last year's record harvest of 107.9 MMT, on an expected lower yield from last year's record yield (extended winter until mid-April).

Area: Above normal 2020 monsoon rains, coupled with its timely withdrawal in the last week of September, provided ideal planting conditions for wheat. The steady increase in the Indian government's minimum support price (MSP) for wheat, combined with aggressive MSP procurement operations last year during the coronavirus (COVID-19) pandemic lockdown period (April-June 2020) encouraged farmers to continue planting wheat in the *rabi* (winter planted) season.[1]

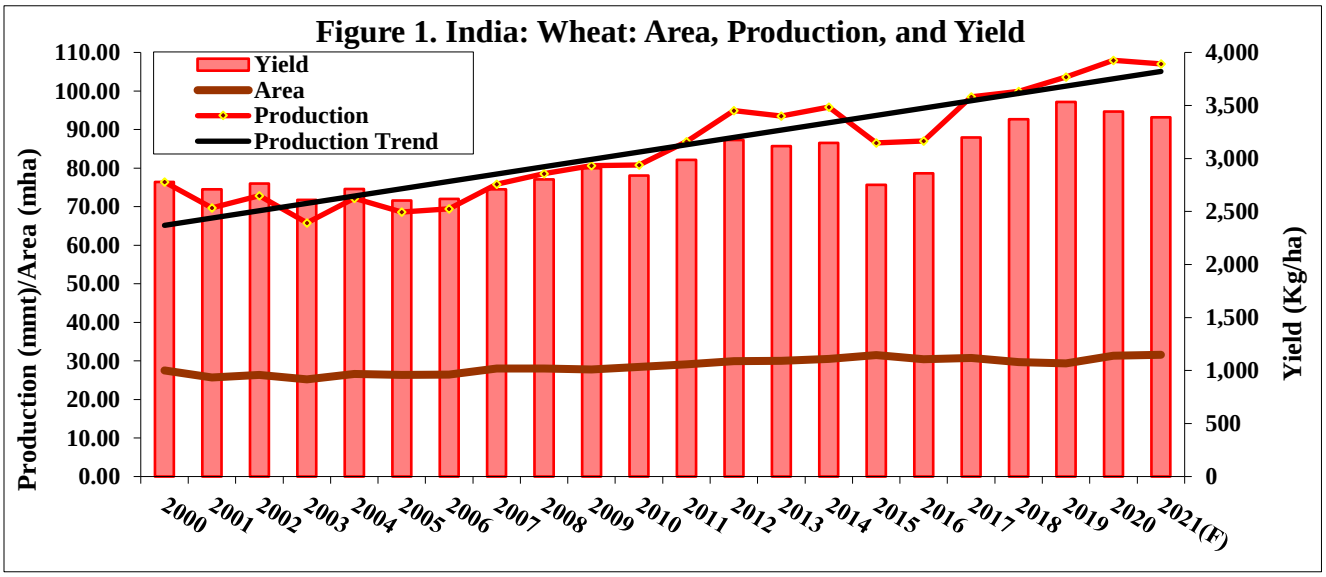
Yield: The early onset of winter in December, with low temperatures, supported the establishment of wheat seedlings. Well-distributed rains throughout December-January came in handy at the critical growth stages (i.e., during vegetative growth, tillering, flowering, and panicle initiation) supporting the development of the

[1] See, GAIN-INDIA -IN2020-0189 India-Grain and Feed Update - December 2020.

standing crop. There have been no major reports of pests or disease outbreaks in the major growing areas. However, the temperature has risen since the first week of March 2021, suggesting an early onset of summer. This raises concerns of terminal heat stress to the crop during the milking/grain filling stages, which could potentially lower yields by 5-10 percent in late planted wheat (November-December) in central India.

Assuming normal weather conditions through the harvest (April-May), Post forecasts marketing year (MY) 2021/2022 wheat production at 107 MMT[2] on expected slightly lower yield of 3.38 metric ton (MT)/hectare, compared to last year's record 3.44 MT/hectare. Nonetheless, any abnormal increases in temperature (with daytime temperature above 40 degrees Celsius) in April (during the grain filling/maturity stage) and/or hailstorms during the harvest will affect yield prospects, lowering production from the forecast level.

Production Trend and Future Challenges: Indian wheat production has exceeded trends in the last five years on higher planting and productivity. Production is up due to the steady increase in the government's MSP, expansion of area planted with new, higher yielding varieties, and generally favorable weather conditions.



Source: Ministry of Agriculture and Farmers Welfare and FAS New Delhi forecast for 2021 (MY 2020-2021).

Wheat is the preferred crop in irrigated areas in the wheat producing states due to increases in the government's MSP prices. Wheat is favored because of its relatively stable yields when compared to other competing *rabi* (winter planted) crops (e.g., corn, pulses, oilseeds, and other coarse grains). Wheat acreage consequently over the last decade has remain stable at between 29-31.6 million hectares.

The Himalayas' perennial river system replenishes the surface (canal) and ground (tube wells) systems in India's northern states, enabling farmers to irrigate five-to-seven times during the crop season; obtaining yields of 4.7-5.1 MT/hectare. By comparison, western and central states depend largely on the residual water from the monsoon rains (June-September) that permit only two-to-four irrigations, limiting yields in the range of 1.6 to 3.5 MT/hectare. Yields in the central and western states, however, have been increasing due to expanded irrigation systems and the adoption of improved varieties.

[2] The Government of India's Second Advance Estimate of February 24, 2021 pegs Indian crop year (ICY) (July-June) 2020/2021 (MY 2021/2022) wheat production at a record 109,2 MMT on forecast record yields (3.5 MT/Ha vs. 3.4 MT/Ha last year). Record yield forecast was based on the crop condition through the second week of February and expected extended winter (low temperatures) through April as observed over the last few years.

Despite the back-to-back bumper harvest, the wheat crop is vulnerable to climate change, particularly the 'earlier-than-normal' onset of summer (terminal heat), and unseasonal heavy rains affecting the crop at the grain filling/maturity stages (March-April). These are concerns for Indian policy makers and researchers alike. The Indian Council of Agricultural Research (ICAR) and various state agricultural universities (SAU) are now involved in developing response mechanisms through agronomic management (i.e., early planting) and technological advances (e.g., short duration varieties) in attempts to mitigate potential climate change risks.

In northern India, over-exploitation of ground water due to flood irrigation is causing problems of soil salinity and declining water tables in the wheat growing belts. Researchers report that farmers may be forced to switch to less water intensive crops like corn, pulses, or vegetables soon. Northwestern wheat growing areas have also reported sporadic incidence of yellow rust in the last few years, but there has been no known incidence of Ug99, a wheat rust of global concern.

The wheat research program under the ICAR\National Agriculture Research System (NARS) continues to work on developing location-specific wheat varieties with traits addressing crop duration, varied soil conditions, rising yield potential, and improved grain qualities through traditional breeding methods. Biotechnology applications in wheat are limited to experimental marker-assisted breeding trials designed to develop resistance to biotic (i.e., diseases, insects, other pests) and abiotic (i.e., temperature, precipitation, and relative humidity, among others) stresses.

Durum Wheat: India produces a small quantity of durum in the central states of Madhya Pradesh, Rajasthan, and Maharashtra, mostly for local food processors. Sources report that India is likely to produce about 1.7 MT of durum wheat in MY 2021/2022, compared to an estimated 1.6 MMT in MY 2020/2021 on higher planting. With the import of high-quality imported wheat (APW) for blending and processing coming to a halt since 2019, durum wheat producers are realizing a 20-25 percent price premium over common wheat.

CONSUMPTION

India's wheat consumption in MY 2021/2022 is forecast at 97 MMT, marginally higher than last year's estimated consumption of 96.6 MMT (includes more than 11 MMT of 'free' wheat under COVID-19 food relief programs). While the COVID-19 relief programs ended in November 2020, the government is likely to continue to offload excess government grain (wheat and rice) stocks procured under the MSP program at subsidized prices to reduce government grain stocks to manageable level. Wheat use for feed and residual is forecast higher at 7.0 MMT compared to 6.5 MMT last year on expected higher supplies of spoiled government wheat stocks.

Food, Seed, and Industrial Use (FSI) Consumption: India's FSI wheat consumption in MY 2020/2021 went up by over eight percent from the previous year. The Indian government offloaded free food grain to over 800 million people as a relief measure in response to the March 2020 national COVID-19 lockdown.[3] With the COVID-19 virus' spreading to vast segments of the population, with many being displaced and/or losing employment, consumer expenditures on wheat increased at the expense of higher-value foods like fruits, dairy, products, and processed food products.

Saddled with high grain stocks, the government will be pressured to offload wheat through the subsidized public distribution system (PDS) and other food security programs, as well as open-market sales for people yet

[3] See, GAIN-INDIA - IN2020-0134 India-Grain and Feed Voluntary - October 2020.

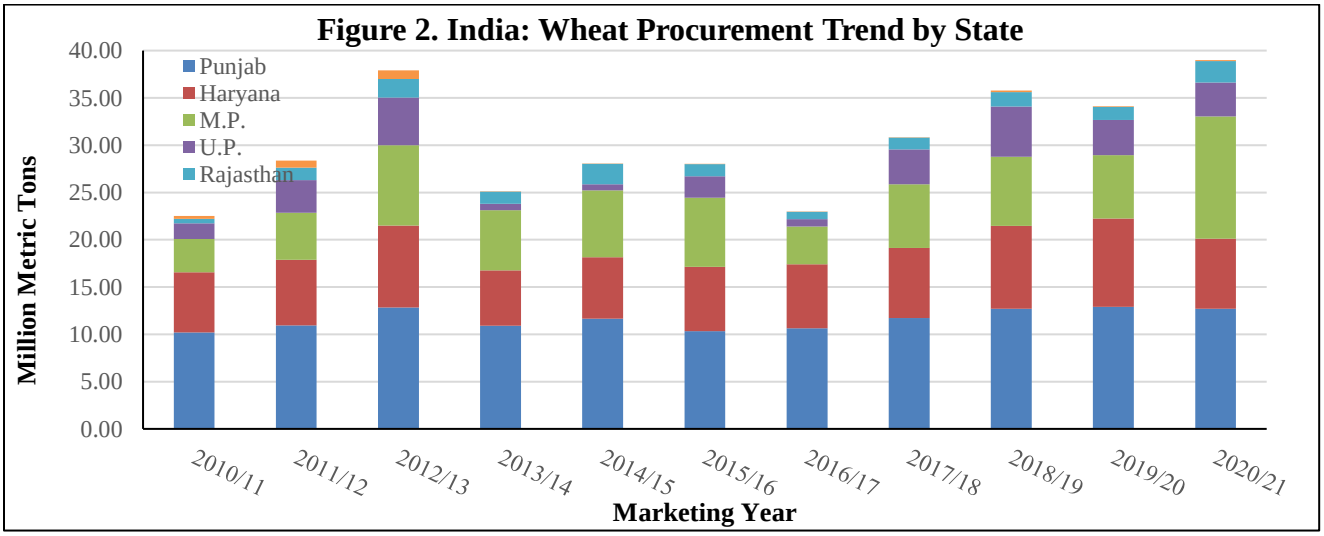
to recover from the COVID-19 economic slowdown. For MY 2021/2022, FSI wheat consumption is forecast to increase to 97 MMT on weak prices and expected higher food spending on "more affordable" staple cereals.

Wheat is the staple food in the traditional wheat growing northwest and central India. It competes with rice in wheat non-growing regions in south and east India. Households, local restaurants, and eateries account for about 80 percent of the wheat domestically consumed in India. Some wheat is used for processed food products such as raised breads, biscuits (cookies), and other bakery items (about 12-15 percent). There is also a small market for high-quality wheat (4-5 MMT) for western-style pasta, and baking/confectionary foods, though this latter use category was adversely affected by the COVID-19 pandemic outbreak. The organized milling sector includes some 1,300 medium-to-large flour mills with a milling capacity of about 25-28 MMT, per year. Market sources report that most mills are operating at 55-60 percent of their capacity, and process about 15-16 MMT of wheat, annually. Much of the wheat produced is milled by the unorganized sector, that is, by small-scale family-owned mills.

Feed Use: Spoiled wheat not deemed fit for human consumption, whether government-held or open market stocks, is used for animal feed - mainly for dairy cattle and buffaloes. Farmers at the household-level will use inferior quality wheat, and wheat bran from the flour milling industry, to feed lactating cows and buffaloes. Due to the likely higher spoilage of 'more-than-manageable' government-held wheat stocks, Post expects a higher use of wheat for animal feed; MY 2021/2022 wheat consumption for feed and residual is forecast at 7.0 MMT, compared to 6.5 MMT last year. [Note: See, Coarse Grain section for information on animal feed use].

Government Procurement and Sales: Back-to-back record harvests, high government MSP, and COVID-19 market disruptions supported MY 2020/2021 government wheat procurement. Volumes reached a record 38.9 MMT, 14 percent over the previous year's level (see, Appendix Table 1). The government is setting a MY 2021/2022 procurement target of 42.7 MMT, but actual procurement may exceed 44 million metric tons.

Figure 2. India: Wheat Procurement Trend by State



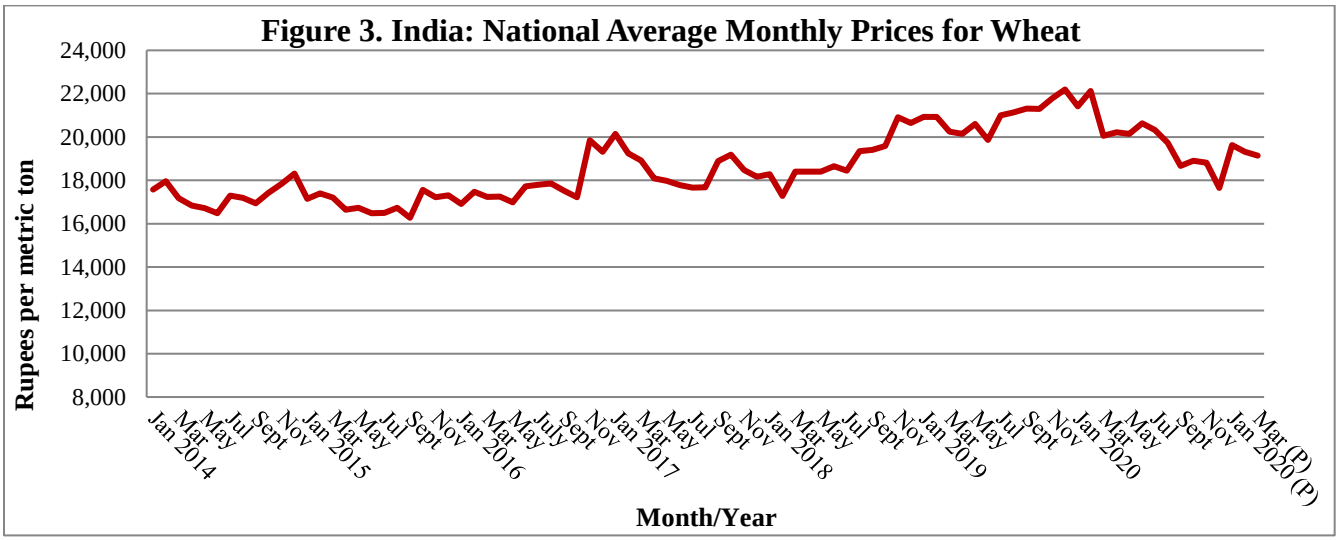
Source: Food Corporation of India, FAS New Delhi office research.

Procurement is set to be higher than last year in most of the wheat growing states given low market prices compared to the MSP (see, Figure 3). With the Food Corporation of India's (FCI) current covered storage capacity estimated at 85 MMT, total wheat and rice stocks by June 2021 will swell above 105 MMT, setting a record level. As a result, some 20 MMT of procured wheat stocks will likely to be kept under open storage structures (covered by tarpaulin sheets on wood plinth), making them vulnerable to losses due to seasonal

monsoon rains, temperature fluctuations, rodents/pests, and pilferage. The government will be under pressure to liquidate its grain stocks through various programs, bringing them down to more manageable levels.

The Indian government distributes around 24 MMT of wheat per annum under the National Food Security Act (NFSA) through the PDS, and an additional 2-3 MMT through other food security programs. Government wheat sales under the open market sale scheme (OMSS) to private traders are estimated at 2.0 MMT in Indian fiscal year (IFY) 2020/2021 (April-March) compared to 3.4 MMT in IFY 2019/2020 based on weak demand due to the supply of 'free' wheat under relief programs.

Prices: In MY 2020/2021, domestic prices have been on the downward trend for most of the season on sufficient domestic supplies and subsidized government wheat sales.



Source: AgMarketNet, Ministry of Agriculture and Farmers Welfare, FAS New Delhi office research.

Spot prices in the first week of March 2021, in the wheat producing states range from India rupee (INR) 16,600 ($228) to INR 18,500 ($254)/MT, well below the MSP of INR 19,750 ($271)/MT, set for MY 2021/2022. Traders see prices being weak this next season which would force the government to make a record MSP procurement, and then dispose of the 'burdensome' wheat load at subsidized prices in the latter part of the marketing season.

TRADE

Imports: India's import duty of 40 percent precludes any major imports of wheat in MY 2020/2021. Imports of wheat and wheat products in MY 2021/2022 are forecast at 25,000 MT, mostly of western-style pastas and baking/ confectionary foods products for the high-end consumer market.

Exports: Provisional official figures from the Directorate General of Commercial Intelligence (DGCIS) for MY 2020/2021 estimate wheat (1.3 MMT) and wheat product exports in April 2020 to January 2021 at 1.6 million metric tons. Indian wheat is likely to be export-competitive only in the neighboring markets due to relatively firm MSP-driven domestic prices compared to competing origins. Assuming continued weak domestic prices, and the current price parity for Indian wheat with those of other origins, MY 2021/2022 wheat exports are forecast at 2.0 MMT, heading primarily to Nepal, Bangladesh, and Sri Lanka, along with wheat flour exports to traditional African and Middle Eastern markets. The volume is heading to Bangladesh, Nepal,

Sri Lanka, and the United Arab Emirates (see, Appendix Table 3). Based on TDM data, MY 2019/2020 imports are revised higher to 26,000 metric tons.

STOCKS

Post forecasts higher government wheat supplies (with higher opening stocks along with forecast record procurement) are likely to push Indian government-held wheat stocks volume up in MY 2021/2022, with ending stocks forecast at 28.5 million metric tons. Estimates of privately held wheat stocks are not available. These are, however, not expected to exceed pipeline stocks of one-month and are unlikely to be higher this year compared to last year. The PS&D table does not include privately held stocks numbers.

POLICY

Research and Development: Wheat and rice are the cornerstone of India's food security policy. The Indian government and the various state governments allocate significant funding to support research, development, and extension activities to educate farmers about new varieties and improved production technologies (e.g., seed, pest management) for these crops. Central and state governments also support farmers by subsidizing inputs (water, fertilizer, seed, power, irrigation, chemicals, and agricultural credit) for crops like wheat.

Price Support and Food Security Programs: Government price support and food security programs include: (i) government MSP procurement of select agricultural crops that ensure remunerative prices to the farmers, and (ii) distribution of food procured under MSP under the NFSA and other programs to ensure food for vulnerable segments of the Indian population. The government establishes the MSP for wheat and others crops on the recommendations of the Commission for Agricultural Costs and Prices (CACP). Government agencies such as the FCI and state marketing agencies have the mandate to procure wheat (and rice) at MSP for central government stocks. The NFSA 2013 creates an entitlement for eligible beneficiaries, covering 50 percent of the urban and 75 percent of the rural populations. Beneficiaries receive 5 kilograms of rice at INR 3.00 ($0.04), wheat at INR 2.00 ($0.02), or coarse grain (millet) at INR 1.00 ($0.01) per kilogram. In years with sufficient grain stocks, the government sells wheat under the OMSS to the private trade to stabilize open market prices.

Trade Policy: Since September 2011, India has no export restrictions on wheat and wheat product exports.

Tariffs: Since April 2019, India's import tariff on wheat (HS-1001) and wheat products is unchanged. Besides the basic custom duty, imports of wheat and wheat products incur the regular social-welfare-surcharge of 10 percent of the basic duty, plus a goods-and-services tax (GST) of 12 percent (see, Appendix Table 5).

Sanitary-Phytosanitary Requirements: High tariffs aside, India's sanitary-phytosanitary (SPS) requirement that a wheat sample drawn from a consignment contain no more than 100 quarantine seeds (more than 50 quarantine seeds species specified)/200 kilogram, and other SPS issues preclude U.S. wheat exports to India.

MARKETING

India is an erratic participant in the international wheat market. It imports wheat in low production years; and exports when local supplies are sufficient and prices are competitive, and/or if the government subsidizes exports. High domestic supplies are likely to keep most foreign wheat out of the Indian market in MY 2021/2022. However, India's growing fast food and bakery/confectionary industries are demanding specialty flours (used in pizzas and burger buns) that require different wheat classes that are not produced locally.

RICE

Table 2. India: Commodity, Rice, Milled, PS&D

Rice, Milled	2019/2020		2020/2021		2021/2022	
Market Year Begins	Oct 2019		Oct 2020		Oct 2021	
India	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested (1000 HA)	43662	43662	44000	44000	0	44000
Beginning Stocks (1000 MT)	29500	29500	29900	29900	0	28900
Milled Production (1000 MT)	118870	118870	121000	121000	0	118000
Rough Production (1000 MT)	178323	178323	181518	181518	0	177018
Milling Rate (.9999) (1000 MT)	6666	6666	6666	6666	0	6666
MY Imports (1000 MT)	0	0	0	0	0	0
TY Imports (1000 MT)	0	0	0	0	0	0
TY Imp. from U.S. (1000 MT)	0	0	0	0	0	0
Total Supply (1000 MT)	148370	148370	150900	150900	0	146900
MY Exports (1000 MT)	12486	12486	15500	15500	0	14000
TY Exports (1000 MT)	14560	14560	15500	15500	0	14000
Consumption& Residual (1000MT)	105984	105984	106500	106500	0	108000
Ending Stocks (1000 MT)	29900	29900	28900	28900	0	24900
Total Distribution (1000 MT)	148370	148370	150900	150900	0	146900
Yield (Rough) (MT/HA)	4.0842	4.0842	4.1254	4.1254	0	4.0231

MY = Marketing Year, begins with the month listed at the top of each column.
TY = Trade Year, begins in January for all countries; TY 2021/22 = January-December 2022.

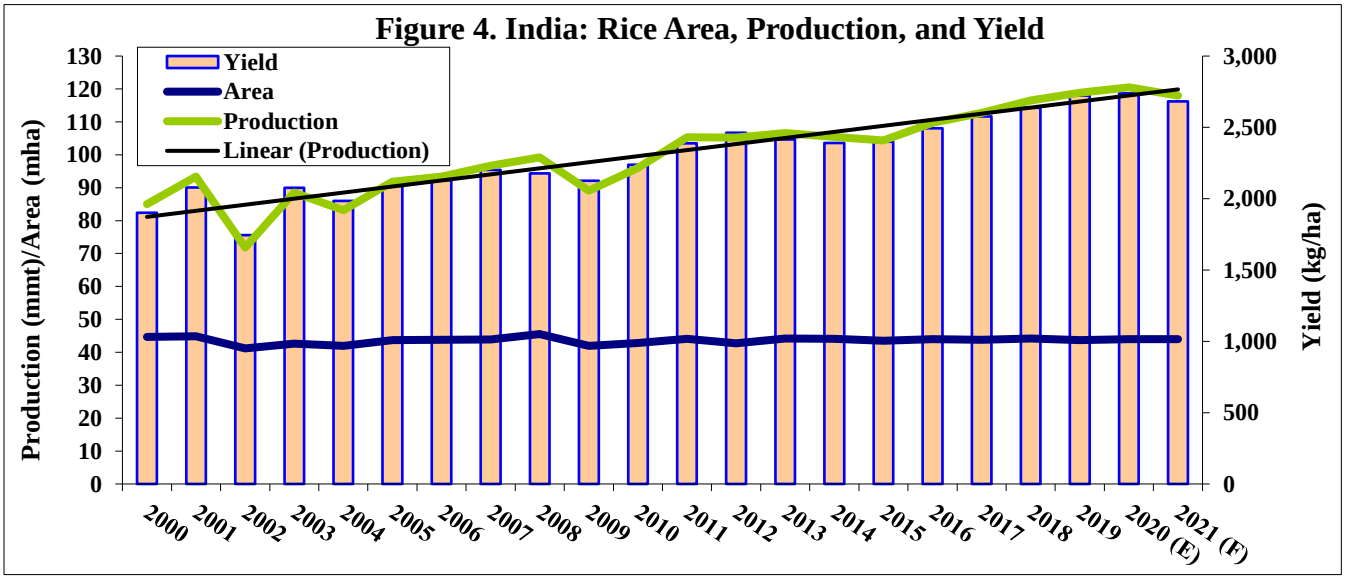
PRODUCTION

MY 2021/2022 Outlook: Assuming a normal 2021 monsoon (June-September 2021), Post forecasts MY 2021/2022 rice production at 118 MMT from 44 million hectares with a trend yield of 4.02 MT/hectare (rough rice). In MY 2020/2021, above-normal 2020 monsoon rains supported record yields. The rains lowered production costs by requiring less irrigation; leading to higher rice profit margins compared to other crops. An increase in the government's MSP price for rice next year will encourage farmers to favor rice over other crops. With 40 percent of rice acreage unirrigated, a timely and well-distributed 2021 monsoon is critical for forecast area planted and yields. A delayed, erratic, and/or below normal monsoon in the growing regions will lower production by 5-10 MMT, while good rains may augment forecast production by 2-4 MMT over forecast level.

Post estimates MY 2020/2021 rice production at a record 121 MMT, with 104.5 MMT in the *kharif* (fall harvest) and 15.5 MMT in the *rabi* (winter plantings). Last year's total production came in at 118.6 MMT (102.3 MMT *kharif* and 15.6 MMT *rabi*). Post's estimate is higher than the Indian government's ICY 2020/2021 second advance estimate of 120.3 MMT, which is subject to future revisions.

India's long-grain aromatic *Basmati* rice is grown in the northern Indian states of Punjab, Haryana, West Uttar Pradesh, Uttarakhand, and Himachal Pradesh. Due to weak demand from Iran, *Basmati* rice prices and profit margins for growers in MY 2020/2021 are weak (5-10 percent) compared to last year. With a normal 2021 monsoon and weather conditions, MY 2021/2022 *Basmati* rice production is forecast lower at 9.0 MMT from 2.0 million hectares, compared to 9.8 MMT from 2.2 million hectares last year. High-yielding PUSA *Basmati* 1121 variety (since 2003), and the shorter duration semi-dwarf PUSA *Basmati* 1509 variety (2013) account for 80 percent of the total basmati area planted in MY 2020/2021 and will maintain their share in MY 2021/2022.

Production Trends and Future Challenges: Rice is India's most important food crop, representing 40 percent of food grain production. Predominantly a *kharif* season crop, requiring significant water for its transplanting, planting of the *kharif* rice crop follows the onset of the southwest monsoon (June-July), and its progress through September helps critical crop growth stages. There is a small winter planted *rabi* rice crop cultivated in the irrigated eastern and southern states of West Bengal, Odisha, Andhra Pradesh, Telangana, and Tamil Nadu.



Source: Ministry of Agriculture and Farmer Welfare, FAS New Delhi for 2020 (MY 2020/2021) and 2021 (MY 2021/2022).

Indian rice production has been above the trend line in the past four years due to increasing yields on favorable monsoon rains. Rice acreage has plateaued at 44 million hectares; acreage faces competition from urbanization and high-value crops. Production has grown steadily in recent years on increasing yields due to favorable monsoon rains and new and improved varieties, better agronomic practices, and expansion of irrigation infrastructure. The National Food Security Mission and other crop specific programs have enabled steady productivity gains in the lower yielding eastern and southern states. Public sector research is focused on developing new rice varieties/hybrids and crop management practices for improving yields and/or tackling common pests/diseases for various agro-climatic conditions. The private sector is active in developing hybrid seeds and chemicals to control common pests and diseases. India's overall rice yields, however, are still well below the world average, with wide variations in productivity among the producing states.

Despite production increases, agricultural experts are concerned with the sustainability of rice production in several states, including vulnerability to climate change. Several states follow intensive, rice-based cropping systems (rice-wheat or rice-rice) which are leading to deteriorating soil health, declining water tables, and the emergence of new resistant diseases/pests. Rice is the major crop in the coastal regions, and susceptible to a potential rise in sea levels. Reports of glacier melt may affect irrigation water supply from Himalayan perennial rivers watering northern and eastern states. Recent monsoon aberrations - intermittent short spell of heavy rains, followed by prolonged dry spells - are attributed to climate change and may affect rice cultivation.

Some hybrid rice is cultivated in eastern and central India, mostly produced for the MSP program and for export (of lower cost rice) to Africa. There are no reliable published statistics, but sources report that the area planted to hybrid rice last year was 2.0 million hectares. Several public and private sector organizations are working to develop transgenic rice varieties/hybrids to incorporate resistance to various pests, diseases, and

abiotic stress, but commercialization of transgenic rice is years away (see GAIN-INDIA - IN2020-0148 - India Biotechnology Annual 2020). Public and private sector rice research focuses on marker-assisted rice breeding.

CONSUMPTION

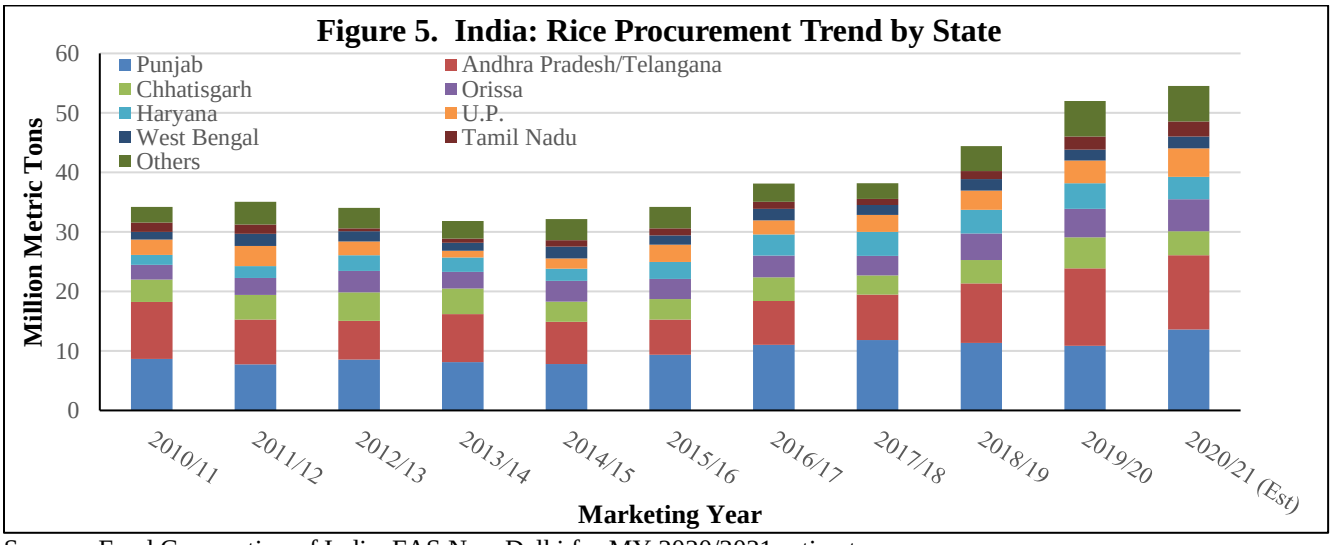
Rice consumption in MY 2020/2021 is estimated at 103.1 MMT, up eight percent from last year, due to the government releasing more than 22 MMT of 'free' rice under various COVID-19 relief programs during April-November 2020. Forecast surplus domestic supplies and 'more-than-sufficient' government grain stocks are likely to support consumption next season; the MY 2021/2022 consumption forecast is marginally higher at 104 MMT as government is likely to push out more 'subsidized' rice under the NFSA and other programs.

Food/Seed Use: Rice is the major staple cereal for 70 percent of the population, with the balance consuming rice with wheat, or other cereals. India grows more than 4,000 rice varieties. The vast majority (90 percent) of farms are small (less than 2 hectares), and farmers retain 45-50 percent of production for their own consumption (locally milled) and seed use. Most of the coarse rice production (high yielding/hybrid rice) is procured by the government, with smaller quantities purchased by private trade for exports. Locally preferred rice cultivars are procured by private trade and marketed in bulk and unbranded. A small, but growing, share of rice is branded and marketed in consumer packaging. Long grain *Basmati rice* and other specialty/fragrant rice varieties are procured by millers for export, as well as for domestic sales in bulk or branded/packages.

Feed and Industrial Use: The livestock feed industry uses small quantities of broken rice and de-oiled rice bran as fillers in commercial feed. A small quantity of broken/damaged rice deemed unfit for human consumption is used in alcohol production, mostly by the bottled liquor industry, with the distiller's dried grains with solubles (DDGS) going to animal feed. There are no official nor reliable industry estimates for rice for feed consumption or industrial use. Sources estimated use at 3-5 MMT, mostly in milling by-products.

Government Procurement and Sale Under Programs: Beside wheat, rice is the other food grain in the Indian government's food security programs, with the government procuring 38-45 percent of total rice production in recent years (see, Appendix Table 6). The government procures rice in various states, either by directly buying un-milled paddy rice from farmers through various agencies and having it custom milled, or by imposing levies on private mills. Riding on five record harvests and rising MSPs, government procurement has increased.

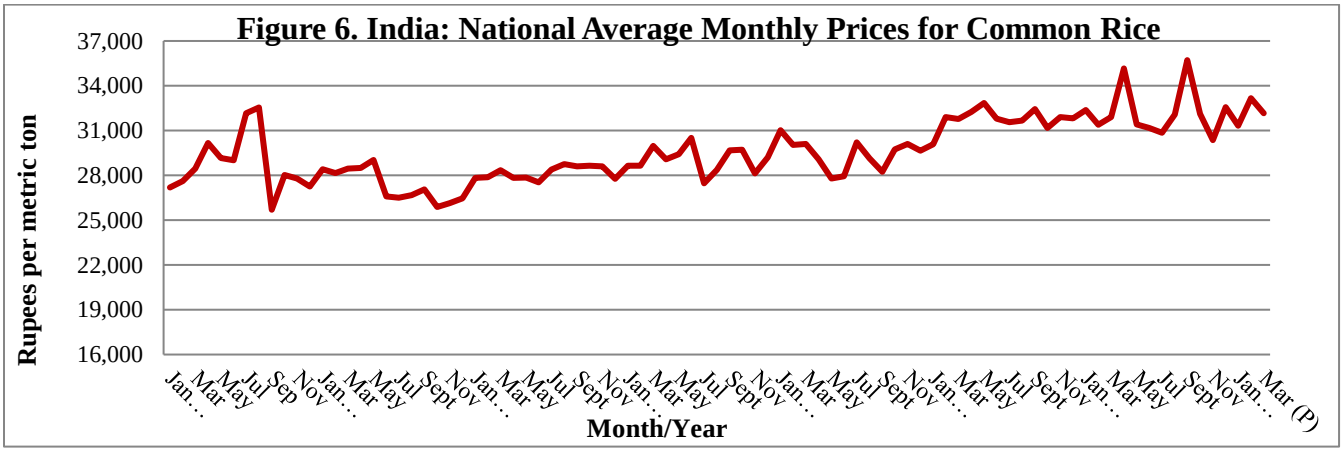
Figure 5. India: Rice Procurement Trend by State



Source: Food Corporation of India, FAS New Delhi for MY 2020/2021 estimate.

Record harvest and weak domestic prices are fueling MY 2020/2021 procurement higher than last year; rice procurement through February 2021 is estimated at 44.5 MMT, compared to 38.1 MMT during the same period last year. The pace of rice procurement will remain steady this marketing season due to the expected good *rabi* harvest. While the COVID-19 relief programs ended in November 2020, the government is likely to distribute more food grains (rice and wheat) in 2021 and into 2022 to ensure sufficient food supplies.

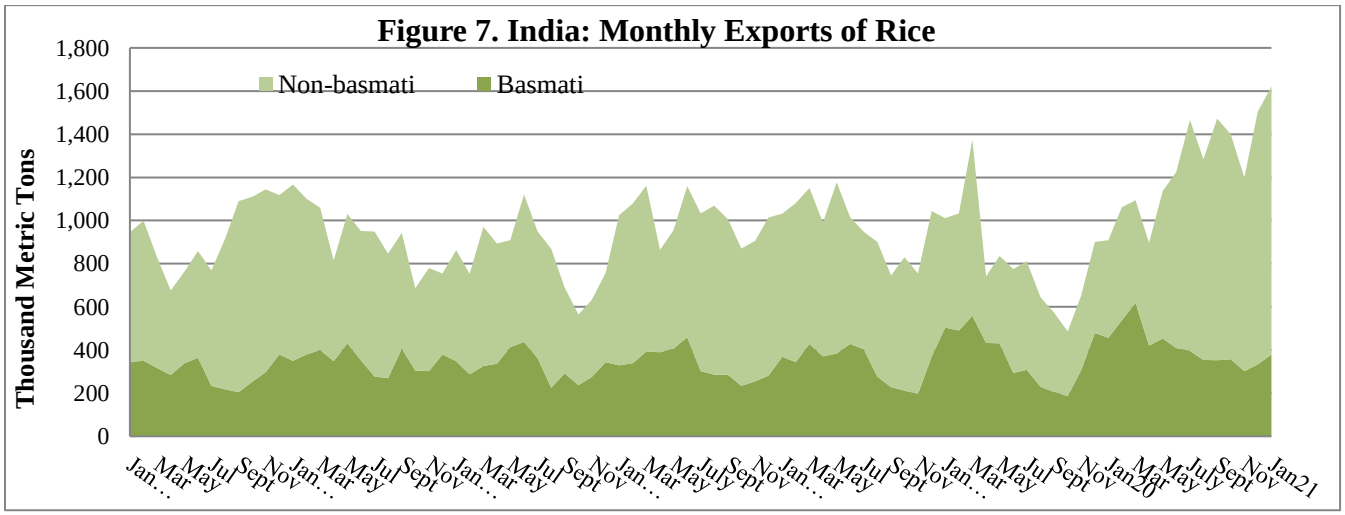
Prices: India's MY 2020/2021 domestic rice prices are holding steady thanks to the government of loading significant amounts of subsidized rice, which subdues potential price increases. Market prices during the balance of MY 2020/2021 will remain stable on expected good *rabi* harvest but may be affected by export demand and international price movements.



Source: AgMarketNet, Ministry of Agriculture and Farmers Welfare, FAS New Delhi office research.

TRADE

India has become the world's leading rice exporter following the government's 2011 removal of its export ban on coarse rice. Rice exports in MY 2020/2021 are estimated at a record 15.5 MMT (111.5 MMT coarse rice and 4 MMT Basmati rice), an increase of 24 percent over the previous year. Post forecast MY 2021/2022 rice exports lower at 14 MMT (10 MMT coarse rice and 4 MMT *Basmati* rice) on expected higher MSP driven domestic rice prices and response from competing origins. India is unlikely to restrict rice exports.



Source: Directorate General of Commercial Intelligence (DGCIS), FAS New Delhi office research.

Official estimates for MY 2020/2021 rice exports during October 2020 to January 2021 are pegged at 5.7 MMT, compared to 2.9 MMT during the same period last year, largely on strong exports of coarse grain rice to the traditional Middle East and African markets. Based on the preliminary official export figures, MY 2020/2021 exports are estimated at 12.6 MMT, mostly to Saudi Arabia, Iran, Nepal, and African countries.

STOCKS

India's MY 2021/2022 ending stocks are forecast lower at 24.9 MMT on expected higher sales of government rice. Fueled by record procurement, government rice stocks on February 1, 2021, were estimated at 50.4 MMT compared to 44.8 MMT at the same time last year, and four times the government's peak buffer stocks (13.5 MMT on April 1). Assuming higher monthly offtake in the remaining marketing season, MY 2020/2021 government ending stocks are estimated at 25.5 MMT, and private stocks at 3.5 million metric tons. India's rice stocks in the PS&D table are for government held stocks. There is no published data on privately held rice stocks, but these reportedly range of 2.0 to 4.0 MMT, depending on the market situation.

POLICY

Production Developments and Market Support: The Indian government and various state governments follow similar production and market support policies for rice and wheat. Given the broader spread of coverage of rice across most states, there are various rice-specific development schemes such as the Special Rice Development Program (SRDP) and Promotion of Hybrid Rice (price subsidies on seed). Several state governments have also sponsored programs for rice growers, including input subsidies on rice transplanters and harvesters. The Indian government provides price support, procurement, and distribution programs for rice.

Trade Policy: India's trade policy imposes no export restrictions on rice. Besides high tariffs on rice imports, India's trade policy stipulates that rice imports must be routed through the Food Corporation of India. India bans the import of genetically engineered rice (see, GAIN-INDIA - IN2020-0148 - India Biotechnology Annual 2020).

Tariffs: Import tariffs on rice have remained unchanged for the last few years. There are no other applied/ applicable taxes, social surcharge, or Indian GST on rice (see, Appendix Table 5).

MARKETING

Indian high-quality *Basmati* rice competes with long grain U.S. rice in several markets, including in Middle Eastern countries and the European Union. Indian exports of *Basmati* rice and other specialty/fragrant rice to the United States, the Middle East, and South Asia has been rising in recent years. India's own high rice import duties and restrictive import policy, coupled with competitive local rice prices and consumer preferences for local cultivars, often rule out Indian imports of foreign-origin rice.

COARSE GRAINS – CORN, MILLET, SORGHUM, AND BARLEY

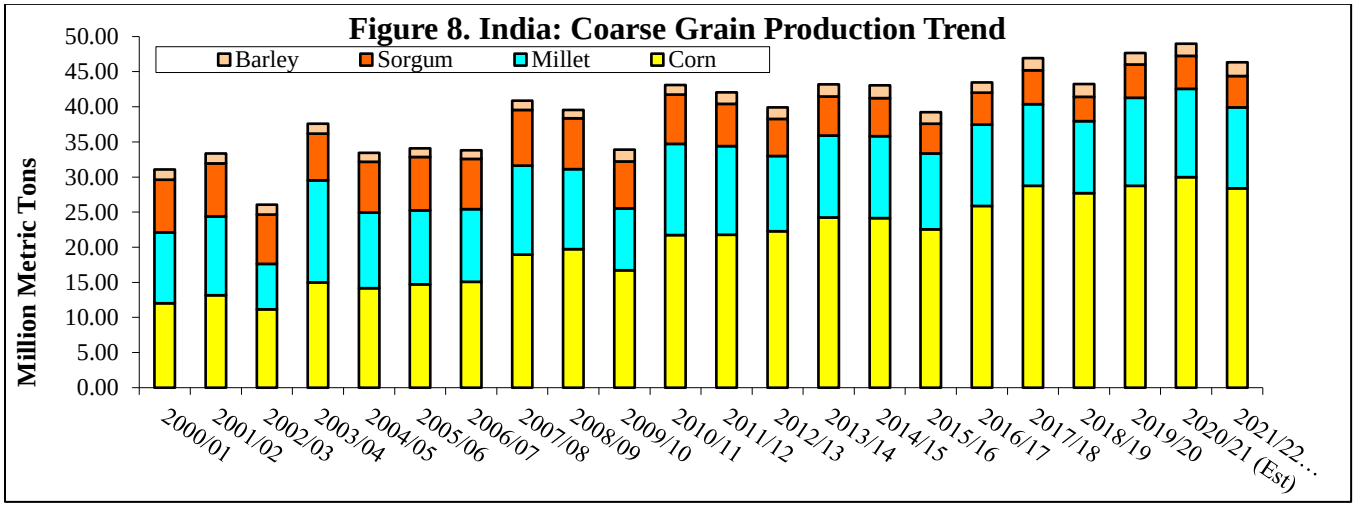
PRODUCTION

MY 2021/2022 Outlook: India's coarse grain production is dependent on the performance of the monsoon as 85 percent of the acreage is unirrigated. Assuming a normal monsoon this summer, MY 2021/2022 coarse grain production is forecast at 47.6 MMT, lower than the MY 2020/2021 record harvest of 49.2 MMT, on trend yields. Favorable weather conditions, combining well-distributed rains and low temperatures from December to February, will support a record MY 2021/2022 (April-March) barley crop (mid-April harvest). The MY 2021/2022 coarse grain production forecast includes 29 MMT of corn, 12 MMT of millet, 4.6 MMT of sorghum, and 1.95 MMT of barley.

The COVID-19 outbreak in India, along with national lockdowns to mitigate its spread, has disrupted the Indian poultry industry. Compounding the adverse disruptive effects of the pandemic have been the early 2021 reported outbreaks of avian influenza (bird-flu) in several of the Indian states, which is contributing to further depress corn prices. Expected weak end-of-season prices are likely to lower corn plantings in MY 2020/2021.

India's total coarse grain production in MY 2020/2021 is estimated at a record 49.2 MMT for corn, millet, and sorghum due to the outstanding 2020 monsoon. The rains support coarse grains yields in the central and western Indian grain belt. Despite the 2018 incidence of the fall armyworm (FAW - *Spodoptera frugiperda*), above-normal rains and monitoring/control measures mitigated against losses in MY 2020/2021.

Production Trends: Over three-fourths of India's coarse grain production is cultivated during the *kharif* season (corn, sorghum, and millet), with the balance cultivated in the rabi season (corn, sorghum, and barley).



Source: Ministry of Agriculture and Farmers Welfare, FAS New Delhi for MY 2020/2021 estimate and MY 2021/2022 forecast.

Corn: Corn production has shown a steady, upward trend due to demand from feed manufacturers and the starch industry, coupled with improved hybrid seeds' productivity. Sorghum and millet cultivation is declining, with acreage shifting to more profitable cereals (rice, wheat, corn, and pulses) and competing crops (oilseeds and cotton). The private sector, including the major multinational corporations, has been developing high-producing corn hybrids for some time. Hybrid corn, accounting for 75 percent of the planted area, goes mainly to feed and industrial use. Food grade corn is produced utilizing traditional cultivars in northern India.

Other Coarse Grains: Sorghum and millet production, mostly unirrigated, fluctuates yearly depending on the monsoon's performance. These crops have not experienced any major productivity-enhancing technological (varietal or agronomic) breakthroughs, nor increased demand for industrial or commercial usage. With rising supplies of subsidized rice and wheat through India's food security programs, consumers are shifting away from sorghum and millet, eroding these crops' profitability. Barley is now a relatively small winter crop cultivated in northwest India, with a production of 1.7-2.0 MMT based on weather conditions. India traditionally produced six-row varieties of barley for food and feed use, which were unsuitable for malting. Recently, high-quality/malting grade barley varieties have been developed to replace traditional varieties.

CONSUMPTION

Coarse grain consumption in MY 2021/2022 is forecast higher at 45.8 MMT on recovery in demand from the corn feed industry. Despite weak demand from the poultry industry, MY 2020/2021 coarse grain consumption is estimated at 47.4 MMT, a four percent increase from last year fueled by sufficient supplies and weak prices (see, Appendix Table 9). Reduced demand for corn and coarse grains by the poultry sector is offset by higher use for food, starch manufacturing (used by textile sector), and dairy and other livestock sectors.

In the last two decades, India's growing economy and expanding consumer-class (middle- and higher-income levels) have fueled demand for animal protein and clothing (starch sector) which, in turn, has driven demand for corn. The dairy sector and starch industry were less affected by COVID-19, unlike the poultry industry where disruptions have contributed to a weakening of corn and coarse grain prices. Also, there is a small (3 MMT), but growing use of low-quality corn and other coarse grains for the high-end bottled liquor industry. During the COVID-19 outbreak, in-home consumption of corn and the other coarse grains increased.

Animal Feed Use: India has a large dairy sector, though it is one mostly composed of small backyard operations with two-to-three animals (i.e., lactating cows or Indian water buffaloes). There is limited utilization of compound feed, relying instead on mainly homemade feed mixes of oilcake, household food waste, and inferior quality wheat and grains. Dairy farmers are replacing low-yielding cattle breeds with higher yielding crossbred cows and water buffaloes, but which require high-energy feed. Herd renewal is fueling increasing demand for commercial dairy feed, which is growing by 10-12 percent yearly. There is, however, no government nor reliable industry sources for India's animal feed use or production.

Sources inform that commercial feed may account for up to half of the total animal feed market. The commercial feed industry caters to the poultry (72-75 percent), aquaculture (12-15 percent), and dairy cattle (10-12 percent) feed sectors. Sources report that corn and soybean meal are the leading ingredients used by the commercial feed industry, supplemented by other coarse grains and oilseed meals, inferior quality wheat, wheat bran, and low-quality broken rice (milling waste). Small quantities of DDGS from grain-based ethanol plants are used by poultry and aquaculture feed manufacturers (see, Appendix Table 11).

Food Use: Traditionally, other coarse grains - millet, sorghum, and barley- were the staple diet for rural and lower-income, semi-urban households in India. However, with the Green Revolution's production gains and food security programs' subsidized rice and wheat, the other coarse grains are being replaced in food baskets. However, there is increased consumption of sorghum and millet (i.e., nutri-cereals) among a small population of 'health conscious,' urban consumers seeking to incorporate into their diets high-fiber, nutrient rich grains.

Industrial Use: The starch industry depends on corn (2.5 MMT) for industrial textile use. India's domestic ethanol program uses molasses (a sugar byproduct) as feedstock instead of cereal grains for ethanol production.

There are, however, small quantities of ethanol produced from rice milling industrial waste (i.e., broken rice), as well as poor-quality wheat and coarse grains (1.5-2 MMT) going to bottled liquor and industrial use. There is a limited quantity of DDGS (250,000-300,000 MT), derived from ethanol production, going to animal feed.

TRADE

Corn: In June 2020, India re-emerged as a corn supplier to neighboring markets based on competitive pricing, proximity to markets, and the possibility of shipping smaller consignments overland. Assuming current price parity for Indian corn versus that of other origins, Post forecasts MY 2021/2022 exports at 1.2 MMT, and imports at 300,000 MT on expected relatively tight domestic supplies. Imports will be largely duty-free imports under advance license by the starch industry, and corn for feed use from less developed countries. India's official statistics report in the first two months of MY 2020/2021 corn exports of 583,000 MT, compared to 84,000 MT during the same period last year, going to Bangladesh, Nepal, and to other South Asian destinations (see, Appendix Table 10). At the current price parity for Indian corn, MY 2020 exports are estimated at 1.8 MMT, which could improve if local prices and/or the value of the Indian rupee declines.

Other Coarse Grains: India exports small quantities of feed grade sorghum and barley to neighboring countries and the Middle East. India has been net importer of barley since MY 2016/2017, which has been used for malting purposes. The 2020 COVID-19 outbreak in India slowed the hotel-institutional-restaurant (HRI) sector's demand for barley imports. Post estimates India's MY 2020/2021 barley imports at 100,000 MT and forecast MY 2021/2022 unchanged at 100,000 MT on record local harvest and weak HRI demand.

Tariffs: Import duties on coarse grains have remained unchanged for past few years. India allows imports of non-GE corn under a tariff-rate-quota (TRQ) of 500,000 MT, with a 15 percent duty (see, Appendix Table 5).

POLICY

Production Support: The Indian government's policies and programs for coarse grains are lower compared to those of rice and wheat. The MSP procurement of coarse grain is limited to a few states and is restricted to food-grade grains for the NFSA and other food security programs' distribution. The use of grains, including coarse cereals, is banned in the production of alcohol or ethanol for biofuels, unless it has been certified unfit for human consumption. Efforts to produce ethanol from other feedstocks such as sweet sorghum stover and crop waste are at the research stage. India has not commercialized any GE coarse grain crops. Indian seed companies and public sector institutions are developing various GE corn and sorghum events, but are several years from commercialization (see, GAIN-INDIA - IN2020-0148 - India Biotechnology Annual 2020).

Trade Policy: India imposes no restrictions on exports of corn, millet, sorghum, and barley. Imports are subject to duties and phytosanitary conditions specified in the Plant Quarantine (Regulation of Imports into India) Order 2003. Imports of GE products (GE crops and products derived from GE crops) need approval of the Genetic Engineering Appraisal Committee, which has yet to approve any GE coarse grains or byproducts for import. To import corn under the tariff-rate-quota, an importer must obtain a TRQ allocation certificate issued by the Ministry of Commerce and Industry (following EXIM Facilitation Committee procedures).

MARKETING

India's brewing industry fuels demand for malting-grade barley. However, phytosanitary conditions (weed seeds, ergot) and other SPS issues, plus non-approval of GE feed corn, preclude U.S. coarse grain exports.

COARSE GRAINS – CORN, MILLET, SORGHUM, AND BARLEY

CORN

Table 7. India: Commodity, Corn, PS&D

Corn	2019/2020		2020/2021		2021/2022	
Market Year Begins	Nov 2019		Nov 2020		Nov 2021	
India	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested (1000 HA)	9569	9569	9700	9700	0	9500
Beginning Stocks (1000 MT)	1346	1346	1863	1863	0	1813
Production (1000 MT)	28766	28766	30200	30200	0	29000
MY Imports (1000 MT)	327	327	50	50	0	300
TY Imports (1000 MT)	341	341	50	50	0	300
TY Imp. from U.S. (1000 MT)	2	0	0	0	0	0
Total Supply (1000 MT)	30439	30439	32113	32113	0	31113
MY Exports (1000 MT)	1376	1376	1800	1800	0	1200
TY Exports (1000 MT)	1125	1125	1800	1800	0	1200
Feed and Residual (1000 MT)	16000	16000	17000	17000	0	18000
FSI Consumption (1000 MT)	11200	11200	11500	11500	0	11400
Total Consumption (1000 MT)	27200	27200	28500	28500	0	29400
Ending Stocks (1000 MT)	1863	1863	1813	1813	0	513
Total Distribution (1000 MT)	30439	30439	32113	32113	0	31113
Yield (MT/HA)	3.0062	3.0062	3.1134	3.1134	0	3.0526

MY = Marketing Year, begins with the month listed at the top of each column.
TY = Trade Year, begins in October for all countries; TY 2021/22 = October 2021-September 2022.

MILLET

Table 8. India: Commodity, Millet, PS&D

Millet	2019/2020		2020/2021		2021/2022	
Market Year Begins	Nov 2019		Nov 2020		Nov 2021	
India	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested (1000 HA)	9006	9006	8800	8800	0	8900
Beginning Stocks (1000 MT)	323	323	612	612	0	612
Production (1000 MT)	12489	12489	12500	12500	0	12000
MY Imports (1000 MT)	0	0	0	0	0	0
TY Imports (1000 MT)	0	0	0	0	0	0
TY Imp. from U.S. (1000 MT)	0	0	0	0	0	0
Total Supply (1000 MT)	12812	12812	13112	13112	0	12612
MY Exports (1000 MT)	0	0	0	0	0	0
TY Exports (1000 MT)	0	0	0	0	0	0
Feed and Residual (1000 MT)	1200	1200	1200	1200	0	1200
FSI Consumption (1000 MT)	11000	11000	11300	11300	0	11000
Total Consumption (1000 MT)	12200	12200	12500	12500	0	12200
Ending Stocks (1000 MT)	612	612	612	612	0	412
Total Distribution (1000 MT)	12812	12812	13112	13112	0	12612
Yield (MT/HA)	1.3867	1.3867	1.4205	1.4205	0	1.3483

MY = Marketing Year, begins with the month listed at the top of each column.
TY = Trade Year, begins in October for all countries; TY 2021/22 = October 2021-September 2022.

SORGHUM

Table 9. India: Commodity, Sorghum, PS&D

Sorghum	2019/2020		2020/2021		2021/2022	
Market Year Begins	Nov 2019		Nov 2020		Nov 2021	
India	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested (1000 HA)	4824	4824	4100	4100	0	4800
Beginning Stocks (1000 MT)	153	153	394	394	0	584
Production (1000 MT)	4772	4772	4740	4740	0	4600
MY Imports (1000 MT)	0	0	0	0	0	0
TY Imports (1000 MT)	0	0	0	0	0	0
TY Imp. from U.S. (1000 MT)	0	0	0	0	0	0
Total Supply (1000 MT)	4925	4925	5134	5134	0	5184
MY Exports (1000 MT)	31	31	50	50	0	50
TY Exports (1000 MT)	31	31	50	50	0	50
Feed and Residual (1000 MT)	500	500	500	500	0	500
FSI Consumption (1000 MT)	4000	4000	4000	4000	0	4200
Total Consumption (1000 MT)	4500	4500	4500	4500	0	4700
Ending Stocks (1000 MT)	394	394	584	584	0	434
Total Distribution (1000 MT)	4925	4925	5134	5134	0	5184
Yield (MT/HA)	0.9892	0.9892	1.1561	1.1561	0	0.9583

MY = Marketing Year, begins with the month listed at the top of each column.
TY = Trade Year, begins in October for all countries; TY 2021/22 = October 2021-September 2022.

BARLEY

Table 10. India: Commodity, Barley, PS&D

Barley	2019/2020		2020/2021		2021/2022	
Market Year Begins	Apr 2019		Apr 2020		Apr 2021	
India	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested (1000 HA)	576	576	590	590	0	691
Beginning Stocks (1000 MT)	250	250	224	224	0	141
Production (1000 MT)	1633	1633	1722	1722	0	1950
MY Imports (1000 MT)	192	192	100	100	0	100
TY Imports (1000 MT)	71	71	100	100	0	100
TY Imp. from U.S. (1000 MT)	0	0	0	0	0	0
Total Supply (1000 MT)	2075	2075	2046	2046	0	2191
MY Exports (1000 MT)	1	1	5	5	0	10
TY Exports (1000 MT)	2	2	5	5	0	10
Feed and Residual (1000 MT)	350	350	400	400	0	400
FSI Consumption (1000 MT)	1500	1500	1500	1500	0	1600
Total Consumption (1000 MT)	1850	1850	1900	1900	0	2000
Ending Stocks (1000 MT)	224	224	141	141	0	181
Total Distribution (1000 MT)	2075	2075	2046	2046	0	2191
Yield (MT/HA)	2.8351	2.8351	2.9186	2.9186	0	2.822

MY = Marketing Year, begins with the month listed at the top of each column.
TY = Trade Year, begins in October for all countries; TY 2021/22 = October 2021-September 2022.

APPENDICES

Appendix Table 1. India: Government Wheat Procurement, Offtake and PDS Price

Marketing Year	Production	Government Procurement[1]	MSP	Government Total Cost	Offtake from Government Stocks	PDS Issue Price		
(Apr–Mar)	(Million Tons)	(Million Tons)	Rupees Per Ton	Rupees Per Ton	(Million Tons)	Rupees Per Ton		
						APL	BPL	AAY/NFSA
2005/06	68.64	14.79 (21.6)	6,400	10,419	16.71	6,100	4,150	2,000
2010/11	80.80	22.51 (27.8)	11,000	14,944	23.07	6,100	4,150	2,000
2015/16	86.53	28.09(32.5)	14,500	21,274	31.57	6,100	4,150	2,000
2016/17	87.00	22.96(26.4)	15,250	21,970	29.25	na/2	na/2	2,000
2017/18	98.51	30.82(31.3)	16,250	22,979	25.30	na/2	na/2	2,000
2018/19	99.87	35.80(35.8)	17,350	23,597	31.65	na/2	na/2	2,000
2019/20	103.60	34.13(32.9)	18,400	26,800	27.19	na/2	na/2	2,000
2020/21	107.86	38.99(36.1)	19,250	27,396	37.50/3	na/2	na/2	2,000
2021/22	107.00/3	42.00(39.3)/3	19,750	29,938/4	32.00/3	na/2	na/2	2,000

Source: Ministry of Agriculture and Farmers Welfare, Food Corporation of India, and Government of India Budget.
Notes: APL - Above Poverty Line, BPL - Below Poverty Line, AAY - Poorest of Poor, NFSA - National Food Security Act.
1/: Figure in parenthesis is the Indian government's procurement as percentage of total food production.
2/: NFSA implemented in most states replacing APL/BPL by end of 2015.
3/: FAS New Delhi Estimate.
4/: Government of India budget estimate.

Appendix Table 2. India: Commodity, Wheat, Prices Table

Prices In	Rupees	Per Unit of Measure	Metric Tons	
Year	2019	2020	2021	Percent Change
Jan	20,927	21,421	19,631	-8.4
Feb	20,921	22,127	19,319	-12.7
Mar	20,249	20,059	19,145	-4.6
Apr	20,149	20,215		
May	20,598	20,139		
Jun	19,868	20,639		
Jul	21,001	20,318		
Aug	21,141	19,736		
Sep	21,319	18,663		
Oct	21,303	18,899		
Nov	21,784	18,821		
Dec	22,195	17,644		
Exchange Rate	72.75	Local Currency/US$		
Date of Quote	03/11/2021	MM/DD/YYYY		

Source: AgMarkNet, Ministry of Agriculture and Farmers Welfare.
Note: National Average Monthly Wholesale Price of Wheat.

Appendix Table 3. India: Commodity, Wheat[1], Export Trade Matrix

Time Period	April-March	**Units**	Tons
Exports for	MY 2019/20		MY 2020/21[2]
U.S.	42	U.S.	55
Others		**Others**	
Nepal	164,748	Bangladesh	704,847
Bangladesh	33,310	Nepal	313,330
UAE	8,436	Sri Lanka	93,267
Somalia	4,057	UAE	82,556
Sri Lanka	2,103	Afghanistan	55,584
Korea DP RP	1,571	Qatar	42,347
Malaysia	1,060	Malaysia	6,501
Jordan	988	Somalia	5,123
Reunion	944	Bhutan	2,408
Uganda	514	Philippines	1,544
Total for Others	**217,731**	**Total for Others**	**1,307,507**
Others not Listed	1,917	Others not Listed	5,695
Grand Total	**219,690**	**Grand Total**	**1,313,257**

Source: Directorate General of Commercial Intelligence and Statistics, FAS New Delhi office research.
[1] Does not include wheat product.
[2] Provisional data for the period April 2020 through January 2021.

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

Time Period	April-March	**Units**	Tons
Imports for	MY 2019/20		MY 2020/21[2]
U.S.	0	U.S.	0
Others	`	**Others**	
Australia	1,790	Mexico	2
Sri Lanka	48	Turkey	0
UK	40	UK	0
New Zealand	4	Lebanon	0
Mexico	2		
Turkey	0		
Total for Others	**1,884**	**Total for Others**	**2**
Others not Listed	0	Others not Listed	0
Grand Total	**1,884**	**Grand Total**	**2**

Source: Directorate General of Commercial Intelligence and Statistics, FAS New Delhi office research.
[1] Does not include wheat product.
[2] Provisional data for the period April 2020 through January 2021.

Appendix Table 5: Import Tariffs on Major Grains and Products

HS Code	Description	Basic Duty (BD) on Assessable value	Social Welfare Surcharge (SWS) on BD	Integrated GST (IGST) on AV+BD+SWS	Total Effective Duty (BD+SWS+IGST)
Wheat and Wheat Products					
100.11.900	Wheat	40 percent	10 Percent	Nil	44 percent
100.19.920	Meslin	100 percent	Nil	Nil	100 percent
110.10.000	Wheat and Muslin Flour	30 percent	10 percent	Nil	33 percent
190.21.900	Uncooked pasta, not stuffed or otherwise prepared not containing eggs	30 percent	10 percent	12 percent	48.96 percent
190.23.000	Other Pasta	30 percent	10 percent	12 percent	48.96 percent
190.24.000	Couscous	30 percent	10 percent	12 percent	48.96 percent
Rice					
100.61.090	Paddy Rice in Husk	80 percent	Nil	Nil	70 percent
1006.20	Husked (brown) rice	80 percent	Nil	Nil	80 percent
1006.30	Semi milled or wholly milled rice	70 percent	Nil	Nil	70 percent
1006.40	Broken Rice	80 percent	Nil	Nil	70 percent
Coarse Grains					
100.30	Barley	Nil	Nil	Nil	Nil
100.50	Corn*	50 percent	10 percent	Nil	55 percent
100.70	Grain Sorghum	50 percent	10 percent	Nil	55 percent
100.82.100-100.82.900	Various Millets	50 percent	10 percent	Nil	55 percent

* India has a TRQ of 500,000 on imports of corn at 15 percent basic duty.
Exchange rate on March 11, 2021 1US$= INR 72.75.

Appendix Table 6. India: Government's Rice Procurement, Offtake and PDS Price

Marketing Year	Production	Government Procurement[1]	MSP for Paddy (Un-milled Rice Common variety)	Government Economic Cost	Offtake from GOI Stocks in Indian Fiscal Year (Apr/Mar)	PDS Issue Price		
(Oct-Sept)	(Million Tons)	(Million Tons)	Rupees Per Ton	Rupees Per Ton	(Million Tons)	Rupees Per Ton		
						APL	BPL	AAY/NFSA
2005/06	91.79	27.58 (30.0)	5,700	13,036	23.99	7,950	5,650	3,000
2010/11	95.98	34.20 (35.6)	10,000	19,831	29.96	7,950	4,150	3,000
2015/16	104.41	34.22(32.8)	14,100	31,255	32.13	7,950	4,150	3,000
2016/17	109.70	38.11(34.7)	14,700	31,050	33.71	na/2	na/2	3,000
2017/18	112.76	38.19 (33.9)	15,500	32,803	34.67	na/2	na/2	3,000
2018/19	116.48	44.40 (38.1)	17,500	34,441	34.23	na/2	na/2	3,000
2019/20	118.87	52.00(43.7)	18,350	37,481	35.14\3	na/2	na/2	3,000
2020/21	121.00/3	54.55(45.1)/3	18,880	39,994	56.00\3	na/2	na/2	3,000
2021/22	118.00/3	na	na	42,938/4	na	na/2	na/2	3,000

Source: Ministry of Agriculture and Farmers Welfare, Food Corporation of India, and Government of India Budget.
Notes: APL - Above Poverty Line, BPL - Below Poverty Line, AAY - Poorest of Poor, NFSA-National Food Security Act.
1/: Figure in parenthesis is the Indian government's procurement as percentage of total food production.
2/: NFSA implemented in most states replacing APL/BPL by the end of 2015.
3/: FAS New Delhi Estimate.
4/: Government of India budget estimate.

Appendix Table 7. India: Commodity, Rice, Milled, Prices Table

Prices In	Rupees	Per Unit of Measure	Metric Tons	
Year	2019	2020	2021	%Change
Jan	30,087	32,382	31,329	-3.2
Feb	31,909	31,379	33,174	5.7
Mar	31,764	31,899	32,153	0.8
Apr	32,241	35,165		
May	32,850	31,420		
Jun	31,789	31,180		
Jul	31,563	30,860		
Aug	31,660	32,068		
Sep	32,438	35,716		
Oct	31,166	32,123		
Nov	31,905	30,363		
Dec	31,810	32,563		
Exchange Rate	72.75	Local Currency/US$		
Date of Quote	03/11/2021	MM/DD/YYYY		

National Average Monthly Wholesale Price of Common Rice.
Source: AgMarkNet, Ministry of Agriculture and Farmers Welfare.

Appendix Table 8. India: Commodity, Rice Milled, Export Trade Matrix

Time Period	Oct-Sep	Units	Metric Tons
Exports for	**MY 2019/20**		**MY 2020/21[1]**
U.S.	250,399	U.S.	54,604
Others		**Others**	
SAUDI ARAB	1,276,939	NEPAL	546,398
IRAN	1,177,561	BENIN	454,782
NEPAL	893,919	SAUDI ARAB	354,004
IRAQ	751,878	IRAQ	281,059
TOGO	667,933	IRAN	236,353
BENIN	623,200	MADAGASCAR	234,993
SENEGAL	613,749	MALAYSIA	217,429
U ARAB EMTS	558,892	COTE D' IVOIRE	216,962
GUINEA	514,448	GUINEA	199,162
COTE D' IVOIRE	474,145	TOGO	190,530
Total for Others	**7,552,664**	**Total for Others**	**2,931,672**
Others Not Listed	4,793,553	Others Not Listed	2,751,875
Grand Total	**12,596,616**	**Grand Total**	**5,738,151**

Source: Directorate General of Commercial Intelligence and Statistics, FAS New Delhi office research.

[1] Provisional data for the period October 2020 through January 2021.

Appendix Table 9. India: Commodity, Corn, Prices Table

Prices In	Rupees	Per Unit of Measure	Metric Tons	
Year	2019	2020	2021	Percent Change
Jan	17,399	19,133	13,780	-28.0
Feb	18,414	17,481	13,535	-22.6
Mar	19,088	16,033	14,470	-9.7
Apr	19,291	15,839		
May	18,754	14,349		
Jun	18,889	13,881		
Jul	19,318	13,897		
Aug	20,132	12,932		
Sep	19,390	13,186		
Oct	18,833	13,457		
Nov	18,372	14,655		
Dec	19,016	14,098		
Exchange Rate	72.75	Local Currency/US$		
Date of Quote	03/11/2021	MM/DD/YYYY		

National Average Monthly Wholesale Prices of Corn.
Source: AgMarkNet, Ministry of Agriculture and Farmers Welfare.

Appendix Table 10. India: Commodity, Corn, Export Trade Matrix

Time Period	Nov-Oct	Units	Metric Tons
Exports for	**MY 2019-20**		**MY 2020-21[1]**
U.S.	0	U.S.	1
Others		**Others**	
Bangladesh	824,578	Bangladesh	406,809
Nepal	502,989	Nepal	125,212
Bhutan	16,044	Vietnam	34,973
Yemen	6,860	Malaysia	6,097
Japan	6,344	Bhutan	2,514
Myanmar	5,505	Qatar	990
Oman	4,072	Hong Kong	896
Vietnam	2,264	Oman	885
Hong Kong	2,003	Japan	857
Seychelles	1,874	Singapore	742
Total for Others	**1,372,533**	**Total for Others**	**579,975**
Others Not Listed	9,348	Others	2,835
Grand Total	**1,381,881**	**Grand Total**	**582,811**

Source: Trade Data Monitor; FAS New Delhi office research.
[1] Provisional data for the period November through December 2020.

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

Commodity	Quantity (MMT)	Comments
Corn	15.0-16.0	Largely commercial feed for poultry and aquaculture sector
Wheat	5.5-6.0	Largely farm feed mixes and commercial feed for dairy sector
Other Coarse Grains	1.8-2.0	Largely farm feed mixes and some for commercial feed for all sectors
Soybean Meal	5.1-5.8	Largely commercial feed for poultry and aquaculture sector
Cotton Seed & Meal	4.0-4.6	Largely farm feed mixes and some for commercial feed for dairy sector
Rapeseed Meal	3.2-3.3	Largely commercial feed and some farm feed mixes for all sectors
Peanut Meal	1.4-1.6	Largely commercial feed and some farm feed mixes for all sectors
Other Oil Meals	0.8-1.0	Largely commercial feed and farm feed mixes for all sectors
Broken rice/ de-oiled rice bran[/1]	3.0-3.5	Largely commercial feed for poultry and aquaculture sector
Wheat Bran[/2]	5.0-5.5	Largely farm feed mixes and some commercial feed for dairy sector
DDGS	0.2-0.3	Compound feed for poultry sector
Total	45.0-49.0	Compound feed accounts for about 60 percent of the total share

Source: FAS New Delhi office research based on information from trade sources.
[1]Byproduct of the rice mills.
[2]Byproduct of the roller flour mills.

Attachments:

No Attachments