

MANAGING INTELLECTUAL PROPERTY  
AT THE  
INTERNATIONAL AGRICULTURAL RESEARCH CENTERS

Summary Report of the

Workshop on Consequences of  
Intellectual Property Rights  
for the  
International Agricultural Research Centers

held at  
ICRISAT Center  
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<http://www.agric-econ.uni-kiel.de/Abteilungen/II/forschung/file1.pdf>

## **A. INTRODUCTION**

The consequences of the introduction of plant breeders' rights were considered by TAC for the CGIAR in 1982. It was concluded that: (1) breeders' rights contribute indirectly to increased genetic erosion, (2) the impact of breeders' rights on the International Agricultural Research Centers (IARCs) would not be as significant as first thought because of their increasing emphasis on strategic research and decreasing emphasis on producing [final products] finished varieties, and (3) there was no evidence available on the effects of plant breeders' rights legislation on the free movement of genetic material. TAC did not consider it appropriate to make recommendations about the introduction of plant breeders' rights in developing countries at that time.

In view of recent and expected changes in the scientific, legal, and institutional environment of the Centers, ICRISAT, at the request of the CGIAR Secretariat, convened a workshop to explore the effects on research management at the Centers of the expanding domain of intellectual property rights.

The workshop had no mandate to recommend specific policies to the Centers or to the CGIAR. It was thought, however, that the interaction of Centers' management representatives with resource persons representing universities, public-sector research institutions in developed countries, intellectual property law practitioners, and commercial organizations would be valuable for the Centers in shaping their own intellectual property management strategies.

This report is a summary of the consensus reached among those in attendance on the major issues that were identified.

## **B. THE MISSION OF THE CENTERS IN A NEW ENVIRONMENT**

Since TAC considered the consequences of plant breeders' rights in 1982, significant changes have occurred in the Centers' scientific, legal and institutional environment. These changes are driven by dynamic interactions between emerging opportunities in biotechnological research, increasing interest by public research institutions in developed countries in controlling and commercializing research outputs, restructuring of, and closer interactions between, private and public agricultural research industry, constraints on public research budgets and by an extending domain of intellectual property rights. The forces driving the changes are likely to continue.

The changes are unlikely to affect the mandates of the Centers. Ignoring them would, however, adversely affect the Centers' capacity to pursue their missions. These changes provide new opportunities for the Centers to accelerate transfer of technologies, open new avenues for research collaboration between developing and developed countries, and to attract resources to agricultural research in developing countries. Inappropriate response to the changes by the Centers could erode their working relationships with national agricultural research systems, and reduce their attractiveness to research collaborators.

### **1. Changing Research Opportunities**

Biotechnology has opened new research vistas that are being vigorously explored by public and private research organizations in developed and developing countries. Biotechnological research by private industry is focused on commercially important uses. Strategic biotechnological research by public organizations in developed countries will leave many areas of interest for developing countries unexplored. Many lacunae therefore await attention by the Centers and their collaborators.

Conventional plant breeding is receiving declining public support in developed countries. Privately financed research, on the other hand, is growing in importance in both developed and developing countries.

The focus of research by the Centers is shifting away from applied crop improvement toward strategic research. Furthermore, and increasing emphasis on biotechnological research is creating more opportunities for cooperation with advanced research institutions with attendant responsibility on Centers to protect resulting intellectual property. As raw material for biotechnology research, the importance of the germplasm held in trust by the Centers will increase. Ready access to it must remain assured.

## **2. Changes in the Institutional Environment**

The comparative advantages of private and public research organizations in developed and developing countries are changing with the emergence of new research opportunities. Where public and emerging private seed industries develop research capacities for mandate crops, the Centers can reallocate resources to new areas and adjust their research priorities.

Biotechnological research for most widely grown crops is likely to attract sufficient private research resources to allow the Centers to concentrate on their areas of comparative advantage. The Centers will retain their advantages in research on staple food commodities, commodities adapted to unfavorable natural environments, agricultural resource management, and other areas that do not promise quick commercial returns.

Advanced research institutions in developed countries increasingly adopt patent and licensing policies to control the exploitation of their inventions and discoveries and, in the process, generate revenues, albeit small, to support their research budgets.

## **3. Changes in the Legal Environment**

The scope of patent protection in developed countries is widening to include biological products and processes. Protection for nonpatentable innovations is also expanding. The International Union for the Protection of New Varieties of Plants (UPOV) is considering stronger rights granted under its rules. The current GATT negotiations may induce developing countries to strengthen the protection of intellectual property.

The legal environment will continue to change. The development of intellectual property right legislation and case law will require continuous monitoring by the Centers individually and by the CGIAR System.

## **4. Enhanced Commercial Value of Germplasm**

The Centers hold in trust wild and weedy taxa, landraces, and folk varieties of their mandate crops. They also conserve germplasm of commercial varieties, including obsolete, current and new cultivars, and elite breeding lines. The extension of the domain of patents and breeders' rights enhances the potential commercial value of germplasm that is now in the international public domain, and encourages the countries of origin to establish rights to these genetic resources.

## **C. OPPORTUNITIES AND BENEFITS OF COLLABORATION**

### **1. Collaboration With Public Research Institutions**

Collaboration with national programs will be affected by breeders' rights, should laws establishing such rights be more widely enacted. Enforceable breeders' rights would enable Centers to transfer rights to varieties to national programs in developing countries, or grant them exclusive, territorially circumscribed licenses that could then be used to generate revenue for the national programs.

Traditionally, Centers have collaborated with advanced research institutions on the basis of free access to research results and germplasm. More recently, many collaborating institutions have adopted technology management policies under which they control the use of their intellectual property by others. As a result, Centers can no longer rely on goodwill alone to safeguard their interests but need themselves to negotiate collaboration agreements in which rights and obligations are clearly defined.

### **2. Collaboration With the Private Sector**

Research by the emerging private seed industry in developing countries would be strongly encouraged if breeders' rights legislation is more widely enacted. Where the industry is working on Center mandate crops, industry research would complement research by the Centers, allowing the Centers to reallocate some research resources away from applied breeding research. The industry could become both customers and distributors, converting the results of strategic research by the Centers into marketable products.

Communicating a clear intellectual property policy is an essential step in building the trust and confidence required for mutually beneficial cooperation with private industry in developed countries. Obligations from contractual arrangements with private industry unavoidably constrain conduct by the contracting partners. Such constraints, however, are the basis for predictable conduct without which private industry collaboration cannot be sustained.

To implement such policies, it will be necessary for the Centers to build an administrative infrastructure for the management of their own intellectual property. An effective infrastructure for intellectual property management at the Centers is also necessary to convince others that their intellectual property will not be misused or lost when used by a Center.

## **D. RIGHTS AND REWARDS**

Intellectual property rights such as patents, plant breeders' rights, copyrights and trade secrets (for a brief description see the Annex) allow, but do not require, their holder to extract revenue from the users of inventions and discoveries. The law creates rights that can be asserted as the holder sees fit. Recovering research costs from the licensing of proprietary materials will not be a primary concern of the Centers. In particular, rights to intellectual property should not be used by the Centers to extract revenue from partner countries. Monetary returns, however, could be used to support an adequate infrastructure for managing the intellectual property of a Center without diverting scarce research funds. Intellectual property rights can also be used by the Centers as leverage in quid pro quo exchanges of information assets and proprietary material owned by private and public research organizations.

## **E. INTELLECTUAL PROPERTY MANAGEMENT AND TOOLS**

### **1. Guiding Principles**

Intellectual property management in a changing legal, technological and economic environment must be flexible to accommodate unforeseen circumstances. Flexibility, however, must be guided by principles that encourage cooperation between the Centers and their partners and which enhance transfer and application of research results.

Intellectual property management should make the intentions of the Centers transparent and predictable. Both transparency and predictability allay fears of intellectual property disputes, build trust, and facilitate research cooperation.

Inventions and discoveries can be transferred through publication or contractual arrangements, such as material transfer agreements licenses, and research contracts. When the assertion of ownership of an invention or discovery would prevent immediate publication. Centers will have to carefully assess the impact of delayed publication, and their intellectual property management options on the speed of technology transfer.

### **2. Publication**

Publication prevents others from unfairly asserting rights to plant varieties or other innovations developed by a Center, by destroying the "novelty" required if a breeder or innovator is to claim rights. On the other hand, premature publication of a description of an invention can prevent or limit the assertion of patent rights by the Center.

Usually, publication is delayed to permit making a decision regarding the wisdom of patenting inventions until a patent application has been filed. The Center may also wish to disclose unpublished inventions in confidence to potential licensees in order to explore possible commercial exploitation before deciding whether or not to invest money and effort on a patent application. This should not interfere substantially with the researcher's right to publish, although a reasonable period of delay may occur.

Centers should carefully assess the impact of delayed publication of research results, especially with regard to the national programs, should the need to delay publication arise from collaboration with private industry. A balance must be struck between the transfer-related benefits of protection and the costs of delaying publication in determining how most effectively to disseminate the products of research. In many cases, timely publication will be the most appropriate way of disseminating research results.

### **3. Research Contracts**

Research contracts provide opportunities to develop or exchange proprietary materials or techniques, and should provide for disposition of intellectual property. This category should generally not include testing agreements, which, by their nature, do not ordinarily involve the creation of new intellectual property.

### **4. Material Transfer Contracts**

Such agreements can facilitate Center research by allowing the use of proprietary materials of others, subject to limitations on use, and on nondisclosure; nevertheless, the results of Center work should not become subject to secrecy obligations. Such agreements should also be used in distributing materials to others, to preserve the Center's rights to the material and its derivatives, and to prevent

recipients from later asserting rights that are inconsistent with the best interests of the Center and its beneficiaries.

## **5. Licensing**

Licensing of intellectual property provides a means of disseminating technology in a more controlled way than publication and free distribution of materials. Intellectual property rights (such as patents) may be managed as a Center deems appropriate. The ability to selectively apportion such rights gives a Center alternative options for accelerating technology transfer and fostering selectively national research institutions.

The primary purpose of licensing should be to enhance these objectives, and should not focus on revenues. Licensing may be done on an exclusive basis in situations where the economics of exploiting the innovation so require. Thought should be given to limiting the term and the territory of the license, as well as to including other specific terms and conditions to advance the interests of the Center, national programs, and developing countries generally. Where circumstances are such that it is unnecessary to create monopoly rights in order to achieve effective transfer, nonexclusive licenses are more appropriate.

Such an assessment should consider market structure, as well as development and marketing costs. In a market dominated by one or a few firms, or where development and marketing costs will require significant investment, exclusive licenses are more suitable for assuring transfer of technology than nonexclusive licenses. Of course, the Center must reserve the power to revoke the exclusive license should the licensee fail to make diligent efforts to commercialize the invention or discovery within a reasonable time, or otherwise fail to fulfill conditions stipulated in the license.

## **F. INSTITUTIONAL ARRANGEMENTS AND EFFECTS ON CENTER ACTIVITIES**

Organizations choosing to purposely manage intellectual property must create appropriate administrative mechanisms. Competent professional advice will be required to assist in developing and implementing policies, both initially and on a continuing basis as issues arise. Staff policies should encourage the timely disclosure of innovations, and staff will be needed to evaluate patentability and commercial potential, prepare and prosecute applications for rights, negotiate licenses, collect fees and royalties (if any), and enforce rights against infringers. It is essential that the administration of intellectual property be handled outside the research programs of the Centers. Centers may also elect to obtain intellectual property management services from private firms which perform these functions.

Perhaps some of this support could initially be provided from a central source to all Centers. Professional advice, model policies and procedures, as well as sample contracts and licenses, might be provided by such a shared facility.

The costs of maintaining an intellectual property administration unit would be significant. Initially, it would be necessary to finance them from core funds; however, it may be possible to recover some costs as royalties from commercial users, with self-sufficiency as a goal. The objective of the licensing program should be to protect and enhance the interests of the Center and its intended beneficiaries, however, and not to generate revenue.

Pro-active intellectual property strategies will require other important changes in Centers' external relations and in their internal administration.

## **1. Germplasm Distribution**

It is important that germplasm resources be made readily available worldwide on a nondiscriminatory basis. In order to protect access to wild taxa and landraces, it may be necessary to develop creative agreements for distribution of such germplasm.

Germplasm with identified useful genes and improved genotypes could be distributed for research purposes under written agreements requiring recipients to use the material only for research, and also requiring that this condition be attached to any further distribution of the material and its derivatives. Commercial exploitation of protectable material would require the user to obtain a license.

Biotechnological exploitation of cells, organelles, genes, or molecular constructs, identified with surety, from germplasm of a Center might be permitted for research purposes pursuant to a written material transfer agreement; commercialization would require the user to apply for a license.

## **2. Ownership of Inventions and Power to Negotiate**

Intellectual property rights arising from Center research should not be held by Center staff and all inventions made in the fulfillment of employment should become the property of the Center. Centers should insist that inventions and discoveries made by Center staff posted at advanced research institutions are not unfairly appropriated by the host institution.

The power to control the use of intellectual property owned by a Center and to negotiate the terms and conditions governing its use by others should rest with the Center and not with individual researchers.

## **3. Staff Policies**

The right of the researcher to publish should be unaltered, subject only to a reasonable delay for the purposes of establishing intellectual property rights. All professional staff should sign agreements to disclose and assign rights to discoveries and inventions, whether patentable or not, to the Center. Since this may reduce the incentive to innovate, Centers should explore other ways for providing incentives to encourage inventive research.

## H. ANNEX

### Mechanisms of Protection

Patents allow an inventor to exclude others from making, using, or selling the invention within the jurisdiction of the sovereign state issuing the patent. It must be a result of significant human intervention, be novel, not obvious, and serve some useful purpose. The inventor's rights are protected even from others who make the same innovation independently. The rights vest in the inventor personally, even if the invention is made in the course of employment, in the absence of a valid agreement to assign.

Plant breeders' rights (plant variety rights) allow a breeder the exclusive right to exploit a new variety. The variety must be distinct (i.e., clearly different from other known varieties), uniform and stable, and may include varieties found in nature. Free use for experimental purposes is generally provided under the statutes.

Copyrights allow an author to assert control over copying of his or her creative work. It does not protect against others who independently produce the same work. The rights to the works of employees, made in the course of employment, vest in the employer.

Trade secrets protect against unauthorized appropriation of proprietary data. In order to claim legal protection, the owner must have diligently sought to protect against disclosure. Where subject matter is not otherwise protectable (such as by patent or other statutory scheme), it may be the only means of preserving control over the dissemination of know-how.

## I. APPENDICES

1. Workshop program
2. Workshop participants