

[A wake-up call on proprietary seeds](#)

The Hindu Op-Ed

Updated: May 08, 2019 23:25 IST

How India can shift its agriculture from a high-yield ideal to a high-value one

[Mrinalini Kochupillai](#)

[Gregory Radick](#)



When the news broke that [PepsiCo was suing small farmers in India](#) for growing a potato variety that is used in its Lay's chips, popular sympathies immediately went, of course, to the farmers. National and international pressure swiftly mounted, and in short order a humbled PepsiCo backtracked, announcing its withdrawal of the lawsuit. There was global schadenfreude at Goliath's PR disaster and, in India, pride at being on the side of the righteous Davids.

What should not be a source of pride, however, is the fact that so many small farmers are, like the ones targeted by PepsiCo, reliant, directly or indirectly, on proprietary seeds. Typically these seeds are grown in high input (fertilizer-pesticide-irrigation) environments that, over time, erode local biodiversity. Between the expense of buying these seeds and inputs, and the loss of the skills and social relationships needed to do otherwise (through the saving and exchange of seeds of indigenous varieties), small-scale farming looks set to continue on its downward spiral of lower income, status and dignity.

It's time for a paradigm shift

No one can blame farmers for thinking that proprietary seeds are better. Since the days of the Green Revolution, agricultural extension officers — the field representatives of agricultural modernity — have taught farmers to buy ever-higher-yielding seeds. Taking this science-and-industry-know-best stance on seed quality a little further, efforts have been ongoing, albeit unsuccessfully due to pressures from farmers and NGOs, to pass a new seed law in India permitting the sale of certified seeds only.

In the current Indian law regulating intellectual property rights in seeds, the Plant Variety Protection law, this same official preference for the proprietary takes a different form. The law permits farmers not only to save and resow (multiply) seeds, but also to sell them to other farmers, no matter what the original source of the seeds is. This broad permission (called farmers' privilege) is considered indispensable for so-called seed sovereignty, which has become synonymous with permitting farmers to save, sow, multiply and use proprietary seeds, as well as proprietary vegetative propagation materials such as what are used for the cultivation of potatoes. Despite the shift away from seed replacement to the right to save seeds, the emphasis remains on proprietary seeds that have narrow, uniform and non-variable genetic builds. Where farmers could be using genetically distinctive seeds adapted to local conditions and farming traditions, they are instead adapting local conditions and traditions in order to use genetically standardised seeds, to ruinous effect.

It is time for a paradigm shift. To get a sense of what can be done, it may be useful to take a peep into recent regulatory efforts in Europe. The EU Regulation on Organic Production and Labelling of Organic Products, adopted in 2018, for the first time permits and encourages, inter alia, the use and marketing for organic [agriculture](#), of “plant reproductive material of organic heterogenous material” without having to comply with most of the arduous registration and certification requirements under various EU laws. Heterogenous materials, unlike current proprietary seeds, need not be uniform or stable. Indeed, the regulation clearly acknowledges based on “Research in the Union on plant reproductive material that does not fulfil the variety definition... that there could be benefits of using such diverse material... to reduce the spread of diseases, to improve resilience and to increase biodiversity.” Accordingly, the regulation removes the legal bar on marketing of “heterogenous materials” and encourages its sale for organic agriculture, thus clearing the way to much more expansive use of indigenous varieties.

Once the delegated acts under the EU regulation are formulated, they will support the creation of markets, especially markets and marketplaces facilitating trade of heterogenous seeds, including by small farmers who are currently the most active in maintaining and improving such seeds in situ. Indeed, multimillion-Euro research and innovation projects being invited and funded by the EU already aim to make this diversity a more integral part of farming in Europe. And here they are talking only of the diversity within Europe.

Minimise harm, maximise gain

How can a biodiversity-rich nation like India shift its agriculture from a high-yield ideal to a high-value one, where the ‘values’ include striving to minimise environmental harm while maximising nutritional gains and farmer welfare?

First, small farmers must be educated and encouraged with proper incentive structures, to engage with agriculture that conserves and improves traditional/desi (heterogenous) seeds in

situ, rather than with “improved”, proprietary varieties. Currently, in the garb of protecting this diversity against biopiracy, India is preventing its effective use, management and monetisation for the benefit of its farmers.

Second, an immutable record-keeping system, perhaps blockchain or DLT, is needed to break the link between the profitable and the proprietary. Such a system would allow India and its rural communities to keep proper track of where and how their seeds/propagation materials and the genetic resources contained therein are being transferred and traded. It would also ensure, through smart-contract facilitated micropayments, that monetary returns come in from users and buyers of these seeds, from around the globe. These monetary returns would effectively incentivise continuous cultivation and improvement of indigenous seeds on the one hand, and ensure sustainable growth of agriculture and of rural communities on the other.

[PepsiCo sues potato farmers, later offers settlement](#)

Third, and as a key pre-requisite to the execution of the first two plans, India’s invaluable traditional ecological knowledge systems need to be revived and made a part of mainstream agricultural research, education and extension services. Know-how contained in ancient Indian treatises like the *Vrikshayurveda* and the *Krishi Parashar* falls within the scope of what international conventions such as the Convention on Biological Diversity refer to as ‘indigenous and traditional technologies’. The revival of these technologies is central to promoting sustainable ‘high value’ agriculture, not least because of the growing global demand for organic and Ayurvedic products.

The withdrawal of the lawsuit by PepsiCo may be a welcome relief to several farmers who can neither afford to defend themselves in court, nor to abandon the cultivation of proprietary varieties. It must, however, be a wake-up call to the government and policymakers who need to do much more to secure sustainable rural societies, protect soil health and promote seed sovereignty for the economic development of Indian farmers and of the entire nation.

Mrinalini Kochupillai is a lecturer and Senior Research Fellow at the Technical University of Munich and Gregory Radick is a Professor of History and Philosophy of Science at the University of Leeds