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Commodity Intelligence Report

India Rice: Production Down Due to a Decline in Planted Area

Dry conditions in Northern and Eastern India resulted in a decline in planted area for India's rice crop. Production is expected to decline for the first time since MY 2015/16. India's rice production forecast for marketing year (MY) 2022/23 is 124.0 million metric tons (milled basis), down 5 percent from MY 2021/22. (Figure 1). The 2022 Southwest monsoonal rains have been above average, except for the Northern and Eastern regions. Harvested area is estimated at 45.5 million hectares (mha), down 2 percent from last year. (Figure 2) Yield is forecasted at 4.1 metric tons per hectare, down 3 percent from last year. India produces rice in both the *kharif* and *rabi* seasons. *Kharif* rice, which is approximately 70 percent of total rice production, will be harvested in early November. *Rabi* rice, which accounts for roughly 30 percent of total rice production, will be planted from November to January and will be harvested in late April.

The Indo Gangetic Plains, which consist of Uttar Pradesh, Bihar, Jharkhand, West Bengal, and Odisha, comprises about 30 percent of the total *kharif* crop. The optimal planting window for rice in this region is mid-July. Any rice planted after July 20 can result in lower yields because of fewer tillers in late transplanted rice. Only 58 percent of *kharif* rice was planted by the optimal planting date in 2022. Rice planting was down 13 percent by the end of July due to poor rains in the Northern and Eastern regions of India, which unlike the rest of the country did not receive the 2022 Southwest monsoonal rains. Uttar Pradesh and West Bengal plantings were down 12 and 48 percent, respectively, by the end of July. Plantings in Punjab and Haryana, however, were on par with the most recent 5-year average for the end of July. Heavy rains returned to this region in August. Plantings in the rest of India offset some of the declines.

Planting in the southern region of Telangana was up nearly 25 percent for the *kharif* season. In Maharashtra, the central part of the country, planting was up 2 percent from last year. As of September 9, rice plantings reached 38.4 mha, down nearly 5 percent from the same period a year ago, and 3 percent from the long-term average, according to the India Ministry of Agriculture. (Figure 3) By September 1, farmers had planted an additional 12 million hectares, or 93 percent of the long-term average.

The majority of *kharif* rice is grown in rain-fed conditions. The 2022/23 Southwest Monsoon arrived early; however, it stalled for two weeks and then resumed. The monsoon covered all of India except parts of the Northern and Eastern regions. Farmers in the Northern and Eastern regions experienced drought-like conditions at the start of planting. For the month of June, below normal rainfall was observed for parts of Uttar

Pradesh, Jharkhand, West Bengal, and Odisha. Cumulative rains from June to August in the North and East were down 19 percent from the long-term average at planting. In West Bengal and Uttar Pradesh, the largest producers, cumulative rainfall during the monsoon was down 22 percent and 28 percent, respectively. By August, however, heavier rains returned to Uttar Pradesh, Bihar, and West Bengal. (Figure 4) In contrast, Central and Southern regions of India received above-normal rainfall causing flooding in some areas. The Central and South Peninsula rice areas received 24 percent more rain than the long-term average. Farmers increased planting because of these increased rains. Telangana emerged as a critical producing state outside the north and east rice belt due to expanding irrigation facilities which encouraged farmers to boost rice production. Telangana rice area increased by 25 percent from last year and nearly doubled from the five-year average. Telangana is now a top five producer of rice.

India rice yield is estimated to be below last year. Most *kharif* rice is rainfed, whereas crops in Punjab, Haryana, and western Uttar Pradesh have access to irrigation. Satellite-derived, Normalized Difference Vegetation Index (NDVI) analysis in Punjab and western Uttar Pradesh indicates crop vigor is slightly above average at flowering. Crop vigor, however, was below average in eastern Uttar Pradesh, which doesn't have access to irrigation. In the Eastern region, NDVI was below average in Jharkhand and West Bengal. In the Southern region, Andhra Pradesh and Telangana, combined, account for 20 percent of the *kharif* crop, and vegetation analysis shows above-average crop vigor because of ideal weather conditions throughout the growing season. (Figure 5)

Rabi rice planting, which accounts for 30 percent of total rice production, started in late October and will continue through February with harvesting in April. The Ministry of Agriculture reported that rice planting was up 14 percent from the same period last year and up 12 percent from the 5-year average for the same period. (Figure 6) *Rabi* planting is likely up because of favorable residual soil moisture, and at the beginning of planting, water reservoirs were at capacity. In addition, farmers have access to fertilizer inputs. Irrigation is a more important component for *rabi* rice. Sixty percent of *rabi* rice is grown under irrigation in Southern India. As of early December, reservoirs in the south are at 80 percent of capacity compared to 87 percent for the same period last year. Although the current planting report is unavailable, the Ministry of Agriculture expects a strong *rabi* reason.

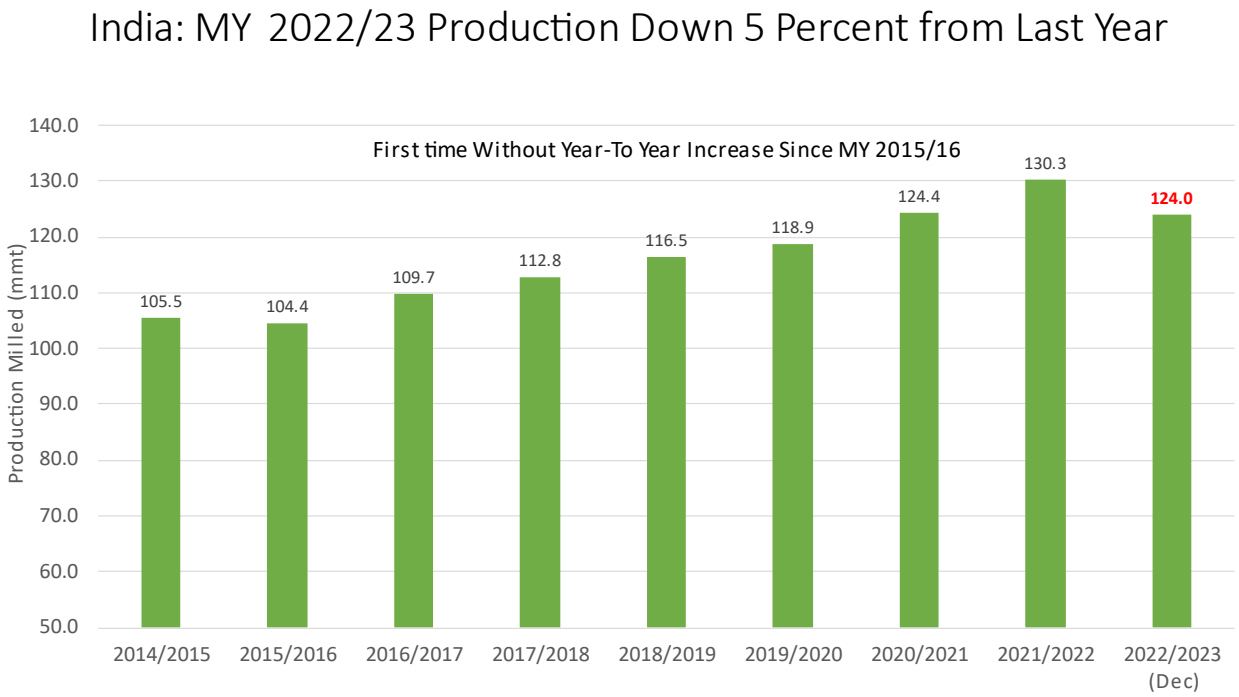
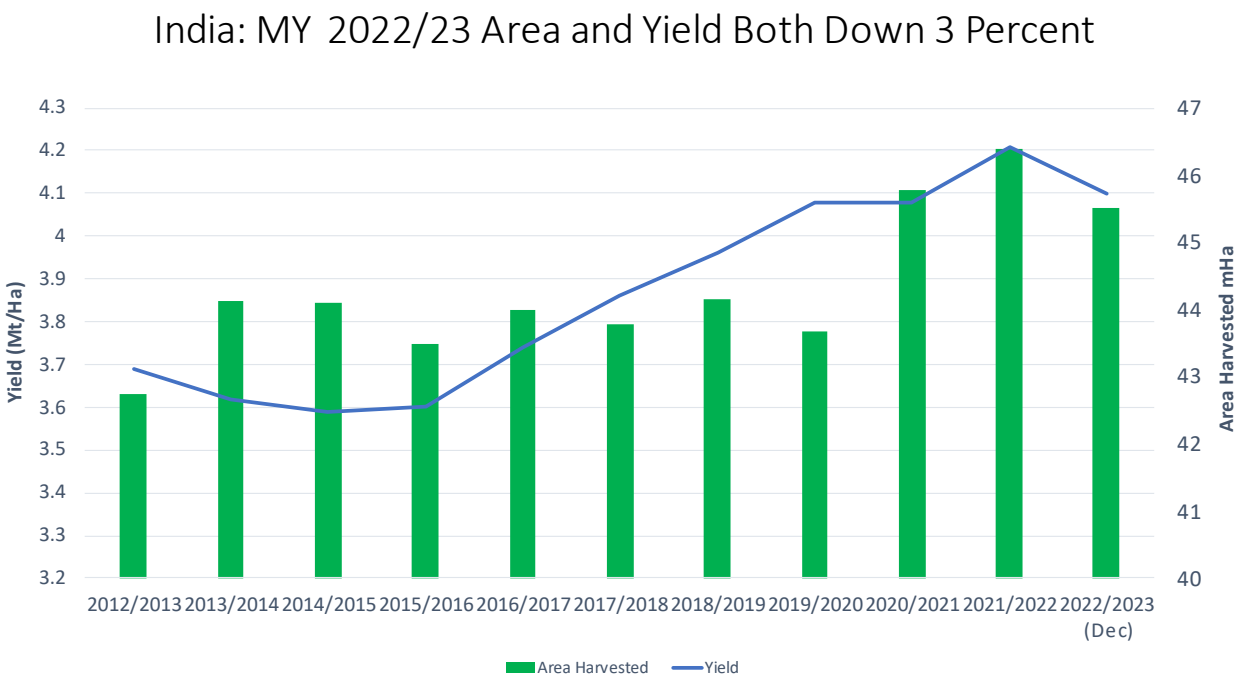


Figure 1. First time since MY2015/16 India rice production decreases. Source: USDA PSD Online



Source: PSD

Figure 2: Rice harvested area for MY 2022/23 is down marginally due to below-average rains in Northern and Eastern regions of India. Source: USDA PSD Online

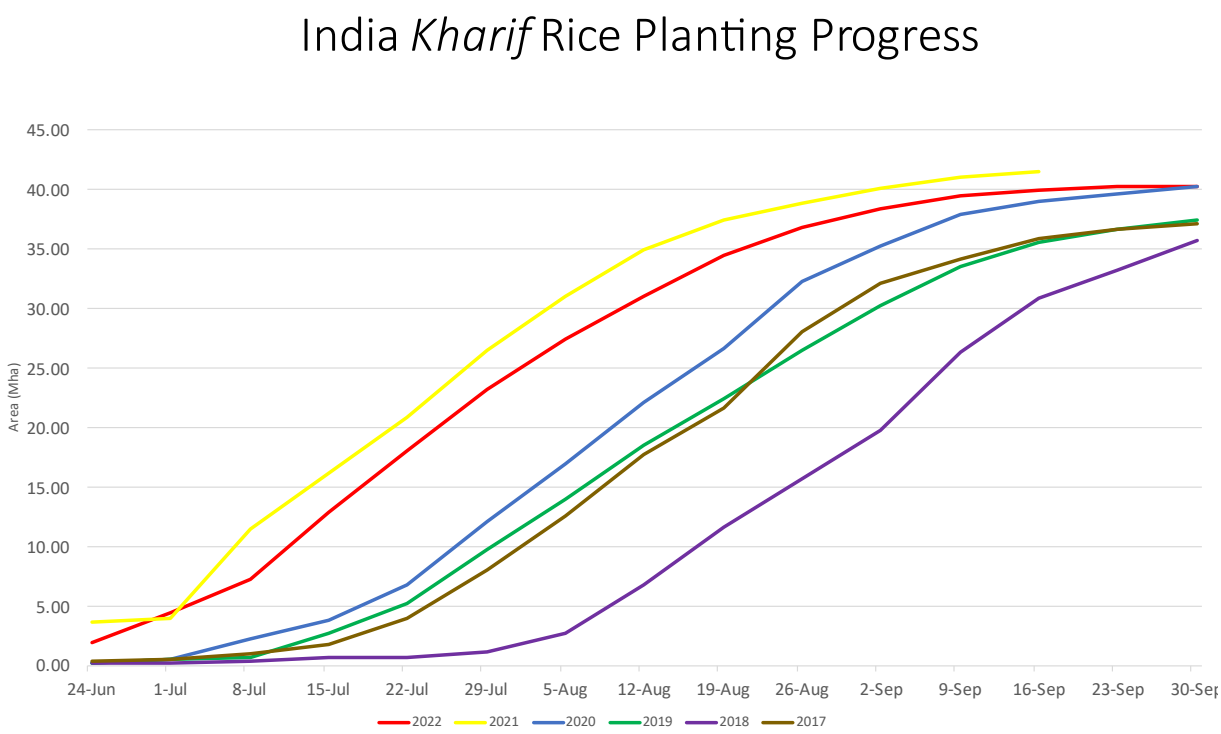
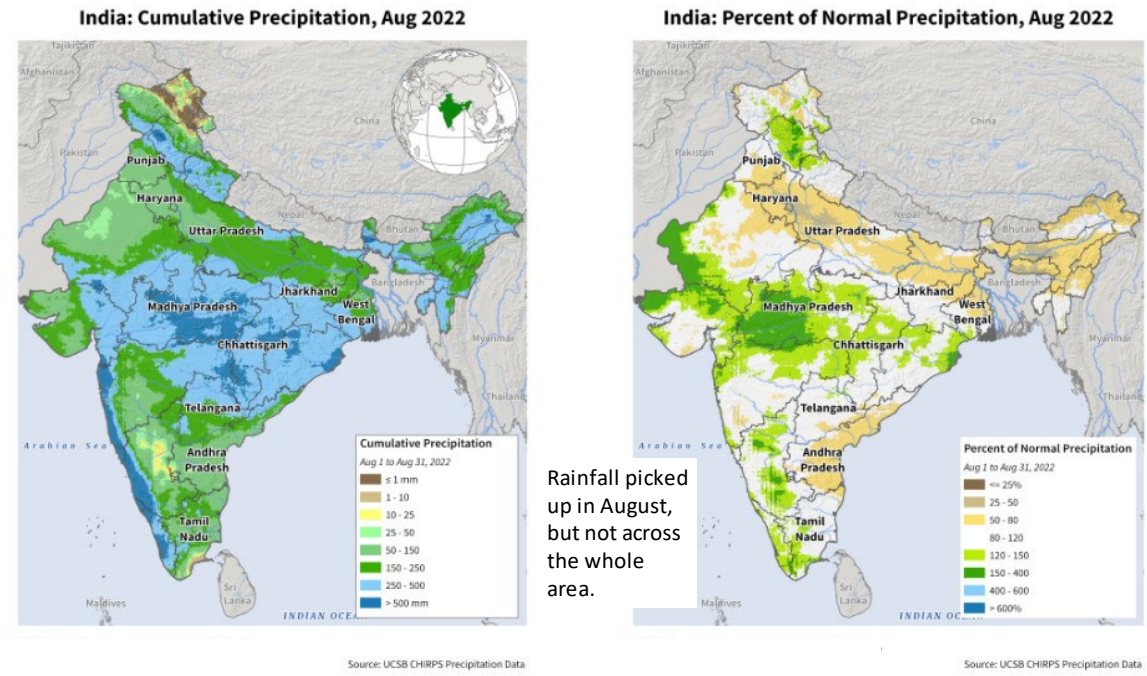


Figure 3: *Kharif* planting progress down 5 percent year-to-year. Source: India Ministry of Agriculture



Rainfall picked up in August, but not across the whole area.

Figure 4: Below normal rainfall at planting in Northern and Eastern regions of India. Source: UC Santa Barbara Climate Research Group

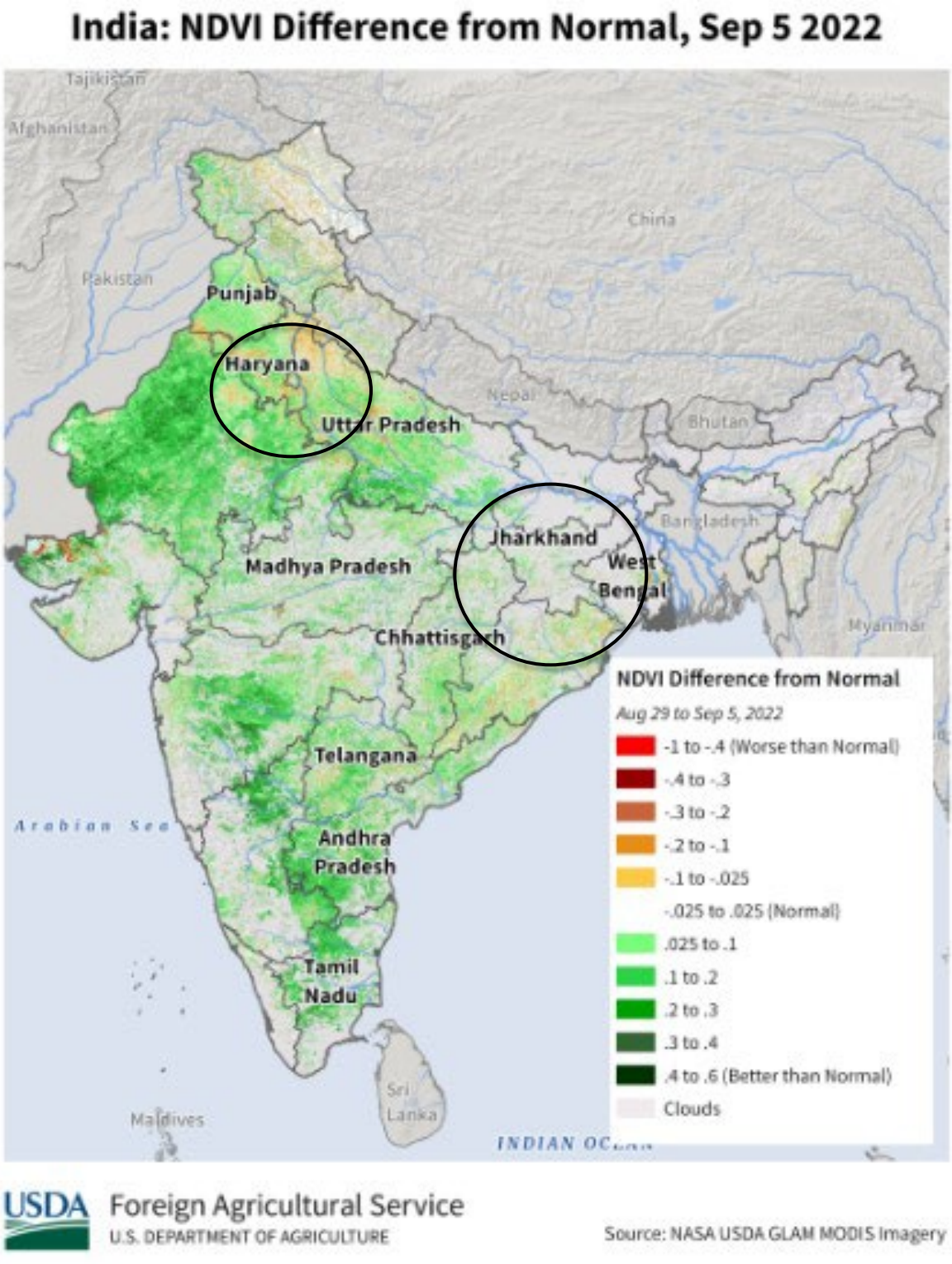


Figure 5: Lower crop vigor in the North and East due to poor rains. Crop vigor above average in Telangana. Source: USDA/NASA GLAM, MODIS Terra 8-day NDVI

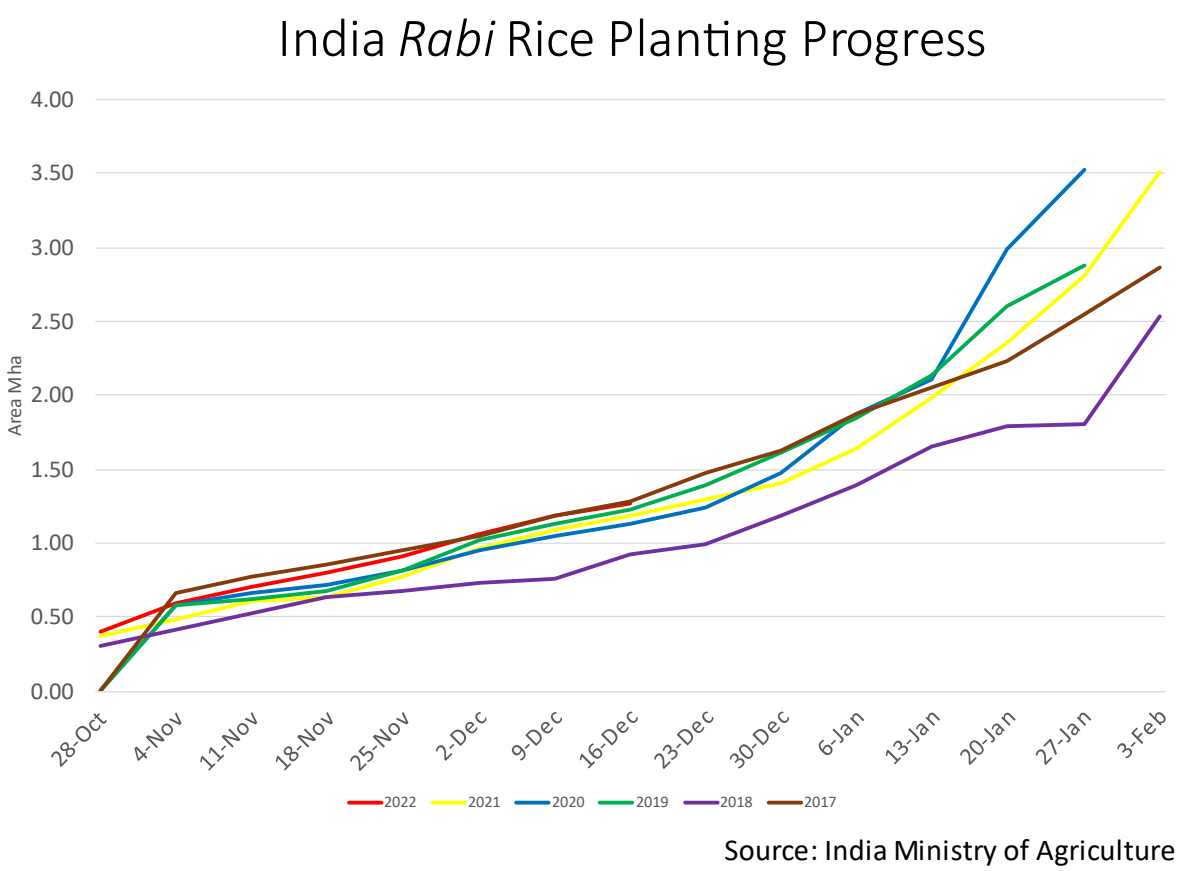
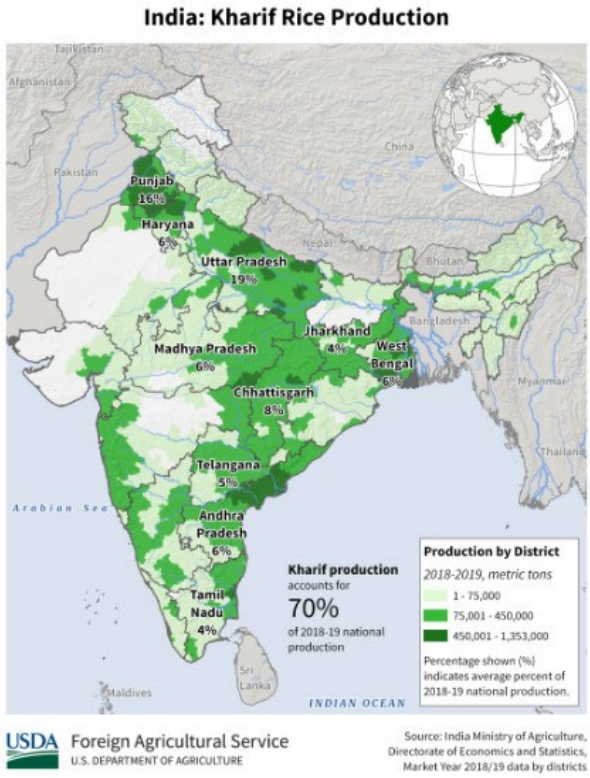


Figure 6: *Rabi* planting as of December 8 2022 up 14 percent from the same period last year and up 12 percent from the 5-year average. Source: India Ministry of Agriculture


India: Kharif Rice Production
Tajikistan
Afghanistan
Pakistan
China
Nepal
Bhutan
Bangladesh
Myanmar
Thailand
Arabian Sea
Maldives
Sri Lanka
INDIAN OCEAN
Punjab 16%
Haryana 6%
Uttar Pradesh 19%
Jharkhand 4%
West Bengal 6%
Madhya Pradesh 6%
Chhattisgarh 8%
Telangana 5%
Andhra Pradesh 6%
Tamil Nadu 4%
Kharif production accounts for 70% of 2018-19 national production
Production by District
2018-2019, metric tons
1 - 75,000
75,001 - 450,000
450,001 - 1,353,000
Percentage shown (%) indicates average percent of 2018-19 national production.
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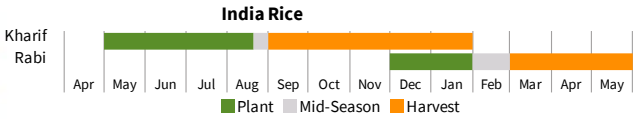
Source: India Ministry of Agriculture, Directorate of Economics and Statistics, Market Year 2018/19 data by districts


India Rice
Kharif
Rabi
Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May
Plant Mid-Season Harvest

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Crop Explorer
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Global Agricultural and Disaster Assessment System (GADAS)
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