



El Niño and Indian Agriculture 2026: What the Changing Weather Could Mean for Farmers

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For Indian farmers, the monsoon is more than just a seasonal change in weather. It is closely connected with sowing, crop growth, irrigation, farm income and food security. When rainfall arrives on time and is well distributed, farmers can plan their crops with greater confidence. But when rainfall becomes irregular, delayed or deficient, even a carefully planned agricultural season can quickly become uncertain. The year 2026 has brought renewed attention to this uncertainty because of the development and strengthening of El Niño conditions. El Niño is a natural climate phenomenon associated with unusually warm sea-surface temperatures in the central and eastern tropical Pacific Ocean. Although it develops far away from India, it can influence atmospheric circulation and affect the Indian summer monsoon. The India Meteorological Department (IMD) initially forecast the 2026 southwest monsoon at about 92% of the Long Period Average (LPA) and later revised the forecast to 90% of LPA, with the LPA for the June–September season being about 87 cm. The forecast raised concerns because a large part of Indian agriculture continues to depend on rainfall. However, El Niño should not be viewed as a guarantee of drought or crop failure. Its influence varies from one year to another and other oceanic and atmospheric conditions also affect India's rainfall. The real concern for farmers is the possibility of long dry spells, uneven rainfall, high temperatures and reduced soil moisture at critical stages of crop growth.

Understanding El Niño and the Indian Monsoon

El Niño can be explained in simple terms as an unusual warming of surface waters in the tropical Pacific Ocean. These warming changes atmospheric circulation and can disturb normal weather patterns in different parts of the world. For India, one of the major concerns is its possible effect on the southwest monsoon. The monsoon supplies roughly 70% of India's annual rainfall, making it particularly important for agriculture (Pandey, 2026). Yet the relationship between El Niño and the Indian monsoon is not automatic. Government assessments point out that India has experienced several El Niño years without every year resulting in a deficient monsoon. This means El Niño should be treated as a risk factor rather than a certain prediction of agricultural disaster. This distinction is important in 2026 because sensational descriptions such as "Super El Niño" have attracted considerable attention. The Government of India has clarified that "Super El Niño" is not an officially defined category used by the World Meteorological Organization or the IMD. Therefore, farmers and policymakers should rely on official forecasts rather than alarming labels.

Why 2026 Is a Concern for Indian Agriculture

The concern becomes clearer when we look at India's dependence on rainfall. Nearly half of India's net sown area is dependent on rainfall, leaving millions of farmers vulnerable to variations in the monsoon. The 2026 season has already shown considerable variability. In June, rainfall was significantly below normal in several regions, although conditions improved in parts of the country during early July. By August, rainfall deficits again became

a concern. The IMD subsequently indicated that September rainfall was likely to remain below normal, while El Niño conditions were strengthening. The impact is not the same everywhere. Some regions may receive adequate rainfall while others experience prolonged dry spells. This makes the distribution and timing of rainfall just as important as the seasonal total. The government has therefore identified vulnerable districts and prepared contingency measures, particularly in areas where irrigation coverage is low. In June 2026, the Centre announced preparedness measures covering 315 vulnerable districts, with particular attention to districts having limited irrigation.

Impact on Kharif Crops

The Kharif season is particularly sensitive to monsoon behaviour because crops are generally sown around the arrival of seasonal rains.

Rice

Rice is one of the most important Kharif crops in India and water availability is critical at several stages of its growth. In rainfed areas, delayed rainfall can postpone transplanting or direct sowing, while long dry spells can reduce crop growth and yield. Recent reports indicate that Kharif paddy sowing in 2026 has been affected in some areas. Mongabay India reported that the area under paddy was around 13 lakh hectares lower than the previous year, highlighting the effect of rainfall uncertainty on crop decisions (Sirur, 2026).

Pulses and Oilseeds

Pulses and oilseeds are particularly important for India's food and nutritional security. Many of these crops are cultivated under rainfed conditions and can be sensitive to moisture stress. A weak monsoon can affect germination, flowering and grain or seed formation. Lower production of pulses and oilseeds can also have consequences beyond the farm because shortages may put upward pressure on market prices. The government has therefore encouraged farmers in vulnerable areas to consider alternative, short-duration and relatively low-water-consuming crops, including pulses, millets and oilseeds.

Cotton, Maize and Sugarcane

Cotton, maize and sugarcane can also be affected by rainfall and temperature conditions. Delayed sowing may shorten the crop's growing period, while prolonged moisture stress can affect plant development. S&P Global reported that the early 2026 Kharif season was under pressure from below-normal rainfall and emerging El Niño conditions, with rice, cotton and oilseeds among the crops facing concern (Pandey, 2026). The effects, however, will depend on the region, soil conditions, irrigation availability and rainfall received during the crop's most sensitive growth stages.

El Niño Is Also a Heat and Water Problem

El Niño's agricultural impact is not limited to rainfall. Higher temperatures can increase evaporation and cause soil moisture to disappear more quickly. Crops already facing insufficient rainfall may therefore experience additional stress. High temperatures can also affect flowering, pollination and grain development in sensitive crops. Water availability becomes another major concern. When rainfall is deficient, farmers may depend more heavily on groundwater, farm ponds, canals and reservoirs. This can increase competition for water between agriculture, households and other sectors. The Government of India has consequently emphasized monitoring reservoirs and groundwater and promoting water conservation measures in vulnerable areas. For farmers, simple practices such as field bunding, mulching, residue management and efficient irrigation can help conserve valuable moisture. Where suitable, drip and sprinkler irrigation can also improve the efficiency with which available water is used.

The Hidden Connection with Pests and Diseases

Weather stress can make crops more vulnerable to pests and diseases. A crop suffering from inadequate moisture or extreme heat may become weaker and less capable of recovering from pest attack. At the same time, changes in temperature and humidity can alter the behaviour

and distribution of some insects and pathogens. This makes regular field monitoring especially important during an uncertain season. Farmers should not wait until pest populations become severe before taking action. The use of weather-based advisories, integrated pest management and timely field inspection can help reduce unnecessary crop losses.

What Does El Niño Mean for Farmers' Income?

A poor monsoon can affect farm income through more than one route. If crop production falls, farmers have less produce to sell. At the same time, they may have to spend more on irrigation, re-sowing, pest management or other inputs. For small and marginal farmers, even a moderate reduction in yield can place pressure on household finances. There can also be an indirect effect through agricultural labour. Lower crop activity can reduce employment opportunities for farm workers, while rural businesses depending on agriculture may experience weaker demand. On the other hand, lower production of a particular commodity can sometimes increase market prices and benefit farmers who are able to harvest a good crop. Therefore, the economic impact of El Niño is not uniform. It depends on the crop, location, market conditions and the farmer's ability to manage production risks.

Could El Niño Affect Food Prices?

The relationship between weather and food prices is especially important in a country as large as India. If a weather shock substantially reduces the production of a food commodity, market supplies can tighten and prices may rise. Pulses, oilseeds, vegetables and other crops can be particularly sensitive to such changes. However, an El Niño event does not automatically mean a nationwide food shortage. Government stocks, procurement, imports, market interventions and production from regions that receive adequate rainfall can help moderate supply pressures. As of July 2026, the Government of India reported that adequate quantities of essential food grains, including rice and wheat, were available and that prices of essential commodities remained stable. This provides an important lesson: the agricultural impact of El Niño must be assessed crop by crop and region by region rather than assuming a single national outcome.

How Can Farmers Reduce the Risk?

Farmers cannot control the monsoon, but they can reduce their vulnerability to it. One way is to choose crops according to the water available. In areas facing water shortages, farmers can consider suitable low-water and short-duration crops instead of those that need water for a longer period. Being prepared for timely sowing is equally important, as keeping seed, machinery and land preparation ready allows farmers to make use of a good rainfall event without losing valuable time. Farmers can also conserve soil moisture through practices such as mulching, retaining crop residues, bunding and appropriate tillage. Where irrigation is available, water should be used carefully and prioritised for critical stages of crop growth rather than being applied unnecessarily. Crop diversification is another important way to reduce risk, as farmers who depend entirely on a single crop can face heavy losses when it is affected by drought, pests or market fluctuations. Including suitable crops such as pulses, millets, oilseeds, vegetables and fodder, along with livestock activities where possible, can help spread the risk. Finally, farmers should make greater use of weather advisories. Timely weather information can help them adjust sowing, irrigation, crop protection and harvesting decisions before a weather event occurs.

India's Preparedness: From Reaction to Anticipation

One positive aspect of the 2026 situation is the increased emphasis on preparation. The Centre has been reviewing crop sowing, seed and fertiliser availability, water storage and conditions in vulnerable districts. It has also encouraged states to implement contingency plans and promote crops requiring less water. The role of agricultural extension is particularly important here. Weather information becomes useful only when it reaches farmers in a form they can understand and act upon. Krishi Vigyan Kendras, agricultural universities, extension

workers and local institutions can help translate weather forecasts into practical recommendations—for example, whether farmers should wait for rainfall before sowing, select a short-duration variety or prioritize irrigation for a particular crop stage. The 2026 experience also shows why drought assessment needs to look beyond rainfall totals. Soil moisture, crop condition, irrigation, reservoir storage and local agricultural conditions can all determine whether farmers actually experience agricultural drought (Sirur, 2026).

Looking Beyond El Niño 2026

El Niño will eventually weaken, but the larger challenge of climate uncertainty will remain. Farmers are increasingly required to manage not only drought but also heat waves, intense rainfall, floods, new pest pressures and changing seasons. Building resilience therefore requires more than responding to one climate event. Crop diversification, water harvesting, efficient irrigation, climate-resilient varieties, better soil management, crop insurance and timely weather information all have a role to play. The objective should not be to eliminate every agricultural risk something that is impossible but to make farms better prepared to absorb shocks and recover from them.

Conclusion

El Niño 2026 is a reminder of how closely Indian agriculture remains connected to the climate. A weather phenomenon developing in the Pacific Ocean can influence the monsoon thousands of kilometres away, affecting sowing decisions, soil moisture, crop growth, water availability and farm income. At the same time, El Niño should not be treated as a prediction of inevitable agricultural disaster. India's experience shows that its effects vary from year to year and from region to region. The real challenge is the combination of rainfall deficiency, uneven distribution, prolonged dry spells and high temperatures at critical stages of crop growth. For farmers, the best response is preparedness rather than panic. Better crop choices, diversification, moisture conservation, efficient irrigation, regular pest monitoring and timely weather advisories can reduce vulnerability. For policymakers and extension agencies, strengthening early-warning systems, contingency planning, irrigation, seed availability and farmer-level communication will be equally important. The lesson from 2026 is therefore larger than El Niño itself. Indian agriculture must increasingly learn to operate under uncertainty. A resilient farmer is not one who can predict the weather perfectly, but one who is prepared when the weather does not go as expected.

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