

# IPRs

in agriculture

# The law and its use in development

National policy makers should take note of the implications of the use of IPRs.

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There is a lot of discussion about the different options for the design of IPR regulations in developing countries, notably patents on pharmaceuticals and life forms. Key to the debate about plant breeders' rights and patents on plants is how innovation may be stimulated while avoiding the negative impact on seed systems that support development objectives. Relatively little attention is paid, however, to the questions that arise in the public and civil society organizations relating to the use of legal protection of their own innovations. Also at that level, a careful consideration of options is important in order to optimally support the public cause. The use of IPRs in public research may help change research priorities away from important public tasks, and their use in community development programmes may lead to complex debates. National policy makers should take this aspect into account.

## IPRs IN AGRICULTURE

Intellectual property rights (IPRs) provide a mechanism to stimulate innovation and creative works that benefit society. The exclusive rights over the commercialization of the protected invention or piece of art provide an opportunity for the right holder to benefit, financially or otherwise, from his/her work. The requirements to obtain a patent and the limitations to the rights aim at creating a balance between the rights of the inventor (or artist) and society. In patent systems, this is reflected, for example, in the temporary nature of the right, the obligation to publish the invention (allowing further research) and the right of the government to grant compulsory licences in exceptional cases.

### Plant breeders' rights

Life forms, especially plant varieties and animal breeds, have long been exempted from protection due to ethical and practical reasons. The concept of property rights over plants and seeds was also considered alien to farming, where farmers, even though they assign great value to seeds, liberally share them. In all current plant breeders' right (PBR) systems, specific exemptions are included to safeguard further plant breeding (breeders' exemption) and to allow farmers to continue to handle their seeds as they traditionally do (farmers' privilege). The debate on PBRs in developing

countries is particularly focused on the latter exemption, which is a reason for several countries not to accede to the International Union for the Protection of New Varieties of Plants (UPOV). This Union has reduced farmers' rights to the saving of farm-produced seeds of protected varieties, disallowing local exchange, barter or sales. This creates a policy conflict with farmers' rights to save, use, exchange and sell seeds (See Adhikari and Adhikari 2003) as laid down in the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) (See Hasan 2004).

## Patents

Since the patent system does not have such exemptions for farmers, opponents of the UPOV system even more strongly oppose the encroachment of the patent system on the field of plant breeding and seeds. The patent system entered the field of biological research only recently, through a sequence of court decisions in the United States (US) in the 1980s that gradually approved patent claims on micro-organisms, biotechnological methods and products, and even on plant varieties. These decisions influenced other major patent systems in the world, with the exemption of patents on varieties. In Europe, however, the introduction of the patent system to plant breeding has led to a reaction of the legislator, resulting in specific exemptions to allow for a farmers' privilege and a breeders' exemption on plant materials that contain a patented component (e.g., a gene).

## Development-related aspects of IPRs

IPRs should strike a balance between the benefits for the inventor and the benefits for society. This is one of the reasons why IPRs are territorial, i.e., they have to serve national interest. However, since technology moves across national borders, IPRs also have become a trade issue. The World Trade Organization (WTO) imposes a number of minimum requirements for the protection of IPRs for all its Members (See Adhikari and Adhikari 2007). These include the protection of plant varieties through patents or 'an effective *sui generis* system', which implies that countries need to develop a legal mechanism to protect PBRs (See Adhikari 2004). Several countries have chosen to accede to UPOV under its old (1978) convention since it provides for more opportunities to respect farmers' rights over the traditional handling of seeds; others use the more restrictive 1991 Act. Similarly, some others have chosen to design their own system. Several countries relate their PBRs to other rights systems, such as the national sovereignty over genetic resources, farmers' rights, and community rights over traditional knowledge. Some create different rights for

new, extant, public and farmers' varieties, and World Bank (2006) has proposed to create different levels of rights for export, commercial and mainly locally consumed crops. All these outcomes intend to tailor the rights regimes to development objectives and in this process, national patent systems deserves a lot more attention.

The focus on the developmental aspects of IPRs is difficult in the light of bilateral trade agreements that often reduce the policy space created by the WTO. Developing countries are often forced to agree to more strict requirements imposed by their trade partners, notably the patentability of life forms and UPOV membership under its 1991 Act (See Adhikari 2006). Similarly, the debate on the Substantive Patent Law Treaty may also reduce the opportunities to tailor protection levels to national needs. This shift from innovation and development objectives towards trade aspects in IPRs is not likely to benefit developing countries.

## IPRs in operation

IPRs are granted by the state but their use is left to the right holder. The right holder can decide, based on his/her marketing strategies, who may commercialize and under what conditions. Licence contracts rule the system and conflicts arising from them are resolved in courts. This means that the right holder may choose how to maximize benefits from his/her right. For example, s/he may sell it or license it against the payment of royalty, whether to one (exclusive licence) party or to several parties at the same time, possibly with exclusive market segments, etc. The right holder may also barter rights for access to other technologies, or use them to obtain research contracts, or use the rights to make sure that users get access to the technologies for free. The legislator only assigns the rights; s/he does not prescribe how these are to be used.

## IPRs AND PUBLIC RESEARCH

Public research organizations have to develop a strategy to deal with the introduction of IPRs. They have to decide how they can deal with rights on technologies and materials that they use in their research, and whether they want to protect their own inventions and how to use such rights. This paper concentrates on the latter issue.

## Revenue, recognition and public-private partnerships

Agricultural research institutes and universities in many countries are facing reductions in public funding and several see the introduction of IPRs as a way to make up for these budget cuts. Especially, research institutes

that have strong plant breeding programmes may consider their varieties as assets that may help solve their financial problems. Varieties may be licensed to seed producers and royalty income may be used to sustain these breeding programmes, and they may also provide funds to top up salaries of poorly paid researchers. PBRs may also contribute to a better recognition of the role of public institutes.

Another major reason to embrace IPRs in public research is the role of IPRs in the transfer of technologies between public and private partners in research. Without agreements on IPR protection, private partners are likely neither to share their technologies nor provide funds for joint research.

### Impact of IPRs on public research

When IPRs are to be used by public research institutions for revenue creation, there is a great risk that this will strengthen the focus on commercial (seed) crops like maize at the cost of small grains, legumes and root crops. Maize (hybrid) and finger millet can more easily provide profit in the seed market than other field crops due to high multiplication factors and low seed rates, allowing for high seed to grain price ratios, especially when combined with hybrid technology which reduces or nullifies the role of farmers as competitors of the formal seed producers. Such focus on crops with high commercial value might reduce research budgets for crops that are important for local livelihoods and nutrition.

Secondly, a strong focus on revenue is likely to strengthen the research focus on commercial farmers, who are (potential) seed buyers, at the cost of remote and resource-poor farmers who will not contribute to royalty income. Breeding for irrigated agriculture is likely to generate many more royalties than participatory plant breeding with mountain communities. The use of IPRs for revenue creation thus turns the public research institute into a semi-commercial enterprise, a strategy which is common in many provinces in China. Such commercialization strategies are, however, counterproductive when public research has tasks in reducing poverty, increasing rural livelihood options and ensuring household food security.

Using IPRs in public research institutes to facilitate public-private partnerships is a common argument in industrialized countries. Synergies can be obtained when the private sector has a better client-orientation, marketing channels and applied research capacity, and the public sector brings in more fundamental and high-risk research capacities. Agreements commonly contain rules of ownership of innovations derived from such partnerships: first right of refusal, shared benefits, etc. Such agreements may

work well in conditions where public research is primarily geared to strengthen the national private breeding and seed sectors, which in turn transfer benefits to farmers. Also, in some developing countries private seed companies may be better equipped to take new varieties to the farmers. Most private seed sectors in developing countries are, however, unable to reach remote and resource-poor farmers (with the exception of vegetable seeds) and the public sector has an important role in addressing the needs of these farmers. This creates a fundamentally different situation compared to public research in many industrialized countries, and thus the role of IPRs in forging public-private partnerships is different, and might—again—lead to an increased focus on commercial farmers at the cost of investments on the needs of their poorer counterparts (Louwaars et al. 2006).

### Institutional policies

Policies of public research institutions should thus carefully analyze their primary tasks and make sure that their institutional IPR policies are in agreement with these. They will have to carefully balance their financial interest with their public tasks, and opportunities to connect with the private seed sector, while maintaining a focus on remote and resource-poor farmers, depending on national agricultural policies.

In some countries, where revenue will directly go to the national treasury (e.g., India), this discussion is not relevant. In some, it is essential since public institutes are promoted to obtain IPRs (e.g., the US). In others, the situation is different again; individual scientists get all the rights (e.g., Vietnam). There are important differences in the tasks of public research organizations and in the national policies with reference to IPRs, so there is no blueprint solution to the challenges, except that the 'development' requires a careful consideration.

### IPRs AND CIVIL SOCIETY

Unlike the private sector and, in some cases, public research organizations, civil society organizations (CSOs) hardly ever create intellectual property apart from copyrighted materials. In participatory plant breeding, however, farming communities and their public and CSO partners do create new varieties and the question may arise whether they should use the rights systems that may exist. This question has explicitly come up in the Philippines and in Nepal and may have arisen in several other countries too. In this respect, there are two basic questions:

- Should farmers have the right to protect their local landraces that have been developed over the centuries based on farmers' and natural selection?

- Should farmers protect their newly developed varieties in community or participatory plant breeding programmes?

The first question relates to farmers' rights and the protection of traditional knowledge, and views have been expressed that the novelty and uniformity requirements of the PBR systems should be reviewed to make it possible for genetically diverse landraces to comply. Although it would in principle be correct to provide farmers with the same rights as breeders in this respect, it may be doubted whether such landraces would be commercially interesting enough to warrant the costs of registration and protection.

The situation may be quite different with regard to new farmers' varieties, i.e., new varieties developed outside the national research system, which may be as uniform as scientifically bred ones. Here, it may be viable for the farmer-breeders to commercialize the seeds of such varieties and formally register them to get a monetary reward for their work. There are examples that farmer-breeders indeed get benefits through the production of foundation seeds of their own registered varieties (e.g., collaborators in the programmes of the Local Initiatives for Biodiversity Research and Development (LIBIRD) in Nepal). However, farmers in the Philippines concluded that they did not want to get PBRs on the variety 'Bordagol', which they developed through collective effort. Their main argument was that they oppose the concept of IPRs in agriculture as being alien to their traditional ways of handling seeds and that they do not want to side with the commercial sector. They are proud to have developed and registered this variety and to provide it to fellow farmers without legal restrictions.

It is considered important, though, that the new farmers' variety is registered—to get recognition from their fellow farmers as well as the seed registration system, and also to avoid that anybody else claims rights on it. This 'defensive' approach could also lead to formal protection under the strategy that the right holder is allowed to provide the variety to anybody free of charge, and—in most PBR systems—it would create a say in future varieties that are 'essentially derived' from particular farmers' varieties, thus creating an opportunity to keep more varieties in the public domain.

## CONCLUSION

IPRs create debates beyond the levels of policy makers and legislators, since next to the extent of the rights themselves, it is the strategies on their use in organizations that determine whether they contribute to or oppose development goals. ■

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South Asia Watch on Trade, Economics & Environment (SAWTEE) is a regional network that operates through its secretariat in Kathmandu and 11 member institutions from five South Asian countries, namely Bangladesh, India, Nepal, Pakistan and Sri Lanka. The overall objective of SAWTEE is to build the capacity of concerned stakeholders in South Asia in the context of liberalization and globalization.