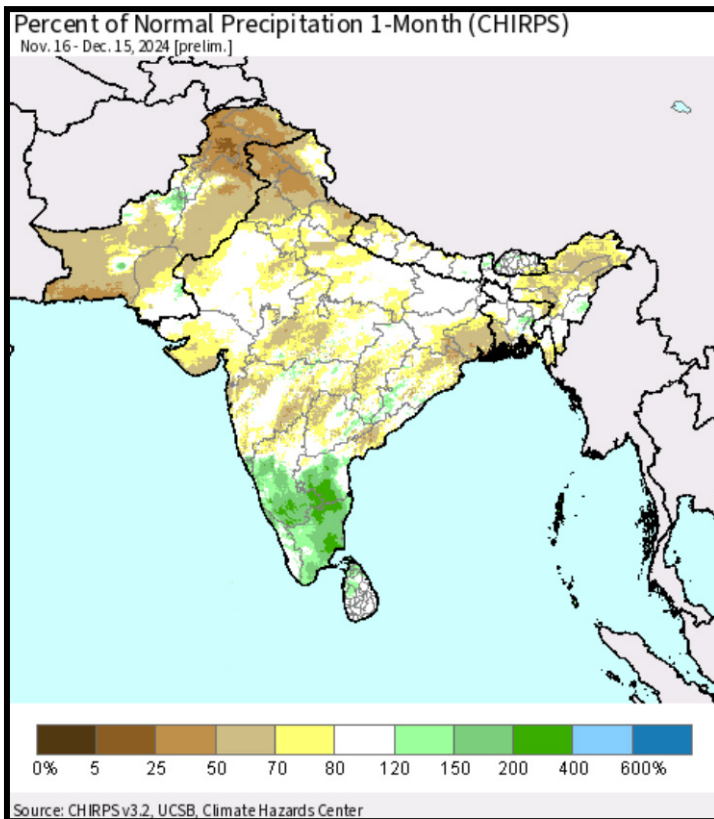


India's Dryland Winter Crops Need Rain Soon

By Andrew Owen and Drew Lerner

Kansas City, December 18 (World Weather Inc.) – Excessive heat across India's central and northern crop areas during October was particularly brutal and most of November continued warmer than usual as well. The heat followed a favorable summer monsoon that had improved water supply for many areas; however, dryland winter crop areas quickly dried out after weeks of temperatures in the 90s to well over 100 degrees Fahrenheit in October and in the 80s and 90s in early November. **The heat and resulting dryness delayed winter crop planting and led to some poor emergence and establishment in unirrigated fields. The Vegetative Health Index reveals this situation quite clearly. That does not mean winter crop production is doomed to be well below normal, but it does suggest that timely rainfall "must" occur sooner rather than later to get dryland crops in better shape prior to reproduction.** Irrigated fields should perform well as long as February is not too hot.

India's 2024 monsoon season produced ample moisture for a large section of the



subcontinent. Late-season rainfall was noted in several portions of northern, western, and southern India, which prompted a good start to the rabi crop planting season. In more recent weeks, southern India remained wetter than normal with most locations receiving 120% to over 200% of normal precipitation for the 30-day period ending December 15. Other locations in India received near to below normal rainfall during this time. The greatest deviation from normal rainfall was noted in West Bengal, the Eastern States, and extreme northern India.

Planting of the main rabi grains, oilseeds, and other crops normally wraps up in December, though some planting can linger into January after late season summer crop harvesting is

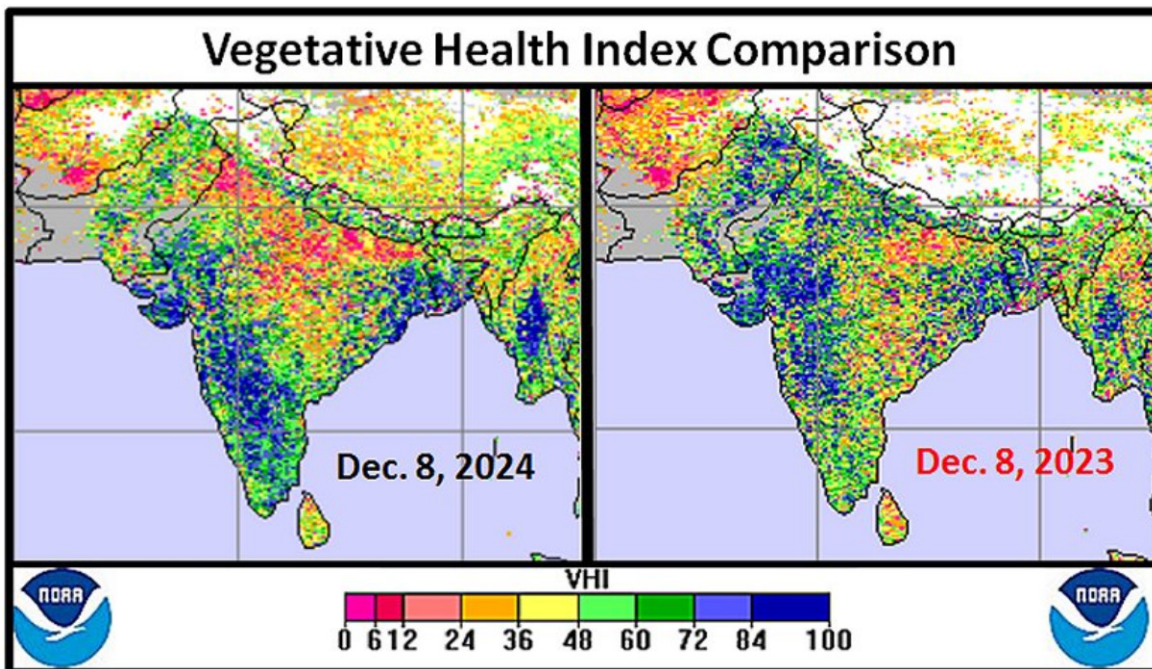
complete.

Early-season winter crop planting and establishment conditions were generally favorable in much of the country due to late-season monsoonal rain and favorable moisture in the soil. However, excessive heat began to build into northwestern India during September and by early October it was impacting most of the central and northern crop areas. Daily highs in the 90s Fahrenheit were common for many weeks resulting in accelerated drying. Some extreme heat over 100 occurred periodically in the northwest

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part of the nation well into October. Some cooling finally occurred in the second and third weeks of November, but by that time much of the favorable moisture in the topsoil of unirrigated fields in northern and some central India areas had been depleted. Irrigated fields had to use a greater than usual amount of water to get crops established during the hotter days and those crops are now in better condition. Unirrigated fields, however, may be faced with a bigger problem. Limited soil moisture after the heatwave may have left some fields unplanted, but more likely the crops were planted and may not have emerged or established as well as usual. That puts much pressure on weather in the next few weeks since it has not rained significantly in weeks.

Vegetative health is highly variable across India. Bihar and Uttar Pradesh into Haryana, Punjab, and immediate neighboring areas of Rajasthan and Madhya Pradesh are rated more poorly than usual possibly because of the heat induced drying that dominated the planting season. These areas represent a large portion of India's wheat, barley, rapeseed and mustard production region. Vegetative health is relatively favorable in the remaining portions of India outside pockets in Chhattisgarh and immediate neighboring locations favoring winter rice, corn, sorghum and groundnuts.



The lack of significant rain in November, and so far this month, helped perpetuate drier- and warmer-than-normal weather in much of India outside the southern production areas. Aggressive drying was noted, leading to a deterioration in vegetative health in portions of northern and eastern India. While the situation is not yet dire, especially since some of the crops are irrigated in northern India, the need for timely rain is increasing. A continued lack of precipitation may hurt production potentials in the rain-fed locations this season.

WEATHER OUTLOOK

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Weather in India through the middle of next week will be influenced by a disorganized tropical disturbance as it meanders around the Bay of Bengal through the end of the weekend. Rainfall associated with this disturbance will shift from coastal areas of Tamil Nadu and Andhra Pradesh through areas near and along the coasts of Odisha, West Bengal, and Bangladesh into southern sections of the Eastern States. A few eastern coastal areas could receive several inches of rain in a short amount of time that could promote localized flooding. However, the main production areas will not receive enough rain to impact long-term soil conditions. Other production areas in India will remain dry or mostly dry. Southern India will have a few opportunities for spotty rain December 25 – January 1. Extreme northern India could also receive light precipitation. The remaining production areas will again be mostly dry.

Dryness will further intensify across much of India outside the southern production areas in coming weeks. *Southern India and irrigated areas in western, central, and northern India will have enough moisture to maintain relatively favorable development conditions for the crops. Conditions for the rain-fed crops may start to deteriorate, especially in areas that already have less than favorable vegetative health.*

Northwestern India may continue to experience drier than normal conditions January into March. If the forecast verifies, development conditions will slowly deteriorate. Yields may drop below normal.

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