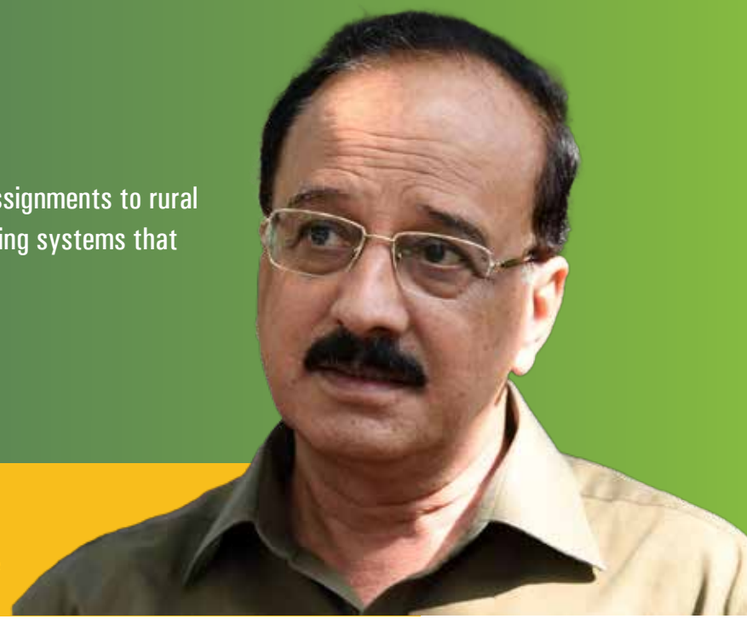
Why a shift to natural farming is needed

Chemical farming is not only harmful to human health but also to the environment. The overuse of chemicals has destroyed soil fertility and contaminated the environment

> Policy planners should be sent for study assignments to rural areas to learn from the chemical-free farming systems that our progressive farmers have developed



About The Author

Mr Devinder Sharma is a noted food policy analyst and an expert on issues related to the agriculture sector. He writes on food, agriculture and hunger

Addressing a 'Regional Consultation on Science of Natural Farming' the other day, how Dr Yogita Rana, a Joint Secretary of the Ministry of Agriculture and Farmers Welfare, explained the importance of healthy foods, simply floored me.

I must say what the Joint Secretary said, and how well she articulated her argument against chemical inputs, was not only very courageous but exemplary. Although such saner voices in the bureaucracy are very limited, I only wish that the top administration – whether in science, agriculture and technology – were to introspect and see that the world has moved far away from the days of the Green Revolution when chemical fertiliser and pesticides were aggressively pushed to increase crop productivity.

We need healthy food, healthy environment, wealthy farmers

While the era of chemically-induced farming systems is now gradually receding into history, what is now urgently required is a food system transformation that results in healthy food, healthy environment and wealthy farmers.

As a student of agriculture, and then as a researcher, writer and policy analyst, I was always appalled at the folly of applying huge quantities of poison to increase crop production. The quantum of chemical pesticides that the standing crops were literally drenched with, and also the overuse of synthetic fertilisers that not only destroyed soil fertility by harming millions of bacteria and fungi that helps create organic material so essential for plants that a naturally-endowed healthy ecosystem was uprooted. Again, when it comes to genetically-modified crop varieties, the effort was to transfer a gene from a related (and also from unrelated species) to enable the plant to build its own toxins so as to take care of harmful pests.

As a student, I remember reading one of the research papers of late Prof David Pimental, a distinguished entomologist at the Cornell University and an influential champion of the environment, where he concluded saying that only 0.1 per cent of the pesticides applied hit the target pests. The remaining 99.9 per cent of the chemical pesticides being sprayed contaminate the environment. This study came out in the mid-1970s, and was simply ignored. That was the time when Green Revolution was at its peak, and when in the quest for increased productivity agricultural universities across the globe were pushing for fertilisers, pesticides, herbicides etc which eventually did more harm to human health and environment.

Stirring the pot

This is where I see Yogita Rana very ably stirring the pot. Providing a peep into the future, and more importantly brushing aside the corporate pressures that bureaucrats always appear to be working under, her clarity of thought was very clear and of course impressive.

Observing the global trends, especially at the time when temperatures are soaring, she said that the society is at a cusp in history when after a few years' synthetic fertilisers and other chemical inputs will not be a part of the dominant discourse. This is essentially because of a new awakening that has taken over the world in the post-Green Revolution period. People want safe and healthy food, and are willing to pay for it.

Shock therapy

Curious, I followed her talk on YouTube (web link here: https://www.youtube.com/watch?v=cy4A2DUJaUY). To make her point, she had carried a few packets of chemical fertilisers like Urea, Di-Ammonium Phosphate (DAP), and also a few micro-nutrients like Boron, Zinc Sulphate and Magnesium Sulphate that farmers normally apply in crop fields.

To her question how much should we normally eat -- a spoonful or a pinch of the chemical -- that should be sufficient for a human body, there was no response. The huge audience, which mainly comprised of agricultural scientists and farm officials, had obviously gone quiet.

What she was trying to convey is that while scientist and agricultural officials invariably ask farmers to apply heavy doses of synthetic inputs, these chemicals gets absorbed by the plant system, and eventually ends up in the food we consume. It was a kind of shock therapy that she effectively delivered.

On an average, she said the average consumption of chemical fertilisers is 138 kg per hectare although in some areas the application is much higher. The higher the fertiliser dose, the higher is the intake by plants. And yet, no scientist wants to consume even a spoon of chemical fertiliser.

At the same time, availability of carbon in Indian soils has come down to 0.3 per cent. But in lot many organic farms, the carbon availability is much higher. We have to learn from these farmers.

Calculating the damage

This reminded of a News Today programme which was telecast ten years ago by BBC News titled: How much sugar in Coca Cola? James Quincey, the then company's president for Europe, was taken by surprise when the journalist fished out a small cup that people normally buy in a cinema and poured out 23 sachets of sugar from the cup. The bigger cup that is also available in cinema halls contains as many as 44 sachets of sugar. This came as a shock for the company's president who obviously didn't know how to respond.

Similarly, the invitation to consume a small quantity of chemical fertilisers that scientists and agricultural officials otherwise force the farmers to apply, did come as a rude shock to those present. But I only hope they take home the underlying message, and start looking afresh at the polluting farm systems and how to transition towards healthier systems that do no more damage to the environment. As I have often said, agricultural universities have to take on the new role. They have to be the not only the pivot but a driver of the agro-ecological farming systems that the world is looking towards. There is ample evidence available now that productivity of these farming systems is no less than conventional agriculture. So let's not be brow-beaten by the agribusiness industry that continues to create a fear psychosis saying the shift towards agro-ecology will create food insecurity.

I am only hoping that more and more bureaucrats, because they call the shots when appropriate policies are framed, are sent for study assignments to the rural areas, and are expected to learn the numerous chemical-free farming systems an amazing lot of progressive farmers have developed over the years. These time-tested technologies are not only regenerative but location-specific, and utilise the locally available resources. These organic systems, based primarily on Low External Input Sustainable Agriculture (LEISA) approaches, should certainly be vetted by the formal agricultural research system and adopted. It is therefore high-time the Indian Council of Agricultural Research (ICAR) – the umbrella agricultural research body of the country – draws collaborative efforts with these farmers who hold the key to the future of Indian agriculture.

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