

Intellectual Property Rights in African Agriculture:

Implications for Small Farmers

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About this Briefing

This briefing was researched and written by Devlin Kuyek for Genetic Resources Action International (GRAIN) and a group of NGOs that aim to raise awareness about the implications of genetic engineering and intellectual property rights for small farmers in Africa. These NGOs include SACDEP (Kenya), RODI (Kenya), Biowatch (South Africa), ISD (Ethiopia), Jeep (Uganda), CTDT (Zimbabwe), Pelum (Regional, Southern Africa), ITDG (International), Gaia Foundation (International) and ActionAid (International).

This briefing aims to provide rural community workers, farmers and policy makers in Africa with information that will contribute to their understanding of the implications of intellectual property rights (IPRs) on plant genetic resources for small farmers in Africa. It especially focuses on the situation in East and Southern Africa. It situates the emergence of IPRs on plant genetic resources within a larger history, in which the innovative strength and traditions of African farming communities have been consistently disregarded. It concludes that the emergence of IPRs in African agriculture is highly detrimental to local food production and small farming systems, and that a reorientation of policies is urgently needed.

We gratefully acknowledge the many groups and individuals who gave time and information in preparing this paper. Comments may be addressed to Devlin Kuyek at devlin@progression.net

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GRAIN is an international non-profit organisation which promotes the sustainable management and use of agricultural biodiversity based on people's control over genetic resources and local knowledge. To find out more about GRAIN, visit our website.

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The logo for Genetic Resources Action International (GRAIN). It features the word "GRAIN" in a large, bold, serif font. A stylized plant with a single leaf is positioned behind the letter "I". Below the word "GRAIN" is a horizontal line, and underneath that line, the full name "GENETIC RESOURCES ACTION INTERNATIONAL" is written in a smaller, all-caps, sans-serif font.

GENETIC RESOURCES ACTION INTERNATIONAL

1. INTRODUCTION

Traditionally, innovation in African agriculture has proceeded through collective community processes, drawn from customary practices based on sharing. But over the past decade, African countries have been pushed down the path towards private monopolies—in the form of intellectual property rights (IPRs). These rights are based on a very different culture, where the right to deny access to innovations is supreme. Those supporting IPRs argue that they will bring agricultural development and increase food production by encouraging private technology transfer and investment in research. This briefing, however, suggests that the push for IPRs is an attempt to privatise Africa's innovative practices and biological resources and reorganise its seed markets for the benefit of foreign corporations. Africa's farmers and the abundant knowledge and plant diversity they have nurtured are bound to be trampled over in the process, threatening Africa's already fragile food security.

African countries are being forced to choose between two conflicting paths for agricultural research and development (R&D): one rooted in the knowledge and practices of its farmers or one dependent on the products of Northern corporations.

This briefing begins with a historical survey of innovation in African agriculture, uncovering the various processes shaping innovation and identifying the different actors that can be considered innovators. It moves into a discussion of the current emergence of IPRs: looking at the implications for small farmers and then examining the different ways in which IPRs are being promoted. From there, it traces a picture of the current IPR landscape: showing which countries have adopted IPR regimes and assessing recent efforts by African governments to move in alternative directions. This takes the briefing to the conclusion, where the role of civil society is discussed. In this final section, the briefing highlights local efforts to resist IPRs, and develop alternative models of community rights which will support farming communities in their efforts to control local resources and research and development.

“African countries are being forced to choose between two conflicting paths ... one rooted in the practices of its farmers or one dependent on the products of Northern corporations”



2. INNOVATION: A MATTER OF PERSPECTIVE

IPRs, such as patents, plant variety protection, copyrights, and trademarks, are exclusive monopoly rights over a creation that society provides to the inventor for a period of time. While such monopoly protection obviously restricts the dissemination of knowledge, it is supposed to be counterbalanced by the incentive that it provides to innovate. Supporters of IPRs argue that the period of monopoly protection allows inventors to recoup their research and development costs. The American Seed Trade Industry, for instance, says: “Strong intellectual property protection allows developers of new plant varieties and improved seeds to be rewarded for their efforts. This promotes research and development, which ultimately enhances crop production and conservation of genetic resources.”¹

Innovation, however, can come in many forms and there are many different people that can be considered innovators. An employee of a company may invent a new way to make cars more energy efficient, while a farmer may develop a new way to keep rats out of her fields. Both of these people are innovators. But only one of them stands to benefit from an exclusive monopoly on the invention. IPRs do not automatically help to encourage or reward innovation. In considering how IPRs will impact agriculture in Africa, it is very important to consider what type of innovation African agriculture needs and who Africa’s agricultural innovators are.

From innovation to imposition

“The Suazi of Swaziland nurture and use about 200 plant species, and the Tembe Thonga of southern Africa regularly use 106 species for their daily needs”

Until the European imperial powers imposed their will upon the continent, the innovation of African farmers was guiding agriculture along a trajectory rooted in the needs of the people and their shifting surroundings. In sub-Saharan Africa, farming began in Ethiopia between the 4th and 6th millennia BC. Not long after, migrating pastoral peoples took their agricultural practices to the rich, open lands of what is now Kenya and Tanzania. In West Africa, the cultivation of millet began in Mauritania at around 1000 BC, while rice cultivation began in the Niger River Valley about a century later. At the same time, communities in the West African forests started cultivating yam and oil palm. Relative to other regions of the world, African farmers were slow to take up sedentary agriculture practices. There were good reasons for this. For one, they didn’t need to. African communities generally had access to an abundance of land and could gather the plants they needed for food and medicine by foraging. And, secondly, for large parts of Africa, environmental conditions made continuous, intensive agricultural production very difficult.²

Under these conditions, African communities had to develop complex farming and foraging systems in order to survive. The Suazi of Swaziland, for instance, nurture and use about 200 plant species, and the Tembe Thonga of southern Africa regularly use 106 species for their daily needs.³ The Kpelle women in Liberia maintain over 100 varieties of rice in swidden cultivation. In southern Africa, women are reported to store seed of 10 ecotypes of sorghum and pearl millet at a given period in their homestead granaries.⁴ With this strong tradition of innovation, African farmers have had little difficulty incorporating new technologies or varieties coming from outside (like cassava, banana, and maize) into their production systems.



¹ American Seed Trade Association News Centre: <http://www.amseed.com/qaDetail.asp?id=37>

² Ralph Austen, *African Economic History: Internal Development and External Dependency*, James Currey Ltd: London, 1987.

³ Pat Roy Mooney, “The Parts of Life: Agricultural Biodiversity, Indigenous Knowledge, and the Role of the Third System,” *Development Dialogue*, 1996:1-2, p.85.

⁴ Temba Musa, “Farmer Seed Systems,” in *Proceedings of the International Workshop on Developing Institutional Agreements and Capacity to Assist Farmers in Disaster Situations to Restore Agricultural Systems and Seed Security Activities*, FAO, Rome, Italy, 3-5 November, 1998. <http://www.fao.org/WAICENT/FaoInfo/Agricult/AGP/AGPS/norway/Tabcont.htm#Table>

Africa's agricultural history was brutally interrupted by the European imperial powers. Beginning with the predatory slave and ivory trade of the 18th and 19th centuries and continuing into the colonial experiments of the 19th and 20th centuries, the Europeans used military violence to acquire territories, subdue peoples, and enforce a massive reorganisation of societies that wiped out much of Africa's rich agricultural heritage. Wherever possible, the European powers established plantations to produce for home country markets. Plantation agriculture was highly inefficient in most African environments, and profits were only maintained through the extreme exploitation of African workers and the gross appropriation of resources.

Where plantations could not be established, the European powers used political, social and violent means to force African farmers into cash crop production for the mother country. Alternatively, where European-style grain farming and cattle-rearing was possible (such as in South Africa, Zimbabwe, Zambia, Kenya and Mozambique) they enforced land distribution policies, tax measures, and infrastructure projects to support white settler farmers and marginalise African farmers.⁵ In Kenya and Uganda, for example, the state assured white settlers a monopoly on the cultivation of *arabica* coffee varieties, while restricting African farmers to growing the lower-priced *robusta* varieties.⁶ African agriculture also suffered from the agricultural experts that the colonial powers began to send to the colonies in the 1930s. These experts were sent to boost the productivity of the African farmer, but nearly all the techniques they promoted failed miserably and some led to major disasters.

In post-colonial Africa, the damage caused by the European imposition has not healed. While colonialism often destroyed traditional farming practices and the systems of innovation that they embodied, there was little effort to reinvigorate Africa's strong history of local innovation to rebuild agriculture. Such a transformation would have required deep structural change, such as land redistribution and a shift in focus from production for export to production for local food security that governments were unwilling or unable to implement. It was far simpler to retain the colonial stereotype of the African farmer as 'backward' and cast aside the innovative potential of rural communities. Agricultural development became a matter of modernising the African peasantry with the products of Western science and technology.

But Africa's "Green Revolution" never materialised. For the most part, the modern technologies developed by international and national research institutions proved inappropriate and unpopular with Africa's farmers. In West Africa, one study found that, "after forty years of breeding research on sorghum and millet at internationally-supported research stations, less than 5% of the crops are planted to such material because it does not meet most farmers' needs."⁷ Where farmers did adopt modern inputs, it was only by way of generous state subsidies. These farmers abandoned their traditional seed varieties and practices and took up the free inputs of pesticides, fertilisers and hybrid seeds. As a result, they lost their traditional seeds and became dependent on outside technologies. But these subsidies came to a brutal end in the late 1980s when the World Bank imposed structural adjustment programmes on African countries. State seed companies were privatised and seed prices as much as tripled, leaving small farmers without access to commercial seed or traditional varieties.⁸

So far, Western technology and models of innovation have not offered much help to the average African farmer. Rather, Africa's farmers have done an excellent job looking after the continent's food security *despite* the 'help' from outsiders.

"After forty years of breeding research on sorghum and millet at internationally-supported research stations, less than 5% of the crops are planted to such material because it does not meet most farmers' needs."



⁵ Ralph Austen, *African Economic History: Internal Development and External Dependency*, James Currey: London, 1987, pp 140-141.

⁶ *Ibid.*

⁷ JS Carr, "Technology for Small-scale Farmers in Sub-Saharan Africa. Experience with Food Crop Production in Five Major Ecological Zones," *Technical Paper No. 109*, World Bank: Washington DC, 1989.

⁸ Jannik Boesen et al, "Agricultural Policy in Africa after Adjustment," *CDR Policy Paper*, September 2000.



Africa's silent innovators

Small farmers constitute Africa's most important and most capable innovators. Sahelian farmers, for instance, produce 2 to 10 times more animal protein/km² than farmers in Australia and the USA.⁹ The innovation of African farmers is particularly important when it comes to plant breeding. It is estimated that African farmers depend on seeds cultivated within their own communities for as much as 90% of their seed needs. Most of these seed breeders are women, as they produce 70% of the food for use in the region.¹⁰ They carefully select those seeds that respond to various soil types and growing conditions and that carry particular traits such as stability, disease resistance, drought tolerance, palatability, and storage quality.

Formal sector breeders, from the private and public sectors, remain relatively insignificant. In Uganda, the formal sector supplies only 1% of the bean seed used by farmers. In the Machakos area of Kenya, commercial seed accounts for less than 2% of the cowpea and pigeonpea seed used by the average farmer, neighbours and local markets supply over 17% and the rest is saved by the farmer herself.¹¹ In the Southern African region, on-farm seed multiplication and farmer-saved seed constitute 95-100% of the seed used for sorghum, millet, food legumes, roots and tuber crops.¹² In Zambia, 95% of the millet crop is grown from farmers' seed.¹³ Even with a commercial crop like maize, small farmers are typically the main suppliers of seed. In Malawi, despite years of effort by the state seed company and private seed companies, hybrid maize covers no more than 30% of the smallholder area.¹⁴ Small farmers constitute by far the largest sector of seed breeders in Africa and they have cultivated the abundant diversity that sustains the continent's food security. Farmers in Uganda, for example, have developed hundreds of varieties of bananas since the plant first arrived on the continent.¹⁵

Innovation by corporate breeders

The private sector provides another source of plant breeding innovation in Africa. With the exception of a few African-based seed companies, the private seed sector in Africa is dominated by a handful of transnational corporations (TNCs), as it is in the rest of the world. Just six TNCs control over 30% of the global seed market. The same six corporations control over 70% of the global pesticide market and over 98% of the global market for patented genetically modified crops. The driving vision behind this integration of seeds, pesticides, and biotechnology industries is to develop transgenic seeds that are programmed to grow according to specification. Companies have used genetic engineering to develop crops that do not reproduce in subsequent generations, crops with resistance to their proprietary herbicides, and crops that will not grow properly unless sprayed with a patented chemical concoction. Although the R&D costs are high, the companies believe that they can recover these expenditures through monopoly rights and royalties.

Until recently, the transnational seed industry had little interest in Africa. Outside South Africa and Zimbabwe, the Sub-Saharan seed market is worth only \$200 million—which is a paltry amount these big companies.¹⁶ But with the advent of genetic engineering, these companies are beginning to take a more active interest in the African seed market.¹⁷ Industry analysts estimate that the introduction of genetically modified crops can increase the value of seed markets by 50%, making even the relatively small African market quite valuable.¹⁸ Table 1 shows how seed TNCs are expanding their positions in Africa.

"African farmers depend on seeds cultivated within their own communities for as much as 90% of their seed needs."

⁹ FWT Penning de Vries and MA Djitéye (Eds), "La productivité des pâturages sahéliens. Une étude des sols, des végétations et de l'exploitation de cette ressource naturelle," *Agric. Res. Rep.* 918, PUDOC, Wageningen, 1982.

¹⁰ FAO, "A synthesis report of the Africa Region - Women, agriculture and rural development," Prepared under FAO's *Programme of Assistance in Support of Rural Women in Preparation for the Fourth World Conference on Women*, 1995, <http://www.fao.org/docrep/X0250E/X0250E00.htm>

¹¹ Ann Gordon, "Improving Smallholder Access to Purchased Inputs in Sub-Saharan Africa," *Nation Resources Institute, Policy Series No. 7*, University of Greenwich, 2000.

¹² WR Scowcroft and CE Polak Scowcroft, "Developing a strategy for sustainable seed supply systems in Sub-Saharan Africa," *Proceedings of the Regional Technical Meeting on Seed Policy and Programmes for Sub-Saharan Africa*, Abidjan, Côte d'Ivoire, 23-27 November, 1998, <http://www.fao.org/ag/AGP/AGPS/abidjan/tabcont.htm>

¹³ www.fao.org/ag/AGP/AGPS/Abidjan?TA11.gif

¹⁴ Joseph Rusike and Melinda Smale, "Malawi," in Michael Morris (ed), *Maize Seed Industries in Developing Countries*, CIMMYT, 1998, p.291.

¹⁵ MC Fallers, "The Eastern Lacustrine Bantu (Ganda and Soga)," in *Ethnographic Survey of Africa: East Central Africa, Part. 11*, Int. African Institute, 1960, http://www.tropag-fieldtrip.cornell.edu/Thurston_TA/MulchReferences.html

¹⁶ The seed markets of South Africa and Zimbabwe are collectively worth \$300 million so, not surprisingly, several transnational seed companies have operations there.

¹⁷ Patrick Heffer, FIS/ASSINSEL, "Basic Figures on International Seed Trade," presented at the *Preparatory Meeting for the Establishment of an African Seed Trade Association*, Lilongwe, Malawi, 8-10 April, 1999.

¹⁸ G Traxler, "Assessing the prospects for the transfer of genetically modified crop varieties to developing countries", *AgBioForum*, Vol. 2, Numbers 3&4, 1999, pp 198-202. <http://www.agbioforum.org/>

The multinational seed industry's expansion into Africa has come with intense pressure for developing IPRs. While the industry portrays itself as a benevolent source of technologies essential to African food security,¹⁹ it has no intention of giving away such technologies for free. As part of their plans to expand markets in Africa, the seed TNCs have made it clear that they expect monopoly rights over their seeds. Peter Pickering, the manager of Pioneer South Africa, sums up the view of the multinational seed industry in Africa: "We will not operate in any country that does not have IPRs."²⁰

The multinational seed industry's growing interest in African seed markets should not be confused with a new found interest in Africa's small farmers. According to a recent Rockefeller Foundation study: "In Africa, multinational seed companies may be motivated to popularise one or even several high-yielding maize hybrids among better-off farmers in favourable areas, but it is less likely that they will find it profitable to devote significant resources to developing varieties with the very specific advantages required by small-scale, low-input farmers."²¹ The seed industry's push for IPRs is only an attempt to increase control over the seed markets for those crops that can generate significant commercial returns, such as the hybrid maize markets of southern Africa, the export-oriented horticultural market in Kenya or the emerging fruit markets of Egypt and Morocco.²²

¹⁹ <http://www.monsantoafrica.com/monsantoafrica/default.html>

²⁰ Personal communication, June 2001.

²¹ Joseph DeVries and Gary Toeniessen, *Securing the Harvest: Biotechnology, Breeding and Seed Systems for African Crops*, CABI Publishing: UK, 2001, p21.

²² Business Alliance for International Economic Development, "American Foreign Assistance in the Real World: A Closer Look" in *Protecting America's Future: The Role of Foreign Assistance*, April 2000, http://www.fintrac.com/alliance/protecting_toc.htm

Table 1. Some Multinational Seed Operations in Africa

Company	Subsidiaries operating in Africa
Advanta (UK/Netherlands)	Asia Pacific Seeds (South Africa) Sluis Brothers (Tanzania)
Monsanto (USA)	Cargill (USA) Carnia (South Africa) Delta and Pine Land (USA) Monsanto (Kenya) National Seed Company of Malawi Sensako (South Africa)
DuPont (USA)	Pioneer Hi-Bred (USA) Etsala National Seed Company (Swaziland)
BASF (Germany)	Svaloef Weibull (Mozambique, Zimbabwe, Tanzania)
Unilever	UAC Seeds (Nigeria)* Unilever Malawi
Sakata Seed Co (Japan)	Mayford (South Africa)
Technisem (France)	Tropicasem (Benin, Mali, Cameroon, Senegal) Agritropic (Nigeria) Semivoire (Côte d'Ivoire) Nankosem (Burkina Faso)

*UAC was divested by Unilever and the seeds division is now reportedly up for sale



The Decline of the Public Sector

The public sector provides another relatively recent source of plant breeding in Africa. After independence, the colonial research structure was reorganised along national lines and considerable expenditures were made, with support from international donors, to build up national agricultural research services (NARS). During the 1960s and 1970s, several major international agricultural research centres (IARCs) were also established in Africa, and the NARS and IARCs developed close ties. However, public expenditures on agricultural R&D have dropped considerably in recent years. With the exception of

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South Africa, agricultural research expenditures in Sub-Saharan Africa as a percentage of gross domestic product dropped from 0.76% for the years 1981-1985 to 0.58% in 1991.²³ Furthermore, the share of financing for agricultural research provided by donors has increased significantly. One recent study of 13 countries in Sub-Saharan Africa found that donors provided more funding than all other sources combined in eight of the countries.²⁴

²³ J. Beynon et al, *Financing the Future: Options for Agriculture Research and Extension in Sub-Saharan Africa*, Oxford Policy Management, 1998.

²⁴ Philip Pardey and Johannes Roseboom, “Trends in Financing African Agricultural Research,” in Eds SR Tabor et al, *Financing Agricultural Research: A Sourcebook*, The Hague, Netherlands: International Service for National Agricultural Research, 1998, pp 307-321.

²⁵ Mylene Kherallah et al, “The Road Half Traveled: Agricultural Market Reform in Sub-Saharan Africa,” *Food Policy Report*, IFPRI, Washington, DC, October 2000.

²⁶ Personal communication with Dr. Terry Watson, June 2001.

It is significant that the decline in public research expenditures and the increasing importance of funds from Northern donors coincides with the development of genetically modified crops. Many donors, such as the Rockefeller Foundation and the World Bank, now target funding towards biotechnology. This means there is both growing interest in research partnerships between the private and public sectors, and pressure on the public sector to leave more agriculture R&D to the private sector while taking up a role as “market facilitator.”²⁵

The result is that there is less and less separating the public sector from the private sector in research and development. In South Africa, the Food, Biological and Chemical Technologies Institute of the Council for Scientific and Industrial Research (CSIR) has responded to budget cuts by trying to establish itself as a “world player” on the biotechnology market. It identifies research areas where it has a potential “competitive advantage”, tries to develop the research to a stage where it can get a patent, and then seeks a private company to license the research. According to the CSIR’s Terry Watson, “you want to be in a position where you can trade intellectual property.”²⁶



3. IPRS AND AFRICAN AGRICULTURE

In Africa, policy-makers are faced with two opposing models of agricultural R&D to choose to support. One is driven by TNCs in the North and relies upon private monopolies and genetically modified crops. The other is led by farmers, with support from the public sector, and is based on the collective use of knowledge and resources for sustainable agriculture. Africa's small farmers and the seed industry have completely different needs when it comes to supporting their innovation, and IPRs are only designed for one of them. If African governments adopt IPR regimes on agricultural biodiversity, then they are choosing a corporate model of plant breeding and, subsequently, a re-organisation of agriculture according to the interests of Northern seed TNCs. These TNCs also happen to be the world's largest pesticide and biotech TNCs and they have vested interests in crop uniformity and vulnerability—not the food security of Africa or the well-being of the continent's farmers.

Worlds apart: different perspectives on innovation

The notion of monopoly rights is completely alien to the traditional processes of innovation in African farming communities. Although African communities utilise a wide variety of agricultural practices, they share certain fundamental approaches. As explained by IPR expert Andrew Mushita of Zimbabwe, *“In the African context, customary law is applied. It does not recognise private proprietary rights but rather community resource rights. All resources belong to everyone and they are regulated by the community's cultural and local knowledge systems and practices. In this sense, farmers have exchanged seeds among themselves since time immemorial, passing from neighbour to neighbour, mother to daughter, mother-in-law to daughter in law, or even across villages and communities. Even labour is shared for such activities as land preparation, ploughing, planting, processing or threshing and harvesting of crops. Land ownership has always been collective with individuals having user-friendly rights to the land.”*²⁷

According to Tewolde Egziabher and Sue Edwards of the Institute for Sustainable Development in Ethiopia, it is through this *“collective generation, modification, conservation and exchange across generations and communities, that knowledge, technologies and biodiversity became owned and managed by the community, and used by anyone who wants them. Charging money for access is unknown, though reciprocation in kind is a necessary element for the perpetuation of the system.”*²⁸

One telling example of traditional practices in Africa is reported by Blessing Butaumocho of the Intermediate Technology Development Group in Zimbabwe. In his community in northern Zimbabwe,²⁹ every farmer has a duty to retain a portion of his or her harvest as seed for the next season. When necessary, seed is obtained from relatives and friends or better-off farmers, but it is given freely. The community even shares the belief that you should not thank those that gave you the seed. If you do, the seed will not germinate because you would have given thanks to a mere custodian, when the true owner of the seed is the spirit of the land. The tradition has changed slightly with the advent of the money economy and some seed exchanges involve money. But those who charge a fee for their seed only ask for compensation for their labour and time in raising the seed. For

“The type of rights Africa needs are not IPRs, monopolised through privatisation, but rights that support local communities, farmers, indigenous peoples, and their efforts over the past millennia to conserve and enhance biodiversity for the benefit of humankind.”

Prof. JA Ekpere, OAU's Scientific, Technical & Research Commission



²⁷ Personal communication, September 2001.

²⁸ Tewolde Berhan Gebre Egziabher, *The Convention on Biological Diversity: With some explanatory notes from a Third World Perspective*, Institute for Sustainable Development and Third World Network, p 10.

²⁹ Chundu, Hurungwe District, Mashonaland West Province, Zimbabwe

Butaumucho, *“The idea of royalties is alien in my community. The closest thing to a royalty is the annual offering made to the spirits of the land by every villager as a way of giving thanks.”*

The seed industry does not share the perspective of African small farmers. According to the African Seed Trade Association, *“professional plant breeding”* depends on monopoly rights, in the form of IPRs, since *“plant breeding is a costly and expensive exercise that requires an effective cost recovery mechanism.”* Yet, while plant breeding has been around for thousands of years, IPRs are a recent invention. The first IPRs on plants were implemented in the mid-1900s, when some industrialised countries began to offer limited forms of plant variety protection (PVP) to breeders of new crop varieties. PVP was constructed as a so-called *“alternative”* to patenting that would supposedly be attuned to the needs of agriculture. It guaranteed breeders a commercial monopoly on the use of their varieties while leaving loopholes, or *“privileges,”* open for farmers and other breeders (see box).

Yet even these small loopholes are not acceptable to the seed industry. Over the years it has lobbied aggressively, with success, to tighten up the loopholes in favour of corporate breeders. In every country where PVP has been adopted, the rights for the breeders are progressively strengthening while the *“privilege”* left for the farmers is weakening.

“In every country where PVP has been adopted, the rights for the breeders are progressively strengthening while the ‘privilege’ left for the farmers is weakening.”

What the seed industry really wants is full-scale patent rights over its seeds. To date, only a few countries in the world recognise patents on plant varieties, but a growing number of countries now grant patents on genes that are inserted or identified in plants. This means that the seed industry can effectively patent those plants that it genetically modifies. Recently in Canada, Monsanto successfully sued a farmer for growing plants containing a gene that Monsanto had patented. The judge ruled that, even if the gene had unintentionally entered the farmer’s crop through cross-pollination, mere use of seeds containing Monsanto’s patented genes constituted infringement of Monsanto’s patent.³⁰

At present, the seed industry is not pushing hard for patent protection in most of Africa. It is more tactical to begin with plant variety protection (PVP), since most African countries currently offer no IPRs on plant genetic resources, and then gradually push countries towards patents. According to the global seed industry association ASSINSEL, *“at the moment, developing country members of ASSINSEL consider that it would be premature to develop protection of plant varieties through utility patents in their countries.”*³¹ But the ultimate push is towards patents.

In Kenya, where PVP laws have been in place since 1977, a revised Industrial Property Act was passed in Parliament in mid-2001, with Presidential assent given soon afterwards. According to IPR expert Robert Lettington: *“It would seem likely that interpretation of [the new Industrial Property Act] will allow for the patenting, at a minimum, of plant parts, biotechnological products and a wide range of micro organisms. It would also seem likely that plants that do not fit the requirements for recognition as plant varieties and animal and human genetic material are patentable subject to the limitations of Section 26(b). This . . . may actually place very little restriction on the patenting of life forms at all.”*³²

Plant breeding throughout most of Africa is still a fluid process: circulating and expanding through the free exchange of seeds from breeder to breeder (farmer to farmer). The seed industry wants to put an end to this centuries-old process of innovation. Like a school bully, it takes from the heritage of seeds that farmer-breeders have developed, in order to produce its own commercial seeds, but then it refuses to share its contribution.



³⁰ Canadian Federal Court decision, *Monsanto Canada v. Schmeiser*, March 29, 2001: <http://decisions.fct-cf.gc.ca/fct/2001/2001fct256.html>

³¹ ASSINSEL Statement on the Development of New Plant Varieties and Protection of Intellectual Property (adopted in June 1999), http://www.amseed.com/govt_statementsDetail.asp?id=51

³² Personal communication, 3 March, 2002.

Patents and PVP

Patents and plant variety protection (PVP) are two different forms of intellectual property rights. Both patents and PVP provide exclusive monopoly rights over a creation for commercial purposes over a period of time. A patent is a right granted to an inventor to prevent all others from making, using, and/or selling the patented invention for 15-20 years. The criteria for a patent are novelty, inventiveness (non-obviousness), utility, and reproducibility. Although patents were designed for industrial application, with the advent of biotechnology, patent offices now grant patents on microorganisms and, in some countries, on all life forms.

PVP gives patent-like rights to plant breeders. What gets protected in this case is the genetic makeup of a specific plant variety. The criteria for protection are different: novelty, distinctness, uniformity, and stability (DUSN). PVP laws can provide exemptions for breeders, allowing them to use protected varieties for further breeding, and for farmers, allowing them to save seeds from their harvest. For the seed industry, PVP is regarded as the weaker sister of patenting mainly because of these exemptions.

Most of the PVP legislation that is currently in place around the world is based on the conventions developed under the Union for the Protection of New Varieties of Plants (UPOV). UPOV is a small intergovernmental organisation that administers common rules for the recognition and protection of PVP internationally. Thirty-five of the 50 UPOV members are industrialised countries, which currently operate the UPOV Convention of 1978 or 1991. Accession to the Union is now confined to the more restrictive 1991 Act. Through successive revisions of the Convention, the rights granted to breeders have become more and more similar to those granted under the patent system. While breeders get exclusive commercial control over the reproductive material of their varieties and the right to enforce licenses, farmers planting PVP-protected varieties are prohibited from saving seeds for replanting except under highly restricted conditions. Increasingly in many countries practicing PVP, the right of the breeder extends to the farmers' harvest and the direct products of that harvest.

Some of the controversial features in the revised UPOV (1991) include:

- > The breeder's monopoly rights now extend to the harvest of the farmer's crop. If a farmer sows her field to a PVP variety without paying the royalty fee, the breeder can claim ownership of the output (e.g. wheat) and the products of the output (e.g. wheat flour)
- > If a farmer or a public breeder uses a PVP variety in their breeding efforts, they have to make major changes or else the varieties they develop will be considered "essentially derived" and, therefore, will fall under the ownership of the PVP holder.
- > The farmer's "privilege" to save seeds is no longer part of the 1991 Act. UPOV member countries now have to make special provision for it.
- > PVP protected varieties can also be patented, giving the seed industry 'double protection.' The specificity for plant varieties has thus been abandoned.¹

¹ Gaia Foundation and GRAIN, "Ten reasons not to join UPOV," *Global Trade and Biodiversity in Conflict*, Issue No. 2, May 1998, <http://www.grain.org/publications/issue2-en.cfm>



This might be tolerable if the seed industry kept to itself. But the industry is trying to reorganise agricultural R&D in Africa and across the globe to suit its interests and it is putting intense pressure on African governments to implement IPR regimes. The consequences will be devastating for Africa's already vulnerable small farmers.

What's at stake for African farmers?

The vast majority of Africa's farmers subsistence farm on marginal lands. In Benin, 95 % of the agricultural economy is assured by subsistence farmers. In Morocco, smallholder farmers account for 69% of all farmers.³³ In Namibia, 90% of the population in communal farming areas is directly dependent on subsistence agriculture for a living. Yet, at the same time, small farmers produce much of the continent's major commercial crops like coffee,

³³ FAO, "A synthesis report of the Africa Region - Women, agriculture and rural development," Prepared under FAO's Programme of Assistance in Support of Rural Women in Preparation for the Fourth World Conference on Women, 1995, <http://www.fao.org/docrep/X0250E/X0250E00.htm>

cocoa, maize and cotton. In Tanzania smallholders contribute approximately 80% of the value of marketed surplus and 75% of export earnings.³⁴ These farmers rely almost entirely on themselves and their communities for their seed needs. IPRs offer them no support, but plenty to be concerned about.

..PVP and patents undermine farmers' rights

In a narrow sense they restrict the right of farmers to share, use and save seed from their harvests by extending the breeder's monopoly to the harvest of the farmer's crop. Under UPOV, the breeder has the "power not only over the right to produce or sell, but also . . . the power to specify how this production or sale should occur."³⁵ But, more broadly, PVP and patents violate the spirit of farmers' rights and set a precedent for their elimination. Farmer's rights embody the rights of farmers and farming communities to conserve, develop, use, control, and benefit from not only local biodiversity but also rural peoples' knowledge systems and technologies.³⁶ These rights, which cannot be protected by IPRs, form the basis of sustainable agriculture and recognise the importance of farmer innovation to global food security and well being.

Although some countries may attempt to include some reference to farmers' rights and sustainable agriculture within PVP legislation, IPRs are completely alien to these concepts and there is always pressure under IPR regimes to scale back the rights of farmers in favour of the rights of industry. PVP in particular reduces the inherent rights of farmers to an exemption—the farmer's "privilege" to save seed—which is extremely vulnerable to international pressure, industry tactics and arbitrary political decision-making. In countries that have adopted PVP laws, seed companies now routinely mandate the use of "grower's agreements" to prevent farmers from saving seed from their harvests or sharing it with others, and these companies police the countryside to enforce the contracts (see box below). The seed industry is also developing genetically modified crops that will not germinate in subsequent generations or will not express a particular trait (such as herbicide resistance) unless sprayed with specific chemicals that activate the right gene. Some 60 patents for these "Terminator" or "Traitor" technologies have been identified.³⁷

...PVP and patents foster dependence on foreign companies

Transnational corporations dominate applications for PVP and patents in developing countries. At present, 97% of all patents are held by nationals of industrialised countries and 90% of all technology and product patents are held by global corporations.³⁸ With their economies of scale and IPR leverage, transnational companies can rapidly take control of the seed industry once the IPR rules are set in place. This should not be confused with foreign investment and technology transfer. In Kenya, where PVP has been enforced since 1994, 90% of the commercial vegetable seeds are imported from the EU, USA, and Asia.³⁹ Similarly, over 90% of all PVP applications in Kenya are from breeders from outside the country, and even in South Africa, where the domestic seed industry is stronger, the figure is still around 60%.⁴⁰

Studies show that PVP and patents decrease germplasm and information flows and restrict technology transfer to

³⁴ FAO, "A synthesis report of the Africa Region - Women, agriculture and rural development," Prepared under FAO's Programme of Assistance in Support of Rural Women in Preparation for the Fourth World Conference on Women, 1995, <http://www.fao.org/docrep/X0250E/X0250E00.htm>

³⁵ David Godden, "Growing Plants, Evolving Rights: Plant Variety Rights in Australia," *Australian Agribusiness Review*, Vol. 6, 1998, Paper 3. <http://www.agribusiness.asn.au/agribusinessreview/1998V6/Growin gPlantsRightsIssues.htm>

³⁶ Ignatius Wijayanto (Secretariat of Network on Farmers' Rights) and Riza Tjahjadi (PAN Indonesia), "Indonesia Advances on Farmers' Rights," December 1998.

³⁷ Action Aid et al, *Syngenta: Switching off farmers rights?*, ActionAid, GeneWatch UK, Berne Declaration and the Swedish Society for Nature Conservation, October 2000. <http://www.actionaid.org>

³⁸ Human Development Report 2000, *Human Rights and Human Development*, UNDP, New York, 2000, p 84.

³⁹ Jitendra Shah, "The Seed Industry in Kenya, an Overview," presented to the Preparatory Meeting for the Establishment of an African Seed Trade Association, Lilongwe, Malawi, 8-10 April 1999.

⁴⁰ J Wynand van der Walt, "A review of the South African seed industry," prepared for the FIS/ASSINSEL 2001 World Seed Congress.

Monsanto's Roundup Ready® Technology Agreement says that:

- * The farmer cannot save seed or any other part of the crop grown from the Monsanto seed for replanting.
- * The farmer is prohibited from supplying seed to any other person.
- * The farmer must pay 120 times the technology fee plus the legal fees if she or he is caught violating the agreement.
- * The farmer must cooperate fully with Monsanto's inspections of his/her fields.¹

¹ Michael Stumo, "Down on the Farm Farmers Get the Biotech Blues," *Multinational Monitor*, Vol. 21, Nos. 1&2, January/February 2000.



fixed varieties with highly limited legal spaces for further breeding. Furthermore, they marginalise farmers from society's view of innovation while insisting that farmers pay royalties to cover the costs of R&D which they had no say in. Public research, likewise, becomes more oriented to the needs of industry, with national researchers worrying more about their accountability to terms of collaboration set by industry than their responsibilities to farmers.⁴¹

...PVP and patents allow piracy of farmer-developed crops

Africa has a quarter of the world's biodiversity. This diversity has been carefully produced, conserved, and analysed over generations by Africa's 2000 different ethnic groups. Today, this knowledge and biodiversity is worth hundreds of billions of dollars to the global seed and pharmaceutical industries, and they are eager to secure monopoly rights over them. With PVP and patents, the seed industry can take farmers varieties, tamper with them and repackage them in the North, and then force farmers to pay royalties in order to access them. According to Edward Tuetjiua Kamboua, Namibia's Deputy Director of the Registrar of Companies, Patents, Trade Marks and Designs, "By its very essence, patent rights are monopoly rights that are given to individuals and these individuals are from the developed world. . . As such our indigenous biodiversity is then surrendered by way of patent rights to people that are living in other countries."⁴²

Certain schemes have been proposed to address this unfair arrangement, but they breach the cultural practices of most farming communities. According to a global coalition of indigenous people's organisations, NGOs, and networks: "Knowledge and cultural heritage are collectively and accretionally evolved through generations. Thus, no single person can claim invention or discovery of medicinal plants, seeds or other living things. The inherent conflict between these two knowledge systems and the manner in which they are protected and used will cause further disintegration of our communal values and practices."

"One study of PVP in Latin America found that IPRs reduce information flows, germplasm flows, and ultimately competition."

...PVP and patents threaten food security and agrobiodiversity

Proponents often claim that IPRs increase food security by stimulating the development of "improved varieties." This is not the case. In African countries with PVP regimes in place, there has been more support for the European cut flower market than Africa's food security. In Kenya, only one variety out of the 136 applications filed and tested since 1997 has been on a food crop, while more than half were for roses.⁴³ In Zimbabwe, as of 1999, only 30% of all applications covered what can be classified as food crops and in South Africa, where 1,435 PVP grants were issued by the end of 1998, more than 40% were for ornamental varieties.⁴⁴

One study of PVP in Latin America found that IPRs reduce information flows, germplasm flows, and ultimately competition.⁴⁵ Another study in the UK found that PVP-supported commercial breeding for "cosmetic differences" rather than real "inventive activity."⁴⁶ The typical UPOV criteria for plant variety protection—distinctiveness, uniformity, stability, and novelty (DUSN). DUSN criteria are good for the seed/pesticide industry but extremely dangerous for African farmers whose productivity depends on seed diversity rather than uniformity. Chemicals or genetic engineering, which the vast majority of African farmers cannot afford, will be used to compensate for the crop vulnerability that can be anticipated from such DUSN-driven breeding.

⁴¹ *Nature Biotechnology*, Vol 17, October 1999, p 936.

⁴² Lewis Machipisa, "Southern Africa for renegotiation of UPOV 1991," IPS, <http://www.twinside.org.sg/title/reneg-cn.htm>

⁴³ Philippe Cullet, *Plant Variety Protection in Africa: Towards Compliance with the TRIPS Agreement*, African Centre for Technology Studies: Nairobi, 2001, p 12.

⁴⁴ J Wynand van der Walt, "A review of the South African seed industry," prepared for the FIS/ASSINSEL 2001 World Seed Congress.

⁴⁵ Jeroen van Wijk and Walter Jaffé, *Intellectual Property Rights and Agriculture in Developing Countries*, University of Amsterdam, January 1996; and Jeroen van Wijk and Walter Jaffé, *The Impact of Plant Breeders' Rights in Developing Countries: Debate and experience in Argentina, Chile, Colombia, Mexico, and Uruguay*, October 1995.

⁴⁶ Dwijen Rangnekar, "A Comment on the Proposed Protection of Plant Varieties and Farmers' Rights Bill, 1999", March, 2000, p 6.



4. THE PUSH FOR IPRS

Given the above, IPRs on agricultural biodiversity are not appropriate for Africa. Since Africa's food security depends on the innovation of its small farmers, it would make much more sense to support farmer-led breeding strategies. There are plenty of examples of how small and inexpensive programs that encourage and support farmer-led innovation have achieved great success in Africa and elsewhere (see below). So it is hard to comprehend why so many African governments already have in place or are in the midst of implementing IPR regimes for agricultural biodiversity.

“The rapid move towards IPRs on agricultural biodiversity in Africa can largely be explained by the highly-organised lobby that the multinational seed industry has organised. ”

The rapid move towards IPRs on agricultural biodiversity in Africa can largely be explained by the highly-organised lobby that the multinational seed industry has organised. This lobby, which brings together many different actors, has a clear strategy comprised of three major components: binding countries to IPRs through international trade agreements, pushing for harmonised seed policies in Africa; and creating a circle of influential national actors with an interest in IPRs.

IPRs and international trade

In the late 1980s, the seed industry began to understand how international trade agreements could be transformed into effective tools for pushing its IPR agenda. Lobbying individual countries can be time-consuming and ineffective, so the seed industry joined forces with an influential coalition of Northern TNCs to lobby aggressively for the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) under the World Trade Organisation.⁴⁷ TRIPS obliges all member countries to enforce IPR protection for agricultural biodiversity. It does not, however, specify that countries must adopt patents, only that they must implement “an effective *sui generis* system.”

Some argue that this loose terminology leaves the door open to individual countries to develop rights systems that reflect their own needs. But, if a window of opportunity for African governments to develop their own *sui generis* forms of PVP does exist within TRIPS, it is closing quickly. A strong coalition of international forces, led by the Northern seed industry, has had great success in hijacking continental and national decision-making processes in Africa to rush governments into accepting UPOV as the only possible *sui generis* option.

Before TRIPS, only two countries in Africa—South Africa and Zimbabwe—had functioning PVP systems. As shown in Table 2, this is changing fast.⁴⁸ Even though TRIPS makes no mention of UPOV, African countries have been led to believe that they must adhere to the UPOV model in order to meet their TRIPS obligations. UPOV frequently sends delegations to meet with government officials, particularly those from the ministries of industry and the offices registering plant varieties, and organises regular IPR training workshops across Africa in collaboration with the UN's World Intellectual Property Office. UPOV scored a major coup in February 1999, when it convinced the francophone African countries which form the Organisation Africaine de la Propriété Intellectuelle (OAPI) to join UPOV under the terms of its 1991 Convention.⁴⁹ The Agreement has been ratified by two-thirds of the membership for it to come into force, and so far 11 out of 16 (all but Benin, Central African Republic, Congo, Guinea Bissau and Niger) have ratified it, making implementation a formality.⁵⁰



⁴⁷ TRIPS entered into force on 1 January, 1995.

⁴⁸ Kenya had IPR legislation on the books, but it didn't have an office to enforce the legislation until 1994.

⁴⁹ OAPI member states are Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Congo, Cote D'Ivoire, Gabon, Guinea-Bissau, Guinea Equatorial, Guinea, Mali, Mauritania, Niger, Senegal, and Togo.

⁵⁰ OAPI web site: http://www.oapi.cm/index_fr.html

Table 2. African countries and UPOV

In the process of joining	In discussion with UPOV	Members of UPOV
Algeria, Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Congo, Cote D'Ivoire, Egypt, Gabon, Guinea, Guinea Bissau, Guinea-Equatorial, Mali, Mauritania, Morocco, Niger, Senegal, Togo, Tunisia, Zimbabwe	Burundi, Djibouti, Ghana, Madagascar, Malawi, Tanzania, Zambia	Kenya, South Africa

While UPOV sells itself as *the sui generis* option, the seed industry and Northern governments are already pushing African governments to go beyond their TRIPS obligations, by adding “TRIPS-plus” provisions to bilateral agreements. Trade benefits from the US’s African Growth and Opportunity Act, are gauged on the extent to which they go beyond TRIPS. Likewise, the EU’s Cotonou agreement with the African, Caribbean, and Pacific (ACP) countries obliges these ACP countries to patent biotech inventions.⁵¹

“What we have right now is our seed companies going to battle against countries, one on one, to try to get policy changes made. It can’t work that way; it’s too difficult.”

Harmonisation of African seed markets

Harmonisation is another clever trick that the transnational seed industry uses to avoid the burden of lobbying individual countries for the terms that it desires. The seed industry is working with a coalition of influential actors, including the World Bank, the US government and the United Nations’ Food and Agriculture Organisation, on a plan to convert the continent into one big seed market—with harmonised seed policies, laws and regulations for all countries, and virtually unrestricted flow of seeds across borders.

The plans were put in motion in 1997 when the World Bank established the Sub-Saharan Africa Seed Initiative (SSASI), with the objective of supporting the private seed industry. The Bank argued that, “Taken together, Sub-Saharan Africa, with more than 600 million [people], offers a large potential market, but individual national markets are too small to support efficient, competitive seed enterprises.”⁵² Harmonisation is an easy way of imposing the policies the industry wants upon governments. In the words of one US official: “What we have right now are our seed companies going to battle against countries, one on one, to try to get policy changes made. It can’t work that way; it’s too difficult. Companies cannot go straight into countries and convince them to change things. However, if done through regional harmonisation, they find out very quickly that the approach really does work.”⁵³

SSASI’s guidelines make compliance with the seed reforms part of any negotiations with African governments for the preparation of programme or project loans in the agricultural arena.⁵⁴ The policies that the World Bank pushes on African governments are determined through consultations with the private sector. Here, the African Seed Trade Association (AFSTA) plays a crucial role. It was established in 1999 through a meeting convened by the International Seed Trade Federation, the American Seed Trade Association and the US Department of Agriculture.⁵⁵ One of the AFSTA’s priorities is to develop and harmonise IPR regimes for agricultural biodiversity throughout Africa.

⁵¹ GRAIN in cooperation with SANFEC, “TRIPS-plus’ through the back door: How bilateral treaties impose much stronger rules for IPRs on life than the WTO,” July 2001, <http://www.grain.org/publications/trips-plus-en.cfm>

⁵² SSASI Team, World Bank, “Initiatives for Sustainable Seed Systems in Africa,” <http://www.fao.org/ag/AGP/AGPS/Abidjan/Paper12.htm>

⁵³ Joe Cortes, “Improving the regulatory environment for agriculture in the developing world,” *Association for International Agriculture and Rural Development, 35th Annual Meeting*, Washington DC, June 6-9, 1999, <http://www.siu.edu/~aiard/Proceedings99.html>

⁵⁴ SSASI Team, World Bank, *op cit.*

⁵⁵ Elizabeth Mayhew, USDA, “Trade-Enhancing Technical Assistance for Developing Countries: USDA/Foreign Agricultural Service’s Private Sector Partnerships,” *Association for International Agriculture and Rural Development, 35th Annual Meeting*, Washington DC, June 6-9, 1999, <http://www.siu.edu/~aiard/Proceedings99.html>



IPRs are an integral part of the World Bank's SSASI programme. The Bank uses its weight to influence governments into enacting "legislation allowing breeders to register ownership of new cultivars only (not traditional cultivars or land races), consistent with UPOV 1978 or 1991," and to work with "international organisations to establish laws and regulations that allow . . . patenting of genes" for transgenic plants.⁵⁶ The push for harmonisation is a means to gradually bring all African countries under a common IPR regime that begins with UPOV-style PVP laws and eventually imposes full-scale patents on living organisms. The strategy is laid out by the World Bank in its seed reform guidelines:

"The push for harmonisation is a means to gradually bring all African countries under a common IPR regime that begins with UPOV-style PVP laws and eventually imposes full-scale patents on living organisms."

"Governments may not want to accept some or all proposed reforms. Trying to promote seed reform through heavy external pressure has often been counter-productive. Politicians and populations are sensitive to anything that they see as threatening to food security or major export crops . . . In some cases, it might be possible to make strategic compromises . . . Further dialogue can chip away at remaining barriers, and this dialogue can often be joined by seed companies that are able to enter on the strength of partial reforms . . . Over time, the Bank can also use or create opportunities to push hard for seed reform."⁵⁷

Soft supporters of IPRs

It is unsurprising to find the multinational seed industry, the World Bank and the US government behind the push for IPRs on agricultural biodiversity. But it is unfortunate to see institutions mandated to help African farmers heading down the IPR path. Many public sector institutions are resigned to the emergence of IPRs. Citing decreased funding, they welcome a larger role for the private sector in African agricultural research, all the while insisting that the public sector serve the small farmers that the private sector will inevitably neglect. If this means conceding to American-style IPR regimes, so be it. According to Gordon Conway, President of the Rockefeller Foundation, which is one of the most influential actors in agricultural research in Africa:

"We are in favour of the old Plant Variety Protection System as opposed to patents. This means that plant breeders could market their seed, but another plant breeder could work with it and then market a new variety himself. But I think we have to be realistic, it is very difficult to go back to that old system. What we are interested in is a step forward towards public-private partnerships to make advanced techniques available to our target group."⁵⁸

The International Agricultural Research Centres (IARCs) have proven all too willing to concede to industry's IPR agenda in hopes of accessing new technologies for their research. The Centre for Research on Wheat and Maize (CIMMYT) was the first to embrace IPRs. After a dialogue with the private sector, CIMMYT announced a new IPR policy in April 2000, whereby it will selectively pursue its own IPRs in order to "defend" its research or to facilitate partnerships with industry.⁵⁹ Other research centres soon followed. In February 2001, the International Crops Research Institute for the Semi-Arid Tropics established a similar IPR policy based on defensive patenting.⁶⁰ The policy developed by the International Livestock Research Institute (ILRI) in Kenya, which actively works in partnership with the private sector on transgenic technologies, states:

"ILRI recognises that IP protection on its products and technologies may be necessary: to ensure continued availability of germplasm, inventions publications and databases to ILRI clients and prevent them from being misappropriated by others for profit making; to ensure the delivery of improved products and technologies in developing countries; to negotiate access to other proprietary rights and technologies required for product development."



⁵⁶ SSASI Team, World Bank, "Initiatives for Sustainable Seed Systems in Africa," <http://www.fao.org/ag/AGP/AGPS/Abidjan/Paper12.htm>

⁵⁷ *Ibid.*

⁵⁸ V Lehmann, "Biotechnology in the Rockefeller Foundation's new course of action." *Biotechnology and Development Monitor*, 2001, No.44/45, pp 15-19.

⁵⁹ *Nature*, Vol. 404, p 594, April 6th 2000; and the web site of the Organisational Change Programme: <http://www.orgchange.org/cimmyt.htm>.

⁶⁰ ICRISAT, "Policy of the ICRISAT on Intellectual Property Rights and Code of Conduct for Interaction with the Private Sector," Approved by the Governing Board of ICRISAT at Bulawayo on February 21, 2001.

At around the same time as the IARCs took this plunge into IPRs, the International Centre for Insect Physiology and Ecology (ICIPE) in Kenya established its own IP policy, with a similar defensive intent.⁶¹ The policy is now being put to its first test with the signing of a contract with the Diversa Corporation of the US, the Kenya Wildlife Service, and the Department of Biochemistry at the University of Ghana in October 2001. The contract gives Diversa the “rights to discover genes and commercialise products from small environmental samples” collected in biodiversity “hot spots” in Kenya and Ghana, while ICIPE, which will collect the samples in Kenya, gets training for its scientists and a portion of any future royalties stemming from the research.⁶²

The Nairobi-based African Centre for Technology Studies (ACTS) has also begun to advocate the use of IPRs, in the hope that it will allow Africa to compete internationally in biotechnology. Its Executive Director John Mugabe maintains: “Africa is already in the biotechnology revolution. We should not be debating whether or not the continent should go for the technology but what specific policies and institutions are required to enable Africans to maximise benefits and minimise risks associated with genetic engineering.”⁶³ For Mugabe, this means implementing and enforcing IPRs on agricultural biodiversity, since none of the seed companies that control biotechnology would “put their products into a country with weak intellectual property protection.”⁶⁴

The Rockefeller Foundation takes a slightly different position. It admits that IPR regimes in the North have “inevitably reduced the flow of germplasm from those regions to Africa,” and argues that “a new mechanism is needed, such as universities retaining the right to grant charitable licences, and then pooling such licences into an IPR portfolio designed to facilitate the use of research results to help food-insecure subsistence farmers in places like Africa.”⁶⁵ In this vision, Africa is less of a player in the biotechnology revolution than a charity dependent on the goodwill of corporations to provide it with access to plant varieties that its own farmers have made important contributions towards.

It could be argued that the public research centres have adopted IPR policies that try as much as possible to keep research in the public domain and give farmers access to new technologies. Generally, the IARCs claim that they will only take out IPRs or enter into research alliances involving IPRs when these are necessary to give developing countries access to important new technologies. But this argument loses sight of the bigger picture. The IARCs and their national counterparts hold tremendous influence over agricultural policy in Africa and by accepting IPRs on biodiversity, they legitimise them. As the World Bank points out, “politicians can be loath to change seed regulations without support from at least some national experts, including crop scientists and other agricultural experts.”⁶⁶ Rather than gradually caving into industry’s IPR demands, it would be more appropriate for these institutions to recognise their critical position and join others taking a stand against the privatisation of agricultural biodiversity and public research.

“The IARCs and their national counterparts hold tremendous influence over agricultural policy in Africa and by accepting IPRs on biodiversity, they legitimise them.”

⁶¹ The International Centre for Insect Physiology and Ecology Intellectual Property Policy, 2000.

⁶² Personal communication with Robert Lettington, ICIPE, November 2001.

⁶³ ACTS website, <http://www.acts.or.ke/Biotech%20-%20Press%20release.htm>

⁶⁴ Personal communication with John Mugabe.

⁶⁵ Joseph DeVries and Gary Toeniessen, *Securing the Harvest: Biotechnology, Breeding and Seed Systems for African Crops*, CABI Publishing: UK, 2001, p21.⁶⁶ SSASI Team, World Bank, “Initiatives for Sustainable Seed Systems in Africa,” <http://www.fao.org/ag/AGP/AGPS/Abidjan/Paper12.htm>

⁶⁶ SSASI Team, World Bank, “Initiatives for Sustainable Seed Systems in Africa,” <http://www.fao.org/ag/AGP/AGPS/Abidjan/Paper12.htm>



5. CAN AFRICA GO ITS OWN WAY?

The road less travelled

The pressure on African governments to adopt IPR regimes appears to be overwhelming. The proponents for IPRs are highly organised and have access to substantial resources. Even organisations like the IARCs that should be helping governments make balanced decisions have conceded. But there is still space for African countries to move in an entirely different direction if they have the resolve. Many African countries are now considering their options. The pressure to adopt UPOV is strong, but is counterbalanced by increasing domestic opposition and other international instruments, such as the

“African countries have expressed unified opposition to monopoly rights over living organisms and are starting to develop truly alternative *sui generis* systems.”

Convention on Biological Diversity (CBD, see annex) and the new International Treaty on Plant Genetic Resources. These other international agreements place more emphasis on community rights. At the continental level, African countries have expressed unified opposition to monopoly rights over living organisms and are starting to develop truly alternative *sui generis* systems.

In 1998, the Council of Ministers of the Organisation for African Unity (OAU) adopted a “Model Law for the Protection of the Rights of Local Communities, Farmers, Breeders and Regulation of Access to Biological Resources.” This aims to help African countries fulfill their obligations to TRIPS and to the CBD, while protecting the collective social process of knowledge and technology generation. The model law is a framework for Member States “to craft out specific national legislation consistent with their political orientation, national objective and level of socio-economic development.”⁶⁷

Based on a recommendation from OAU’s Council of Ministers, Kenya’s communication to the WTO on behalf of the Africa Group in July 1999 requested that TRIPS be revised to prohibit the patenting of all life forms and to allow any national *sui generis* law to protect the rights of farmers, indigenous and local communities. The same request was put forward again at the WTO ministerial meeting in Doha in late 2001, and this time the Africa Group was joined by the ACP Group, which put forward a similar proposal against the patenting of life forms.⁶⁸ The continental challenge to UPOV and TRIPS is now being taken up at the national and regional levels.

Not long ago it appeared that most members of the Southern African Development Community (SADC) would follow South Africa into UPOV.⁶⁹ In 1991, with strong input from UPOV, Zambia produced a first draft Plant Breeders Rights Act, based on UPOV 78. But the draft ran into strong public criticism for its bias towards the formal seed sector, which had purportedly “failed to supply seed adequately to remote parts of the country.”⁷⁰ Zimbabwe missed the deadline to join UPOV 78, but has been granted a grace period of ten years. This move towards UPOV is now under scrutiny from civil society organisations who have launched a national consultation on the issue. Namibia’s official policy is to reject patents on living materials and it has established a Biodiversity Task Force to develop legislation to protect biodiversity and traditional knowledge.⁷¹ Even South Africa, which is one of the earliest members of UPOV, has suggested that it may amend its PBR Act with a new section on farmer’s rights. Malawi on the other hand appears to be committed to the World Bank seed reform process. How the split on seed policy between and within SADC countries will play out has yet to be determined.

⁶⁷ JA Ekpere, *The OAU’s Model Law: The Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources, An Explanatory Booklet*, Organisation of African Unity, Scientific, Technical and Research Commission, Lagos, Nigeria, p 4.

⁶⁸ Third World Network, “Africa Group Proposals on TRIPS for WTO Ministerial,” <http://www.twinside.org.sg/title/trips2.htm>; ACP Declaration on the Fourth Ministerial, Brussels, 5 to 6 November 2001, Communication from Kenya, http://www-svca.wto-ministerial.org/english/thewto_e/minist_e/min01_e/proposals_e/wt_430.pdf

⁶⁹ SADC comprises Angola, Botswana, the Democratic Republic of Congo (DRC), Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

⁷⁰ Edward Zulu et al, “Country Presentation: Zambia,” in the Report on the Regional Workshop in Southern Africa on the Implementation of Article 27.3(b) of the TRIPS Agreement, Harare, Zimbabwe, 22-25 March 1999.

⁷¹ Rachel Wynberg, “Privatising the Means for Survival: the commercialisation of Africa’s biodiversity,” Gaia/GRAIN, *Global Trade and Biodiversity in Conflict*, No. 5, May 2000.



Uncertainty also reigns in East and Central Africa. In Uganda, the National Agricultural Research Organisation (NARO) and National Council for Science and Technology prepared a draft law using the OAU model law as *“the major working document.”* According to NARO’s John Mulumba Wasswa, the draft does incorporate some of the elements of UPOV 78, but does not abide by UPOV’s DUSN criteria. It is hard to predict how the legislation will end up, as Uganda is part of a major pilot project to harmonise seed regulations, and is under considerable pressure to advance World Bank seed sector reforms. Kenya is also part of this project, which may partially explain the immense contradiction in its IPR policy. At the international level it has strongly supported the OAU model law and opposed patents on life, but domestically it supports biotechnology. On 12 June 2001, Parliament unanimously passed the Industrial Property Bill, which gives companies the right to enforce patents over any genetically modified crop introduced in Kenya.⁷² In francophone Africa, UPOV’s coup in convincing the OAPI governments wholesale to join UPOV demonstrates the vulnerability that many African governments feel when it comes to adopting or rejecting IPR regimes. Despite considerable protest from the OAU and other African countries, enough OAPI countries have now ratified the agreement to make it binding.

There are a number of officials within African bureaucracies working to protect African farmers from the IPR onslaught and to develop and enforce community rights. But the pressure upon them is intense and many governments are collapsing under the weight. Scientists of the NARS and the IARCs don’t seem to comprehend the implications of their actions in support of IPR regimes, and many are willing to accept IPRs if it gives them the possibility to access the North’s biotechnology, even if it’s just for research. It’s apparent that in Africa, as in the rest of the world, any effective opposition to IPRs will emerge from civil society. But, aside from a few notable exceptions, awareness of how IPRs are moving through Africa among civil society is minimal, especially among small farmers—the people that will be most affected.

The struggle for community rights

On the international stage, African countries have led the opposition to the patenting of life forms, in the face of growing pressure from the seed industry and its allies. Support at home from civil society has been critical to make such a bold move possible. At the WTO, the Africa Group’s call for a prohibition on patents on living organisms is supported by the African Trade Network, which brings together over 20 NGOs and civil society groups from 10 African countries. Various NGOs have also worked closely with government officials at meetings of the CBD and the International Treaty on Plant Genetic Resources. Indeed, without the continued efforts of civil society, the OAU’s Model Law stands little chance of success.

One danger confronting civil society in many African countries, however, is the ever-present possibility of being marginalised from the decision-making process. David Fig of Biowatch South Africa recalls how his government adopted UPOV 91 without any public debate. In other countries, there is a real concern that promised national consultations will be limited to a small section of *“stakeholders”* that support the government’s modernisation schemes, especially with the US government, the World Bank, and the other forces using their collective muscle to push IPRs. This makes organisation at the local level all the more important. NGOs have to work to bring small farmers and local communities into the

“One danger confronting civil society in many African countries is the ever-present possibility of being marginalised from the decision-making process”



⁷² Dr. Otieno-Odek, “Towards TRIPS compliance: Kenya’s experience and legislative reforms,” Paper presented at the *Eastern and Southern Africa Multi-stakeholder Dialogue On Trade, Intellectual Property Rights and Biological Resources in Eastern and Southern Africa*, Nairobi, Kenya 30-31 July 2001: <http://www.ictsd.org/dlogue/2001-07-30/Otieno%200dek.pdf>

policy-making process. The OAU Model Law provides a basis for national consultation, but local communities themselves must shape and define the rights that govern their resources and knowledge. This will not be easy. In many countries, rural communities have very little influence over, or access to, national policy-making processes. NGOs working at the grassroots level will have to find creative ways to help local communities realise what is at stake and make their voices heard.

Small farmers in Africa already understand the importance of crop diversity and the need for varieties adapted to local conditions. A survey in Zimbabwe found that 85% of farmers questioned wanted to maintain or increase the number of crops and varieties they grow, and in Malawi, another survey found that farmers ranked crop diversification and access to seed as the top two out of 15 indicators of sustainable farming.⁷³ In Kenya, farmers of Tharaka, Eastern Kenya established the Gakia Seed Conservation Group, with support from ITDG. Since its formation in 1997, the group has identified and collected 50 varieties of sorghum and 29 of millet that have nearly disappeared from this dryland area. One farmer, Amina Njeru, grows eight varieties of millet, seven varieties of cowpea, four varieties of green gram in her field. The group's success caused Kenya's Ambassador to Japan to remark: "I look with nostalgia to the past when I recall how I used to see granaries of my grandparents filled to capacity with all manner of healthy foods harvested from the same farm that today produces sickly harvest of beans and maize."⁷⁴

"Experience from around the world demonstrates that farmers will take an active role in IPR discussions and decision-making processes if they have access to minimal amounts of support."

In Ethiopia, the Seeds of Survival/Ethiopia Program was established in 1988 to restore, conserve, multiply and enhance the performance of traditional farmers' seeds in the aftermath of the drought period of the early 1980s and the imposition of inappropriate high-yielding varieties. The program takes a participatory, farmer-based approach to seed conservation, enhancement and utilisation. Local farmers, scientists and extension agents work together on small-scale peasant farms, utilising traditional practices of selection, production, and storage. So far, the project has been a great success. The yields of local cultivars of durum wheat, grown without the use of commercial fertilisers or other external inputs, improved by up to 20-25%, outyielding their high input counterparts by an average of 10-15%.⁷⁵

Initiatives like these constitute the foundations of effective opposition to IPRs. They not only demonstrate the value of farmer-led innovation strategies, but they generate awareness and organise rural communities and public scientists around IPR-related questions. Experience from around the world demonstrates that farmers will take an active role in IPR discussions and decision-making processes if they have access to minimal amounts of support. The farmers of the Gakia Conservation Group, for instance, travelled to the Fifth Conference of the Parties of the CBD in Nairobi to call on governments to commit to the principles of the CBD and oppose patents on life.

Farmers are generally shut out of the discussion. In this sense, civil society organisations have a key role to play in, on the one hand, facilitating the participation of farmers within national and international IPR debates and, on the other hand, popularising information about IPRs and the larger context within which they are emerging. In other parts of the world, notably Asia and Latin America, farmers are taking a more active role in IPR discussions. Via Campesina, an international movement of peasants, small farmers, indigenous peoples, and rural labourers, has voiced a clear call for "no patents on life." With IPRs rapidly emerging in Africa, the voices of Africa's farmers are urgently needed.

⁷³ Virginia Mathabire and Chris Kakunta, "What price agrobiodiversity?" *New Agriculturalist*: <http://www.new-agri.co.uk/01-6/develop/dev05.html>

⁷⁴ Wandera Ojanji, "Farmer's Seed Bank Project Enhances Biodiversity," *ECO*, Vol. 1, Issue 2, May 16, 2000: <http://www.ukabc.org/eco2.pdf>

⁷⁵ Melaku Worede, "Links Between Indigenous Knowledge and Modern Technology in Africa: Seeds of Hope," *Scandinavian Seminar College: African Perspectives of Policies and Practices Supporting Sustainable Development*: <http://www.cdr.dk/sscafrica/wor-pre3.htm>



ANNEX

Note on the Convention on Biological Diversity (CBD)

The CBD came into force in 1993. It binds its 170 national signatories to a number of basic principles regarding how, by whom, and for whose benefit biodiversity should be conserved. It affirms:

- > The importance of the contribution of the peoples of the developing countries to the world's biodiversity.
- > That biodiversity is not a "gift of nature" but the result of community activities where women in particular play a vital role.
- > The fact that biological diversity is intrinsically co-dependant with diverse cultures, knowledge systems, and lifestyles which generate and maintain it.
- > That in situ (local) conservation of biological resources is more sustainable than ex situ (gene bank) conservation.
- > That rights for local communities, as well as states, are necessary to protect biological resources and to encourage conservation.

That programmes and policies must be implemented to promote conservation and sustainable use, as well as the sharing of benefits arising from the use of biological resources. 



