

Home / IndiaSpend Interviews

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When I Share A Seed, It Reinstates A Dying Culture'


Until the farmer is totally independent of all external inputs, including machinery, the farm is not sustainable, says ecologist Debal Deb

By Shreehari Paliath | 26 Oct, 2022



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Bengaluru: For nearly three decades, ecologist and farmer-conservator Debal

Deb has been conserving, cultivating and sharing native rice varieties and seeds. Many varieties that he has rescued over the years are critically endangered: They are only grown in a small number of farms--often on just one farm.

"I have rescued 35 such critically endangered varieties in Koraput district of Odisha and 15 native varieties in Nagaland," said Deb. Over the years, he has seen the loss of native varieties when the passing of a farmer meant that a native variety became extinct.



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It is [estimated](#) that India had more than 100,000 rice landraces (native rice varieties) until the rise of the Green Revolution in the 1970s, after which the number of varieties declined. Deb's quest to preserve and cultivate rice landraces and native seeds led to the creation of [Basudha](#), a farm roughly the size of a football field located in southern Odisha's Rayagada district. He is now conserving over 1,400 landraces and has shared the seeds with nearly 8000 farmers for free. By the time he had started Basudha in 2001, [Vrihi](#), an open folk rice seed bank that Deb founded, was nearly half a decade old.

"The indigenous crop diversity is a result of human creative intervention and not created by God or by natural selection," said Deb. "It is part of our human heritage." Abandoning such a system that has existed for generations will have consequences such as indebtedness, distress and suicides, he added.

In an interview, Deb speaks about farmers' autonomy, the importance of native seeds to material and food culture, and the government's approach to sustainable agriculture.

Edited excerpts:

You [mention](#) an incident in the late 1990s when a rice landrace went extinct after the farmer who grew it passed away. As a researcher,

[f](#) someone who conserves native seeds, how routine are such [X](#) its in your experience?

[f](#) ver the country, farmers have abandoned native varieties (of rice) over the [. Even if the farmer continues, their children do not want to. This has been \[t\]\(#\)ory of farming in India for several decades. The varieties that I had \[t\]\(#\)ed decades ago are no longer being cultivated. In West Bengal, I had \[c\]\(#\)ected more than 400, but now there may be no more than 150 left. \[c\]\(#\)ollection is possibly the last.](#)

***Agni sal* [a native rice variety] that I had collected from a farmer in Puri [d](#)istrict in the late 1990s went extinct because no one grows it anymore. There [v](#)arieties which are now being grown by single farmers. These are critically endangered because they are not only growing in a small number of farms, but grown on just one farm. I have rescued 35 such critically endangered varieties in Koraput district of Odisha and 15 native varieties in Nagaland.**

How do you come to know about these endangered varieties?

I am always on the move and meeting farmers in different districts. I collect these field varieties as I travel and meet farmers in the villages and interact with them. I document it through my travels. There is no other option.

There is an [increasing focus on climate change](#) and the larger [challenges of food security](#). You have been working on indigenous farming and with the Adivasi communities for decades. What role is the government playing in encouraging agroecology, and how do you see the government's [initiatives](#) around organic and natural farming?

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The government is not supporting agroecology. So far, there is no support. We should not equate 'organic' and 'natural farming' tags with agroecology. Organic farming is essentially zero chemicals and pesticides. Although agroecology has to include all this, it is much more.

Most of the organic farmers do not use pesticides. But many use urea and DAP (Di-ammonium Phosphate, a fertiliser). Or they combine urea with cow dung and

ure. They also employ machinery that consumes fossil fuel. That is not ecology. It has to be zero synthetic herbicides, pesticides, fertilisers. In

tion, it must also have a multi-species, multi-variety [crop] ecosystem. The

government is not supporting this. In Sri Lanka too, it was a [similar case](#). It was supporting monocultures on organic manures, not agroecology.

ecology also has an important component: localisation. All material inputs to be from the local community, and the produce to be consumed within

community, the market would be local producers' market. The seeds must be the farmer's hands, and in a community seeds bank.

There are many agroecological farms in the country, but they are not supported by the government.

The Andhra Pradesh government launched the [AP Community Managed Natural Farming \(APCNF\)](#). It hopes to encourage millions of farmers to transition to natural farming in the state and eliminate use of industrial chemicals in farming. Sikkim is [reported](#) to be a 100% organic state. Your comments on such initiatives by states to transition to sustainable farming methods?

I begin with the Sikkim example. Almost all the vegetables grown in Sikkim are procured from external [supply of seeds](#). Almost all of the tomatoes and potatoes are hybrid, grown from corporate seeds, supplied by a few private [seed companies](#). Alongside, I have witnessed a rapid loss of local crop landraces and traditional agricultural knowledge systems. Crops inappropriate to the local soil and climatic conditions are being cultivated, and the traditional agroecosystem management, involving the local flora, is forgotten. Farmers have forgotten the

use of native nitrogen fixing plants, which they eliminate as "weeds". This system is against agroecology, and therefore unsustainable.

The same applies to APCNF. When a community has forgotten their traditional knowledge base associated with the traditional crop varieties, one may not expect that a group of individuals coming together will be able to recuperate the farm fertility and sustainability of production. Even when the seeds of different

varieties of rice or millets are available, most farmers have forgotten their ancestral knowledge of how and when to sow them, which other crops to grow with, or after a given crop, and how to employ certain plants and animals to enhance sustainability, with zero external input.

Worse, in the absence of assured MSP of the farm produce, local farmer markets are the best resort, but that is also usurped by intermediaries, who scoop out all excess produce and profit.

Third, the village communities are being disintegrated, so individual profit maximisation supersedes the community interest. Generally, everyone is eager to get an immediate, short term gain, here and now, at the cost of long term productivity. In a situation where an individual's motorbike is more desirable than everyone having a bicycle, agriculture is not sustainable in the long run.

What are the issues with the Union government's initiative to support natural farming? How do you create a sustainable alternative through agroecology?

Agroecology itself is sustainable. When a farmer adopts agroecology, it becomes sustainable. The meaning of sustainability in agriculture or any other production system means that there should be zero external inputs. Fertilisers, pesticides, seeds must not come from outside--be it NGO, government or seed companies. The farmer should not depend on bank loans or government aid or microcredits from NGOs for financing farming. Until the farmer is totally independent of all external inputs, including machinery, the farm is not sustainable.

On the one hand, we are asking farmers to do natural farming but the seeds come from corporations or governments, which can be hybrid seeds. There is

machinery including a seeder or harvester machine, and pump sets, running on fossil fuel, and each machine part as well as the fuel must rely on external supply. This is not sustainability.

So, farmers must have autonomy over decisions...

The farmers' sovereignty over land, seeds and means of production requires a community of farmers like it existed for thousands of years [before agricultural

f industrialisation]. Farmers markets will allow them to decide the price of the
X price that is not influenced by national or regional market prices. There
➤ should be no middleman or agency determining the price. Such a pricing system
📞 led by mutual agreement of producers and consumers is happening in
+ [Transition Towns](#) in Europe, and some farmer markets on the West Coast of the

There has been scepticism around traditional farming practice particularly about it being unscientific and the inability to produce enough [yield](#) compared to high-yielding variety (HYV) of seeds. Government institutions have pushed for HYV and you have mentioned that native varieties have suffered because of this mindset. How do you respond to concerns about food security due to the transition to organic and natural farming?

Let's not discuss the dead issue of productivity of traditional farming versus industrial farming. A plethora of [publications](#), including FAO's documents, and my [own](#), have amply demonstrated that "yield deficit" of traditional crops and farming systems is a myth. Of course the institutional inertia to accept reality over prejudices is the major issue.

I started my journey alone and continue to do so. I do not get any support from the government, so it does not matter to me if they change their mindset or not. The government's decisions may not impact farmers, who still have some autonomy. Let me give you an example, albeit a negative one. The government had banned Bt Brinjal seeds [in 2010]. But some [farmers](#) in Punjab and

Maharashtra are [smuggling the seeds](#) from Bangladesh. So the ban did not affect their decision to grow Bt Brinjal. It all depends on the farmer.

The Union government has an organic farming [policy](#) that is more than a decade old and so have some states. But most of the farmers continue with synthetic chemical-based agriculture. In the case of the farmer who grew *Agni sal*, the government did not send authorities to stop him. It was the personal decision of

farmers and their children to continue or discontinue growing this crop variety at. Ultimately it is the efficacy of the farming in their farm that determines the state of organic farming or indigenous cropping system. Policy may create a conducive environment, but even in its absence millions of farmers have been practicing traditional farming.

In your opinion, are such decisions on farming independently and additionally more prevalent in indigenous communities, compared to states like [Punjab](#) or Haryana, where the agriculture based on the Green Revolution paradigm is stronger?

Generally, I feel that northern India is in the clutches of what I call '[developmentality](#)', where all activities are based on individual benefit maximisation. It is based on a European or US concept of development along the industrial path, at the expense of the ecosystem and of social health. We have accepted that as a normative goal of society and individuals. It is now prevalent in India, particularly in northern India. Most farmers will not go for traditional varieties unless there is a promise of higher price for produce.

Majority of organic farmers are farming in the hope of premium market prices. They will stop if they do not get [good prices] because there is no ideology behind it. It is based on profits and not the kind of agroecology we should seek.

In some belts in the south, including south of Odisha, there are farmers who are not concerned about the market price. They use it for self consumption because they like the aroma and taste of a particular variety of rice or millet. Of course they need money, but they primarily grow the staple for their own consumption. This sort of subsistence does not increase GDP [gross domestic product] so the

government is not interested. So if you are doing traditional rice or crop cultivation, it does not entail industrial output, and does not interest the government.

But pre-industrial [food] production systems still persist and it is those farmers who keep traditional varieties alive. Their numbers are shrinking in indigenous communities because their children, exposed to techno-urban modernity, are not interested anymore.



Can you please explain your engagement through [Basudha](#) with the youth in sustaining your initiative of conserving more than 100 varieties of rice? What does it take and what interest do you derive from the communities you work with?

When you make a personal connection with the communities and show them that you are not there to make profit, they respect you and see the value of your work. My approach is to express gratitude to the traditional farmers on behalf of the nation for conserving native varieties [of crops].

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I also share information I access through my research on health benefits of seeds. Then they see value beyond the market value of a crop. It also helps in reconnecting cultural aspects which go beyond monetary or nutritional value.

A village may have stopped a [ceremony](#) because they lost an aromatic variety of rice. Several delicacies have eventually been forgotten in Bengal on both sides of the international border, just because the appropriate rice variety was lost. A special type of idli is no longer available in Tamil Nadu and Kerala because a couple of special rice varieties are extinct from farm fields. Ceremonies associated with those delicacies also die out.

Once we lose a variety, we lose a particular taste or aroma which is specific to a region and community. The material culture, of which food culture is a part, is intricately related to biodiversity and mutually dependent. One affects the other. When I share a seed, it reinstates a dying culture. It is true in other parts of the country too.

The EU's Farm To Fork [strategy](#) looks to reduce the use and risk of chemical and hazardous pesticides by 50% by 2030, use of fertilisers by 20%, and bring 25% of total farmland under organic farming by 2030. There have also been [reports](#) on the potential increase in greenhouse gas (GHG) emissions (in England and Wales) due to transition to 100% organic farming. Your comments on the global focus on transitioning to agroecological alternatives, and the potential increase in emissions?

X It is ludicrous to think that there will be an increase in emissions from organic farming, any more than industrial farming. In conventional chemical farming, in growing paddy, there's a lot of water utilisation. Flooding the paddy is conventional norm. The submerged urea emits GHGs. When modern farmers in northern India burn the rice stubble, they of course cause severe pollution, but that is not the fault of rice farming. Over the history of rice cultivation in the past millennia, no one ever thought of burning the stubble after harvest. The dryland farmers all over the country, until just 70 years ago, never used pump irrigation, used plenty of dry compost, and employed crop rotation technique--emitting GHG.

The fossil fuels are burned for machinery and transportation in modern production systems. Now, if you compare it to dry compost or mulching, there is almost no emission of methane. Not all farmers use wet compost. This is the science of agroecology.

Most of the people are unaware and focus on the term 'organic farming'. But what type of organic farming and what are its components? No one seems to be discussing it. If there is a transition to agroecology, it will not increase emissions. Agroecology is not new. It has been practised for thousands of years until the advent of the Green Revolution in India in the 1960s which demanded the use of synthetic chemicals and fossil fuels. If you look at the historical perspective, industrial agriculture is the alternative and not agroecology.

Global climate change is a reality. It affects farmers, particularly the unseasonal rains and droughts. In this climate, there is concern about how we will produce

our food. Industrial class has mostly created this problem.

We have to grow varieties of crops which are resilient to climate vagaries like frequent floods, long spells of drought, unseasonal rains, soil salinity. Traditional varieties of crops are the only solution and the commonsensical approach.

Farmers are dealing with high indebtedness, farm distress and migration. You talk about independent or individual farmers already following agroecology, but can it scale up?

✕ Root cause of the problem is consumerism. There is a constant demand to consume more. There are many people [and communities] in southern Odisha and Jharkhand who do not own gadgets to survive and are happy without it. WhatsApp Hundreds of indigenous farmers in Rayagada district, Koraput district, and Jajpur district in Odisha, still do not have a cell phone, TV and pump set. But in some places people have forgotten or lost their indigenous culture due to the pressure of modernisation.

The indigenous crop diversity is a result of human creative intervention and created by God or by natural selection. It is part of our human heritage. If we abandon it there are consequences like indebtedness, distress and suicides. Every year there is bumper production [of crops] but farm prices are not adequate and farmers remain poor.

Then, there is something I refer to as 'semantic imperialism'. For example, a company may come in and say that your crop is not high yielding but that their certified crop variety is high yielding. So the traditional farmer, who is already growing a high yielding variety, abandons it. By their [corporate] definition, all the traditional ones are low yielding. I have seeds in my accession that yield higher than the HYV, but farmers do not value them because they are not labelled as HYV. Semantically it is accepted that all varieties other than the HYV are low yielding.

Farmers or producers markets are needed to ensure that external factors do not impact them. There are [transition towns](#) in Europe which show that people are resisting market forces. But this is not happening here. The middle classes in

India do not talk about such markets. We talk about expensive organic produce in supermarkets because it is marketed better than farmers [can market]. The only hope is the indigenous producers themselves. It is happening independent of industrial and governmental support.

What can farmers who are transitioning to traditional farming or other sustainable farming methods do in rural or semi-rural regions

which are impacted by industrialisation, market forces and price fluctuations? How can they sustain without intervention by governments, especially if farmers markets and transition towns are present as is the case in most parts of the country?

A simple question, difficult to answer. My direct answer is: an immediate transition to agroecology. This is easier said than done, because agroecology is successful when just one or two farmers in the entire village make the

transition. It requires the community of conscious individuals, who aspire to build a better future, a more sustainable society for their children and grandchildren. The prospect of fetching a higher price for the produce, leading to the ownership of a car or an air conditioned house, can motivate an individual to adopt organic farming. But that does not entail a transition to agroecology and sustainability for the whole rural or peri-urban producer community.








In my experience, the most urgent requirement is a change in the ethos of the people. ['Enoughness, rather than moreness'](#) as Tim Bender put it, is the basis of this worldview, which is alive in the tradition of all indigenous cultures and religious belief systems. In India, this world view is not outlandish. The Upanishads, the teachings of Jain saints, [Guru] Nanak, Kabir and the Bauls, all preach against accumulation and consumerist lust, against the desire to acquire more than what you need. If that craving for "beyond the needs" were in place, a rice or millet farmer would not be driven to buy Bt cotton seeds and herbicides and get trapped in the perpetual debt cycle.

The modern farmer abandons the heirloom seeds, and borrows money to invest in buying hybrid seeds and agrochemicals every year, to grow hybrid tomato or potato, for example. And then, he is unable to sell his bumper produce at even a

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break-even price. This is exactly what happens frequently in all states. Maharashtra witnessed the bumper yield of brinjals, sold at [20 paise per kg](#), West Bengal saw potatoes sold at 20 paise per kg within the past decade.

Indebtedness and hunger of the producer's family is commonplace in the modern agriculture system, because modernisation of agriculture entails a bounty for seeds corporations and speculators, with the government bent on "free market"



 rug off the welfare state's responsibilities. Farmers cannot escape from this
 rernity until they repudiate the modern industrial system of production and
 mption. Localisation of the production and distribution system is possible
 when the community and the communitarian ethos are reinstated.
 ever the seed commons, the resource commons, and local producer market
 been established, the corporate usurpation of land and the exploitation of
 le have failed. Wherever the community welfare is valued over the
 individual profit seeking interest, sustainability has been attained. Cuba and
[Via Campesina](#) in [Mesoamerica](#) are vivid examples.

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