

Covid-19 calls for a new agriculture

The pandemic underscores the need to redefine our relationship with nature



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Covid-19 compels the realisation that development paradigms need to integrate livelihood goals with those of sustainability and health. The most important livelihood in India remains agriculture. But we have never applied the sustainability or nutrition lens to farming. A narrow pre-occupation with raising yields at any cost has ultimately resulted in a serious farm crisis, whose underbelly has been exposed by the pandemic.

In a recent paper commissioned by the Food and Agriculture Organisation (FAO) and Niti Aayog ("Symbiosis of Water and Agricultural Transformation in India"), P S Vijayshankar and I argue that a move away from the monocultures and technologies of the Green Revolution and a shift in cropping patterns to match India's diverse agro-ecology could lead to massive savings in water use, stabilise and raise farmer incomes, improve soil fertility, and provide better nutrition and health to consumers. Agriculture takes up 90 per cent of India's water. And 80 per cent of that water is cornered by just three crops: rice, wheat and sugarcane. In a first-of-its-kind calculation, we conducted multiple scenario analyses to estimate how much water could be saved through crop diversification in 11 major agricultural states, which together account for about two-thirds of India's irrigated area. The replacement crops are mainly pulses, oilseeds and nutri-cereals suited to each agro-ecological region. We show how we could save enough water to resolve India's drinking water crisis and meet irrigation requirements of millions of small and marginal farmers.

It is sometimes argued that this crop switch will result in a reduction in total output because of lower yields of our replacement crops. But we must note that even maintaining current levels of production of water-intensive crops like rice and wheat could prove impossible in the face of groundwater depletion in states like Punjab and Haryana. On the other hand, raising public procurement of rice from eastern India would mean that this water-abundant region need not continue to depend on groundwater scarce regions for its supply of foodgrains. We must also recognise that food stocks over the last decade have greatly exceeded the "buffer norm" of 31 million tonnes for wheat and rice. Even after all the additional draws following Covid-19, the central pool still had 63 million tonnes in stock in October 2020.



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Moreover, the nutritional content of our proposed crop mix is definitely superior, with a much higher content of dietary fibre, vitamins, minerals, protein and antioxidants, as also a lower glycemic index. The impact on farmers' net incomes is likely to be positive both because of lower input requirements and cost of production as also higher wholesale prices for replacement crops. In recent times the productivity of nutri-cereals has been going up because of which, despite a sharp reduction in acreage, their production has not

declined. This is a positive sign leading us to believe that with greater R&D investments in nutri-cereals, their productivity can be further improved. What would help is stronger farmer extension support, as also expanded procurement and higher price support to create the right macro-economic environment for crop diversification. It is encouraging that recent increases in minimum support prices have tended to favour our replacement crops and not so much rice and wheat.

Unfortunately, public procurement is still overwhelmingly focused only on rice and wheat. Farmers continue to grow these water-intensive crops even in water-short regions primarily because of an assured market in the form of public procurement, which still covers only a very low proportion of India's crops, regions and farmers. Thus, we need to greatly expand the basket of public procurement to include more crops, more regions and more farmers. Procurement must be local and follow the logic of regional agro-ecology. A useful benchmark could be 25 per cent of the actual production of the commodity for that particular season (to be expanded up to 40 per cent, if the commodity is part of the PDS), as proposed under the 2018 PM-AASHA scheme. Over time this will incentivise farmers to diversify their cropping patterns.

The locally procured crops should be incorporated into anganwadi supplementary nutrition and school mid-day meal programmes. This would mean a large and steady market for farmers, while also making a huge contribution to tackling India's twin syndemic of malnutrition and diabetes. We also argue that agro-ecological approaches to farming that reduce dependence on chemical inputs, improve soil structure and reduce water demand can make a very positive contribution to a more healthy water and food. These agri-reforms put together provide a significant pathway for resolving India's multiple crises of water, farming, health and nutrition.

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