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El Niño and the Fodder Crisis: Securing Feed for Livestock in a Dry Year

*Dr. Hrishikesh B Gudaghe

PhD Scholar, ICAR-Indian Veterinary Research Institute, Izatnagar,
Bareilly, Uttar Pradesh, India

*Corresponding Author's email: hrishi610@hotmail.com

India holds the world's largest livestock population and is the top milk producer, yet the sector runs on a fodder base that is already stretched. Studies of national fodder supply and demand point to a persistent deficit in green fodder, dry fodder and concentrates (Roy et al., 2019). Feed makes up nearly 60-70 per cent of the cost of milk production, so any shock to fodder reaches the farmer's income quickly. El Niño is that kind of shock. It is the periodic warming of the central and eastern Pacific, and it often weakens the Indian summer monsoon. Kumar et al. (2006) showed that monsoon failures in El Niño years are linked to the Pacific warming and to the way the atmosphere and the Indian Ocean respond to it. Of the 13 droughts in India since 1950, 10 occurred in El Niño years. The risk is current: in June 2026, the FAO warned that the new El Niño phase may weaken India's summer monsoon and stress rain-fed kharif crops. For farmers who depend on rain-fed fodder, the question is how much feed will be available for their animals.

How El Niño Affects Fodder Production

- Deficient and erratic rainfall. Delayed onset, long dry spells and poor distribution cut sowing area and establishment of kharif fodders such as sorghum, maize, bajra and cowpea. States like Karnataka, Maharashtra, Gujarat, Telangana and Andhra Pradesh produce much of India's milk but depend heavily on rain-fed fodder cultivation, which makes them especially exposed.
- Heat stress and lower biomass. Higher temperatures during El Niño years speed up crop development, so plants flower earlier and have less time to accumulate biomass. Green fodder yield per hectare drops, and the number of cuttings in perennial grasses such as Napier is reduced.
- Falling soil moisture and irrigation water. Weak rainfall leaves reservoirs, tanks and groundwater low. Farmers then give priority to food and cash crops, and irrigated fodder is the first to lose water.
- Loss of straw and crop residues. Dry fodder comes mostly from cereal straw and stover. A poor kharif crop means less straw and residue for livestock.
- Shrinking pastures and grazing lands. Drought shrinks communal grazing areas, pushing smallholders to buy costly concentrates or cut feed intake.
- Poorer nutritive quality. Water and heat stress usually raise cell-wall fractions (NDF, ADF, lignin) and lower crude protein and digestibility. The animal gets less usable energy and protein even from the fodder that is available (Thornton et al., 2009).
- Pest and disease shifts. Stressed crops are more vulnerable to pests such as fall armyworm and to mould in stored fodder. Heat and moisture stress also raise the risk of nitrate and prussic acid (HCN) poisoning in sorghum.

Net result: feed is short and poorer in quality, and prices rise. Heat stress on animals worsens the situation, and milk yield and fertility fall. Maharashtra has already flagged this risk, with

the Chief Minister warning of possible fodder shortages and urging that the state should not depend on external supply.

Impact on Livestock and Farmers

a) Fodder shortage and price spikes. When green and dry fodder run short, prices of straw, stover and concentrates climb quickly. Smallholders with little land and no stored feed suffer most, because they buy at peak prices or cut rations.

b) Falling milk yield and body condition. Less feed, and feed of poorer quality, means animals fall short of their energy and protein needs. Milk yield drops, lactation shortens, and body condition score declines. Animals that lose condition take longer to return to heat after calving.

c) Heat stress and poor fertility. El Niño years bring hotter days and nights on top of feed scarcity. Animals under heat stress eat less, shift more energy to cooling and show higher respiration rates. Their reproductive performance suffers through weaker oestrus expression, lower conception rates and poorer embryo survival (Sejian et al., 2018). Buffaloes are particularly sensitive because of their dark skin and fewer sweat glands.

d) Lower immunity and higher disease risk. Undernourished, stressed animals are more prone to metabolic disorders, parasitic load and infections. Drying water sources add to the problem when animals share a few contaminated ponds.

e) Distress sale and economic loss. Faced with no feed and no cash, farmers sell productive animals cheaply, often to traders at throwaway prices. When rains return, they cannot rebuild their herd, and a short-term shock becomes a long-term loss of livelihood. Women, who handle most livestock work, carry extra labour for fetching fodder and water.

Strategies to Tackle It

A. Before the season: preparedness

Follow IMD seasonal outlooks and district advisories, and plan fodder area accordingly.

Take stock of what is available at farm, village and district level, so deficits are known early.

Build reserves of hay, silage and dry fodder before the lean months rather than after prices rise.

B. Production-side solutions

Drought-tolerant crops: Sorghum, bajra, cowpea and Napier-bajra hybrids cope better with moisture stress than maize or berseem. Perennial grasses such as Cenchrus and Dichanthium suit marginal land.

Water-saving practices: Mulching, sprinkler or drip irrigation, farm ponds and rainwater harvesting stretch limited water further. Sowing on conserved moisture and timely weeding also help.

Agroforestry and fodder trees: Subabul, Sesbania, Gliricidia and Moringa give leaf fodder when grasses fail. Subabul contains mimosine, so it should be fed as part of the ration, not as the sole feed.

Hydroponic fodder: It needs little land and water, but it is costly to run and low in dry matter. Treat it as a supplement, not a replacement for field fodder.

Short-duration, quick-growing fodders: Cowpea and fodder bajra can be sown at the first rain to fill the gap.

C. Conservation

Silage: Cut maize or sorghum at the dough stage (about 30-35% dry matter), chop, compact and seal airtight. Well-made silage keeps for a year or more.

Hay: Cut legumes and grasses at the pre-flowering to flowering stage and dry them quickly in the field.

Fodder blocks and complete feeds: Densified blocks and pellets from crop residues are easier to store and transport, which suits drought-hit areas.

D. Nutritional management

Enrich straw: Urea treatment of paddy or wheat straw (about 4 kg urea per 100 kg straw, with 50 litres of water, sealed for around 21 days) raises protein and digestibility. Do not feed urea-treated straw to young calves.

Use unconventional feeds: Tree leaves, agro-industrial by-products and crop residues can fill the shortfall, but mix them into a balanced ration.

Balance the ration: Add a mineral mixture, and bypass protein or fat for high yielders. Balancing the ration cuts waste, and a smaller amount of well-balanced feed often serves better than a large amount of poor feed.

Cull unproductive animals: Removing animals that are not earning their feed saves scarce fodder for productive ones.

Reduce heat stress: Provide shade, clean drinking water, and feeding in the cooler hours.

E. Policy and community support

Community fodder banks and village-level silage making, with seed and silage subsidies.

Fodder transport support from surplus to deficit areas.

Early-warning systems linking IMD forecasts with district fodder assessments, so shortages are expected rather than discovered. Roy et al. (2019) lay out the state-wise fodder deficit picture that such planning needs

Case Example: Preparing Before the Drought

El Niño years do not have to become feed crises, and the best evidence is from places that acted before the shock. In Southern Africa, ahead of the 2023-24 El Niño, a pre-season effort directed nearly USD 31 million to more than two million people across seven countries, supplying seeds, livestock support and early warning systems (FAO, 2026). Early action of this kind, with forecasts used to trigger support before animals weaken, costs far less than relief after losses have happened.

The same principle works at village level, and this is where a local story will help your readers most. Add a short box on a farmer or village in your region that handled a dry year well. A good example would cover:

What they did before the season (silage stocked, fodder tree lopping, shifting to sorghum or bajra)

What it cost and what it saved

How the herd performed compared with neighbouring farms

I have not invented a farmer story. A real one from your own field visit, a KVK or a dairy cooperative will be more credible to readers.

Conclusion and Key Takeaways

El Niño affects livestock mainly by reducing the quantity and quality of fodder, and heat stress on animals adds to the loss. Smallholders, who have the least buffer, face the greatest risk of distress sales and long-term loss of livelihood (Thornton et al., 2009). The good news is that fodder shortage is more predictable than most disasters. Forecasts give months of warning, and most of the solutions (silage, straw enrichment, fodder trees, balanced rations) are low-cost and well tested.

Four actions farmers can take now

Plan early: Follow the IMD outlook and decide fodder area and reserves before the lean season.

Store surplus: Make silage and hay when fodder is plentiful, so you are not buying at peak prices.

Diversify: Grow drought-tolerant fodder and plant a few fodder trees on field bunds.

Feed smart: Enrich straw, balance the ration, and sell unproductive animals before they eat into scarce feed.

"Fodder security is not built in the drought. It is built in the good season before it."

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