

Natural farming's time has come, seize the moment

Consumers today are willing to pay for organic produce. What is required is a policy framework to enable farmers to cater to this market



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A FEW months back, I was at an artisanal products exhibition, where there was a stall showcasing organic leather bags. A buyer marvelled: "Wow, we have organic leather too?" The stall-person's response was, "Sir, this is from animals that were fed only natural grass and organic oil-cakes when alive".

One may call the above a marketing stunt or even exploitation of sentiment, but the point is consumers, including in India, are increasingly looking for food and non-food agricultural products that are free of chemicals. There are versions of farming without chemicals: From Rudolf Steiner's Biodynamic Agriculture, Masanobu Fukuoka's One Straw Revolution and Miguel Altieri's Agro-ecology, to the latest Subhash Palekar's Zero Budget Natural Farming (ZBNF). All have a common philosophy — farming based on using natural inputs, treating the soil as a living entity, promoting biological diversity and protecting the health of our ecosystem. These will, in turn, reflect on human wellbeing and the food that we eat.

Palekar's ZBNF runs on four "wheels":

Jiwamrita (a microbial culture of dung and urine from indigenous cow species, jaggery, pulses flour, bund soil and water), *Bijamrita* (a seed treatment solution with almost the same ingredients), Mulching (covering the topsoil with dried leaves and straw for moisture conservation and proper aeration) and *Waaphasa* (providing water outside the plant's canopy). These four elements will ensure that the crop receives enough nutrients through the action of living microorganisms in the soil, in addition to the water, carbon dioxide, nitrogen and solar energy for photosynthesis that come "free" from the monsoon rains, air and sun. ZBNF also advocates insect and pest management through decoction sprays of *Agniastra*, *Bramhastra* and *Neemastra*, which are made using *desi* cow urine, tobacco and leaves/pulp of neem, datura, garlic, papaya and pomegranate.

Whatever name they go by, natural farming approaches are now finding acceptance even from governments. Sikkim claims to have become India's first fully organic state. Andhra Pradesh has established Rythu Sadhikara Samstha, a not-for-profit company that aims at extending the reach of ZBNF to all six million farmers of the state by 2023-24. The ultimate endorsement for ZBNF has, of course, come from the Finance Minister Nirmala Sitharaman's 2019-20 budget speech and Prime Minister Narendra Modi's own address at the United Nations Convention to Combat Desertification on September 9.

While agricultural scientists may dismiss

ZBNF as "unproven" technology, there is a clear market, nevertheless, emerging even in India for products from natural farming. A recent Assocham-EY study has estimated the size of this market to touch Rs 10,000-12,000 crore by 2020. It is also a fact that the cost of chemical fertilisers, pesticides and energy used in conventional agriculture has skyrocketed in recent times, even as crop realisations for farmers have plummeted. This, along with the growing consumer preference for organic products, has opened up possibilities for natural farming.

If consumers are prepared to pay more for organic produce, the challenge lies in enabling farmers to adopt ZBNF and other such agricultural practices. Our scientific establishment has not shown much interest in these, which may partly have to do with legacy issues: Most of the agricultural universities in India are based on the US Land Grant Colleges model and they came up largely during the Green Revolution period. That explains why whenever any discussions on natural farming take place, the immediate reaction from scientists is that our soils don't have enough nitrogen, phosphorus or potash and we cannot feed our population without chemical fertilisers. Many even belittle organic models as NGO-driven, despite the Indian Council of Agricultural Research recently starting a National Organic Farming Research Institute at Tadong in Sikkim. Scientists also haven't accepted the System of Rice Intensification (SRI), a technique of cultivating paddy in soil that is kept moist



An organic tomato farm at a village in East Sikkim. Partha Paul

rather inundated with water. Through early and careful transplanting of 10-12-day-old seedlings, alongside wider spacing, SRI results in far more number of tillers per plant than from growing in knee-deep water.

What can policymakers do to making organic agriculture viable, especially for 85% of India's farmers who have less than one-hectare holding?

To start with, they should recognise that India is a vast country with many agro-climatic zones, crops and, within that, myriad varieties, some high yielding and some local cultivars. While our policy focus earlier was to increase production, the emphasis now should be on what is an optimal model for each of these zones, crops, varieties and even

different classes of farmers. Equally important to note is that each model — be it natural farming or growing high-yielding varieties/hybrids responsive to application of chemical inputs — has prerequisites. The organic models, including SRI, are more fastidious and labour-intensive, as they work at restoring ecosystems.

Secondly, there should be no discrimination against natural farming through extension of subsidy only on chemical fertilisers. Let all farmers be entitled to a fixed sum of money per acre, which they can use either to buy chemical-based inputs or engage the extra labour required for organic agricultural operations. One criticism against ZBNF is that it doesn't factor in the labour required for main-

taining indigenous cows (which yield less milk), collecting their dung and urine, and making the various *Jiwamrita*, *Bijamrita* or *Neemastra* concoctions. We forget that urea, di-ammonium phosphate or Rynaxypyr insecticide are all made in factories and delivered to farmers in practically ready-to-use form. How can farmers be motivated to practice organic agriculture when the basic input in this case — labour — has an opportunity cost? The least policy can do is to make agricultural subsidies/incentives technology-agnostic, so that farmers can freely choose between organic and non-organic.

Third, just as there are firms manufacturing fertilisers, crop protection chemicals and hybrid seeds, why not have enterprises that produce and sell organic inputs? This would make it viable for farmers to use these inputs directly, apart from helping create a new industry that will produce them in accordance with minimum quality standards. The government can further provide support to institutions providing training to farmers in organic agriculture, which is both labour as well as knowledge-intensive.

Finally, there can be no better time for a communication campaign targeting farmers and consumers on the benefits of organic. Remember what the National Egg Coordination Committee's 'Sunday *ho ya Monday, roz khao ande*' ad jingles in the nineties did for our poultry industry? When the national mood is slowly moving towards natural farming, it offers a perfect moment to launch a surgical strike.

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