

Hybrid Maize Helps Uplift Gujarat's Tribal Farmers  
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When Shugriben Ratva bakes yellow maize rotis on a clay griddle over a roaring wood fire, a tradition goes up in smoke. White desi maize has long been the staple of the Gujarati tribals. They find it tastier. "But it is true that rotis made of yellow maize are sweeter," Ratva says not unhappily, flipping the roti which she has rolled between the folds of a polythene sheet. "The harvest is better and the rates are good. So we grow for the market, after retaining some for food," she adds, justifying the victory of wallet over palate.

Yellow hybrids are more productive and also in industrial demand because of the higher starch content. So when Ratva sowed Sriram Bioseed's hybrid maize, not only did the calculus of commerce enter her soot-blackened hut in Chhota Udepur, she, too, made a cultural crossover.

Shifting tribal farmers from low-yield, low-income maize to more productive agriculture has been at the heart of Gujarat's plan for tribal uplift. The formula is not radical; it was the template of the Green Revolution in the plains. The novelty is in its application in poorly-irrigated hilly tribal areas where farms are stamp-sized, the weather erratic and the soil miserly.

The man who infused the Tribal Development Department of the Gujarat government with this innovating thinking was Anand Mohan Tiwari, who took charge in 2006, and is now principal secretary in the government's education department. Tribals constitute 7.5 percent of Gujarat's population. While they are better off than peers elsewhere, Tiwari saw his mandate as lifting their income and amenities at least to the level of other Gujaratis.

So a five-year, Rs 15,000-crore plan with 10 parts was crafted, of which the hinge component was Project Sunshine to raise maize yield. The idea was to persuade about two lakh tribal farmers through personal experience to switch to smart agriculture with deep discounted seeds (8 kg) and fertilisers (150 kg), enough to cover one acre each.

The profit motive of private seed companies was meant to be the driving force. The government would open up a virgin market for them on the understanding that they would roll out their distribution networks once the threshold of demand for smart seeds was crossed. Multinational corporations like Monsanto, vilified by environmentalists for being the flag bearer of genetically-modified technology, were invited to bid without ideological hang-ups.

"Our logic was that we do not care who doubles our income, whether it is an MNC or an American company or an Indian company, as long as our objectives and goals are achieved," Tiwari says, lounging on the spacious lawns of his house in Bharuch, as head of the state-run fertiliser company, his mezzanine stop before the current posting. "We would issue public tenders; there was a rigorous

selection process and if an MNC got the tender, so be it. We did not have any value judgement.”

Tiwari had to brave vicious publicity from a farmer’s organisation and environmental activists for that decision, though he had Chief Minister Narendra Modi’s tacit backing. Monsanto, which had demonstrated gains from smart maize through a pilot covering 15,000 farmers at its own expense before Project Sunshine was initiated, remained the principal seed supplier along with DuPont’s Pioneer Hi-Bred, United Phosphorous and Sriram Bioseed, as long as Tiwari was in charge.

Another fresh thought was involving non-governmental organisations with proven records in rural service—like Sadguru Foundation—in the distribution of seeds and fertilisers as well as the coaching of tribals in the discipline of hybrid crops, bypassing the state’s stretched agriculture extension system. Do-gooding industrial wives like Shruti A Shroff (managing trustee of Baroda-based NGO Shroffs Foundation Trust) were roped in, believing that they would be interested in earning goodwill rather than any pecuniary benefit.

A recent study by the Gujarat Institute of Development Research (GIDR) vindicates this faith, as almost all tribals officially certified as poor got their full entitlement of seeds and fertilisers—in time. A few complained of having waited for two-three days at the taluka distribution centres, but these are small gripes compared to the corruption rampant in welfare schemes across the country.

The gleam in Preamsinghbhai Ratva’s eyes as he confesses to earning about Rs 1 lakh—perhaps a first-time event—from four acres of hybrid maize this summer, confirms the soundness of Gujarat’s tribal uplift plan. A former sarpanch of Bhilpur village in Chhota Udepur, he says the shift from desi has meant a switch from growing for subsistence to producing for the market. He claims a yield of 30 quintals an acre compared to the average of eight quintals in these parts. “There is faayda [profit] in yellow maize,” he says.

Vithalbhai Jemta endorses this. He drives to Jetpur or Tejgarh (in Vadodara) if hybrid seeds are not available locally.

The cost-benefit trade-off however eludes Bapubhai Silot of Dahod’s Bhambori village. Owner of a tractor, a motorcycle and a large house, he hardly seems poverty-stricken, but elders like him taking advantage of subsidies can have a demonstrative effect on those lower in the village hierarchy. When government supplies arrived late last season, he plumped for desi. “Yellow is good,” he says, adding, “but we must get the seed before Chomasa [June],” hinting at the difficulty the government is likely to face when withdrawing subsidies.

But Milapsinh Padwal, a seeds retailer in Dahod, says demand for hybrid seeds is rising. Instead of damaging his business as feared, the government’s subsidy for hybrid seeds has boosted demand. Last year, when government supplies arrived late, he sold 12 tonnes of hybrid seeds in just two months, enough to cover over 800 acres.

Evaluation studies validate anecdotal evidence of yield increases. Surveys by Anand University and GIDR show that hybrids have doubled the yield but savings have not kept pace because of higher input costs. Private companies can help by lowering the price and rolling out their distribution network. They owe it to the government for lubricating their entry into a tough market.

They are not making enough noise either. Prakashbai Databhai, a non-tribal schoolteacher-farmer, was

unaware of hybrid maize till he sought advice from a relative. Even then, he did not follow the farming protocol but, luckily, he got a good yield. Gyanendra Shukla, Monsanto's MD for the India region, says subsidies must end before demand emerges. But Shukla should instead take the lead in creating demand by installing distributors.

Public agencies can help by scaling up production of seeds rather than whining that private companies are gaining at taxpayers' expense. Dr Sain Dass, former director of maize research at the Indian Council of Agricultural Research, says they should focus on high-yield single-cross hybrids. Despite the state's superior potential, desi and 'composite' varieties peddled by Anand University and NGOs are responsible for Gujarat's low average yield of 1.9 tonnes per hectare in 2011-12, Dass says, compared to 3.4 tonnes in Rajasthan. Activists who encourage people to grow desi maize in the name of 'seed sovereignty' are harming the tribals because it is deficient in nutrition unlike yellow hybrids that are rich in beta carotene.

GIDR says cotton and potato leave more on the table. A co-operative like Amul, processing companies engaged in contract farming, or even a state-funded special purpose company can take Gujarat's innovative approach to tribal welfare forward. This will be less fiscally-straining than a rights-based approach to poverty alleviation, which tugs eternally at the udders of the state.

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