

SEASON OF BITTERNESS FOR MANGO FARMERS

Extreme weather ruined this year's harvest, but that is just one of their challenges



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Those who seek the sweetest mango can hardly go wrong in Malihabad. In this fabled Uttar Pradesh village, every summer, trees hang heavy with India's most-loved fruit, especially the slender, juicy *Dussehari*—or, later, the plump *Chausa*—drawing tourists and traders from far and wide. But this year, as far as Insram Ali's eyes can see, the orchards are barren. The mango farmer in his mid-50s, whose ancestors have tended these orchards for at least three generations and made a living from mangoes, said he has never seen such a blighted harvest before.

In Uttar Pradesh, one of the most important mango-growing regions of India, the mango starts flowering in February. When the temperature reaches 30-32 degrees Celsius, the white flowers turn into tiny green stones, which then eventually become the fleshy yellow fruit.

This year, Ali said, on most of the trees on his 40-acre orchard, the flowers did not turn into fruit; or the raw green mangoes fell off as temperatures surged. "The heat wave in March destroyed the crops," said Ali. He had invested ₹50 lakh this year but ended up with a loss of ₹30 lakh.

The mango is inseparable from the experience of an Indian summer, its sweetness a reward for the scorching heat. With about 2.2 million hectares of land under mango production, the crop is also an important source of income for farmers. According to the ministry of agriculture, India produced 20.38 million tonnes of mangoes in the 2019-20 crop year (July-June).

Farmers grow 20-25 commercial varieties of mangoes spread over a wide geographical region, from Uttar Pradesh to Gujarat to West Bengal to Tamil Nadu. But with the exception of Maharashtra, in all other regions a series of erratic weather events since last winter has plunged mango production into a crisis.

"This year's overall mango production is predicted to go down by 40-45% as compared to last year," said a scientist at

Indian Institute of Horticultural Research (IIHR), Bengaluru, who did not want to be named as he is not authorized to speak to the media. As a result, the prices of mangoes have shot through the roof, from ₹30-150 per kg in the local market last year to ₹80-300 per kg this year.

In a regular year, April marks the beginning of the mango season which lasts till October. But the wild weather has left experts guessing. While the mango season in some parts of the country may last longer this time, the production gap will keep the prices up, say experts.

WEATHER THE STORM

"For the last four-five years, irregular rainfall has impacted the production of mangoes in the country, especially in southern India," said the IIHR scientist. "But this year, almost the entire country's mango production was affected by irregular, even extreme weather."

A good mango season needs the right temperature at the right time—cold and dry weather in October-December for the trees to flower; and moderate heat around March for the green fruits to ripen. Last November, unpredictable rain spells in many mango-growing areas of India replaced the cold and dry winds with moisture. The flowers either withered or stopped blooming.

In south India, heavy rainfall disrupted the flowering, while Cyclone Asani left a trail of damage in the west. "The strong high winds of the cyclone uprooted many trees. Those that survived lost all their raw mangoes," said Akshay Gajera, a farmer and a supplier of Gir Kesar mango varieties. Most of the trees that Gajera lost were 40-60 years old.

Mango saplings take time to mature into trees. It often takes 3-4 years for them to produce any fruit; and they reach maximum productivity between the age of 12 and 50 years. The loss of trees in their prime is likely to compound Gajera's losses in the coming years. For farmers like Ali, in northern India, the heat wave in March-April scorched the crop. Uttar Pradesh, one of India's major mango producers, grows on an average 40-45 lakh metric tonnes of the fruit every year.

"This year, the production has dropped to 6-7 lakh metric tonnes, impacting all the 14 mango belts of Uttar Pradesh," said Ali, who is also the president of the Mango Grower Association of India. "Over 60% of the mangoes are already harvested. And there is not much left on the trees. This year, the north Indian mangoes will disappear from the market soon."

The dip in quality has implications for the mango market, as also the processing industry that uses the fruit in pickles, jams, chutneys. "The processing machines in the industry are built for certain sizes of mangoes. When mango sizes are irregular and cannot match the machine standards, the entire processing chain gets disrupted," said Raunak Gokhale, who worked with mango processing units at a beverage company (Parle Agro in Mumbai) and currently works as head of strategy for CNH Industrial, which manufactures agricultural machinery.

The processing industry prefers mangoes with thick fleshy pulp, thin skin and smaller seeds. The *Totapuri* mango from Karnataka ticks those boxes and is preferred in the beverages sector. "But production levels of *Totapuri* are down by almost 30% compared to last year. Lower production and rising costs due to increase in labour and farm inputs would translate into 40-50% increase in price," adds Gokhale.

Mostly, small businesses are involved in turning mangoes into pickles, jams, jellies and other processed food items. Gajera warns that given the rise in prices of mangoes, it might get difficult for the small businesses to sustain themselves.

PESTS AND PRICES

Unseasonal rains not only hamper the growth of flowers or fruits, they also invite pests. "The moisture in the air draws pests to attack the crops," said the horticulture scientist. That drives farmers to spend more on pesticides, adding to their input costs. But simply using chemicals to kill the pests is not a solution, he explained. Rains often wash away pesticides, making them ineffective.

Every season, government extension officers and scientists advise farmers on medicines to use in different phases of mango production—one during flowering, another during fruit development. But, when trees, in an attempt to adapt to the changing cues in the environment,

MINT SHORT STORY

WHAT

Erratic and extreme weather since last November—from unseasonal heat to excess rainfall and cyclonic winds—has devastated mango-growing regions of India.

MOREOVER

Farmers face challenges, be it in terms of exports or the flood of fake chemicals in the market. Scientists hope that a longer mango season might still help them make profits.

WHAT

Some farmers are hoping for government compensation, and argue for greater state support. In its absence, they say, they would rather get out of growing mangoes.

develop fruits and flowers together, farmers are left confused as to which practices to adopt. This also increases the costs of managing the orchards. "We are witnessing a complex issue, with no clear answers," said the scientist.

Ali said that the challenge is worsened by adulteration in the pesticides. "We have complained to the authorities many times about the fake chemicals that are available in the market, but we have not found any solution," he said. Researchers suggest that India's spurious chemical market is on the rise and occupies about 30% market by volume. If the trees received the right dose of the right medicine, the farmers could have reduced their losses, Ali said.

Some scientists say that all is not lost. The mango season is a long one in India, with some varieties being harvested in September-October. This year, that timeline might be different. Mangoes may be available in the market for longer. This

gives hope to the IIHR scientist. "Farmers may even make a little profit in the later months." But farmers like Ali have been facing difficulties for a long time now. "Many of the trees in the mango orchards are over 90 years old. Just like us humans, these trees also lose their productivity after a time."

THE EXPORT ILLUSION

Farmers have been suffering for a long time," Dr Shailender Rajan, former director at the Central Institute of Subtropical Horticulture, Lucknow. The wayward climate has only added to the difficulty in making a decent income from mangoes.

For instance, that all mango farmers make a killing in the summer is a myth. Early-season mangoes like the *Alphonso* from Maharashtra often fetch good prices. "It's the first mango of the season and mango lovers often are happy to pay the premium price." But the mangoes from northern India often end up in a glut in the market, leaving the farmers to settle for low prices, explained Rajan.

The export market is also not a solution—for multiple reasons. "It's a common misconception that all Indian mangoes varieties are high-earning proposition for exports," said Rajan.

India is the largest grower of mangoes in the world, accounting for over half of the world's produce. But it is a laggard when it comes to exports—it does not count even among the top five exporters (Thailand, Mexico, Netherlands, followed by Peru and Brazil are the leaders). India exports less than 10% of its production, but most of it goes to countries with a large Indian diaspora. "Most of the mangoes are sent to countries like Dubai, South Arabia, the Middle East, UK," said Rajan. Recently, there has been a push to explore the market in the US. In 2020-21, India exported 21,033 metric tonnes of fresh mangoes, worth ₹ 271.84 crore, according to the Agricultural and Processed Food Products Export Development Authority (APEDA)—a sharp plunge, thanks to covid, from 49,658 tonnes exported in 2019-20.

It's often difficult to transport a highly

perishable commodity like mango. To send them to high-paying export regions by sea takes too long; air freight is too expensive. Mango-growing regions far from the coasts, like Uttar Pradesh, often end up selling the produce in the domestic market. Usually mangoes produced near the coastal regions—such as the southern and western varieties of *Bainganapalli* and *Alphonso*—are exported.

There is also the matter of taste. "The sweetness grade of Indian mangoes is higher than the mangoes of other countries like Brazil or Peru, which are preferred abroad. Beyond that the phytosanitary standards (that demand low presence of chemical residue in a product) have kept the Indian mango away from the export markets, especially the European one," said Rajan.

Due to the low production and the increased domestic prices, traders fear that export levels might dip further.

PROTECT THE FARMER

Ali and several other associations have requested the governments to offer compensation for the crop loss, but have not received any assurance. "Just like the wheat or rice farmers, we should also be offered some respite to deal with the losses due to climatic conditions," said Ali.

The IIHR scientist agreed: "Minimum support prices for the commercial mango varieties can help the farmers and the mango economy." Apart from that, timely crop protection advisories from the horticulture department in the local dialect must reach the farmers so that they can manage the crop well, he added.

He lauded the APEDA's role in promoting exports by developing mango clusters across the country. Adoption of good agricultural practices will also increase the demand for Indian mangoes in the international market, he said.

Ali, however, is at the end of his optimism. "Farmers just want to fell their trees and get out. *Koi fayda nahi hai* (There is no use). We don't know what else to do, but maybe we should look at other sectors. Perhaps, factories should come up here instead of trees. Let some of the orchards be preserved for tourists," he said.

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