Open-source seeds movement

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Why is in news? OSSI was created by a group of plant breeders, farmers, seed companies, and sustainability advocates who want to free the seed

Open source software

Open source software like Linux is well-known and widely used.

The origin of this concept can be traced to the ‘Free Software Movement’, which emphasised users’ right to the source code, to share, to modify, and to distribute modifications.

Software and seeds seem as different as chalk and cheese – but as programmers have done for decades, farmers have innovated and shared seeds without any intellectual property rights (IPR) claims for centuries.

Farmers also haven’t sought exclusive rights over seeds and germplasm to prevent others from innovating on the seeds. In this regard, software and seeds actually have a strong parallel.

Plant-breeders’ rights

GPL’s effects on the programming community, the advent of hybrid seeds, the growth of the commercial seed industry, scientific plant-breeding, and some other factors conferred plant breeders and developers of new varieties with the so called plant breeders’ rights (PBR).

In this regime, farmers’ rights were limited while rights-holders could demand royalty on seeds and legally enforce PBRs. In some countries, the PBR regulations allow rights-holders to restrict the unauthorised use of seeds to develop new varieties.

In 1994, the establishment of the World Trade Organisation and then the Trade-Related IPR Agreement cast a global IPR regime over plant varieties.

TRIPS required countries to provide at least one form of IP protection while consolidation in the seeds sector raised concerns about the freedom to innovate.

The Green Revolution was spearheaded by public-sector breeding institutions and seeds were available as ‘open pollinated varieties’, or as reasonably priced hybrids with no restrictions on farmers to cultivate, reuse and share. But the genetic revolution in agriculture was led by the private sector, with seeds mostly made available as hybrids and/or protected by strong IPRs

How is IP protected in agriculture?

In effect, there are now two forms of IPR protection in agriculture: plant-breeders’ rights and patents.

Together, they restrict farmers’ rights and the freedom to develop new varieties using germplasm from IP-protected varieties.

They have thus further consolidated the seed sector and increased the number of plant varieties covered by IPRs.

The high prices of genetically modified seeds and IP claims triggered many problems, including the State's intervention on Bt cotton seeds in India.

As public sector breeding declined and the private sector began to dominate the seed sector, the need for alternatives became keenly felt.

About Open Source Seed

In 2002, Boru Douthwaite proposed an open-source model for seeds and plant varieties.

In 2012, Jack Kloppenburg, whose 1988 book First The Seed alerted the world to trends in the seeds sector and the use of IP to control farmers' rights,launched the 'Open Source Seeds Initiative' (OSSI) in Wisconsin.

A few years later, a German NGO named Agrecol launched another initiative in Europe. Since then similar programmes have come up around the world.

Agrecol's model to meet legal requirements in Europe is based on a contracts approach in which the user agrees inter alia to not patent seeds bought under the open-source licence.

The OSSI simply asks for a pledge, that an individual won't "restrict others' use of these seeds or their derivatives by patents or other means, and to include this pledge with any transfer of these seeds or their derivatives".

Significance of Open Source Seed

One potential application of the open source approach is to use it in farmer-led seed conservation and distribution systems. There are many traditional-variety conservation and sharing initiatives in India ,including those involving farmers.

Many of them focus on traditional varieties that are unique to specific regions or sites and/or have specific features. To more widely adopt these varieties, the government and other stakeholders can consider an open source model.

The model can also be used to promote farmer-led participatory plant-breeding exercises. Traditional varieties often lack uniformity and aren't of excellent quality.

Status of India

Worldwide, the number of seed firms using open source models and the crop varieties and seeds made available thereunder is small but growing. India is yet to test and adopt it widely.

Under the Plant Variety Protection and Farmers' Rights Act (PPVFRA) 2001, farmers can register varieties as 'farmer varieties' if they meet certain conditions, and have the right to reuse, replant, and exchange seeds.

However, they can't breed and trade in varieties protected under the Act for commercial purposes. Using the open source approach here will enable farmers to gain more rights over germplasm and seeds and facilitate innovation.

The Way Ahead

Open source principles can help overcome the challenges by facilitating testing, improvisation, and adoption – all of which will ultimately be beneficial to India's food security and climate resilienceSo there is a need to test this approach with farmers and FPOs can take the lead