



Trading in KNOWLEDGE

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TRIPS, Trade and Sustainability

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Chapter 10

The Revised Bangui Agreement and Plant Variety Protection in OAPI Countries

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INTRODUCTION

Since the dawn of history, local communities have been using biological resources to cater for such daily needs as food, traditional medicine, housing or cosmetics. In Africa, these biological resources have been managed by village communities for many centuries. Thus seeds and medicinal plants are exchanged among peasants and traditional healers within and between communities, the main concern being to meet the daily requirements for survival. In this situation, the food supply of the greater part of the population is produced by traditional, family-based farming methods, despite many difficulties. Seeds, for instance, are passed on from generation to generation and are exchanged among peasants, relatives or friends, or sold in local markets.

But with modern agriculture and colonization, African agricultural products have been ushered into international trade. The Convention on Biological Diversity (CBD) recognizes the sovereign right of states over biological resources. In its Article 8(j), moreover, the convention stipulates that each contracting party shall:

subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.

TRIPS obliges all member countries to recognize intellectual property rights (IPRs) over plant varieties. Since IPRs do not cover farmers' rights, however, even though these are recognized by the Food and Agriculture Organization (FAO), nor the local community rights highlighted in Article 8(j) of the CBD, a conflict arises between biodiversity and the world trade rules. Annex X on plant variety protection added to the Revised Bangui Agreement Establishing an African Intellectual Property Organization (OAPI) is merely one illustration of this conflict.

THE MAIN CHALLENGE OF AGRO-BIODIVERSITY IN AFRICA: FOOD SECURITY

Like the other inhabited continents of the world, Africa contributed to the birth of agriculture some 12,000 years ago. For millennia, African peasants created food crops by domesticating the wild varieties of plants offered by nature. Examples of such food plants include: yam, millet, fonio, sorghum and oil palm in West Africa; coffee and yam in Central Africa; coffee, teff or sorghum in East Africa; and date palm, wheat and artichokes in North Africa. As a result of this collective approach to farming, genetic resources are considered to be shared and to belong to everyone. Right across the continent, since food is based on traditional family-based agriculture, cultivated plants are exchanged among relatives and friends, or sold on local markets, far removed from any notion of monopoly such as underlies intellectual property rights or breeders' rights. Nowadays in Africa, subsistence farming accounts for the bulk of agricultural activity, with food crops that are specific to each region and each country, so that a large proportion of small farmers grows more food crops than non-food cash crops.

Despite the natural constraints arising from drought and bouts of famine that occur in some countries of the subregion, local communities use their traditional knowledge to practice subsistence agriculture. Seeds for food crops are therefore managed by local communities. In several countries of the subregion, depending on the ethnic groups and local socio-cultural customs, seed selection is the responsibility of the head of the family and is sometimes related to socio-cultural or religious rituals. African farmers therefore act as breeders and their main objective is to ensure the food security of their families. In other words, the breeding of traditional varieties is conducted without any idea of material gain.

In June 1999, in an official memorandum addressed to the governments of French-speaking Africa, the International Union for the Protection of New Varieties of Plants (UPOV) drew attention to the main advantages of introducing legislation on the protection of plant varieties in Africa. UPOV maintained that the protection of plant varieties enhanced the well-being of the population by contributing above all to food security (by increasing the quantity, quality and diversity of food products). And yet there is no provision in the UPOV Convention to directly link plant breeding to food security. The situation in Africa is that food security is mentioned only in the preambles of systems

governing breeders' rights. Moreover, the only criteria applied to the protection of breeders' rights are novelty, distinctness, uniformity and the stability of a variety. The system does not even require that varieties should be 'improved'. Hence even 'discoveries' may be protected, even though no effort of breeding has been made.

A 1999 report by Genetic Resources Action International based on research in three African countries with breeders' rights systems clearly showed that they are in no way linked to 'food security' (Genetic Resources Action International, 1999). In Kenya, for example, not a single application filed and verified since the start-up of its system of breeders' rights until May 1999 had concerned a crop of any significance for the country's food security: 135 breeders' rights applications had been filed for industrial crops and only one for a food crop, a variety of green bean cultivated for the European market. In Zimbabwe, from 1973, when the law on plant breeders' rights was enacted, until 1999, 534 applications were filed for industrial crops, and 208 for food crops, while in South Africa, out of 1435 breeders' certificates granted from 1977 to the end of 1998, as many as half concerned industrial crops. It would appear, therefore, that the system of protecting agro-biodiversity with breeders' rights encourages breeders to concentrate their work on industrial crops rather than food crops.

THE REVISED BANGUI AGREEMENT AND TRIPS

With the industrial society and its underlying profit motivation, mechanisms have been developed to protect all types of intellectual creations. Thus if individuals or companies can prove that they have created or invented something new, they are given the right to protect it, subject to the currently established procedures. In accordance with this system, patents allow inventors the exclusive right to prevent any other persons or companies from exploiting their creations or inventions. The protection period, which generally lasts 20 years, is intended to be sufficient to enable inventors to recover their costs before their invention enters the public domain. This is the case for a number of products and production techniques.

The Bangui Agreement, which is legislation common to all the OAPI member states, was signed in 1977 to protect intellectual property in 16 countries of West and Central Africa (Table 10.1).

In order to meet WTO requirements, UPOV and the World Intellectual Property Organization (WIPO) convinced OAPI to revise its basic text by adopting rules similar to those of UPOV. These rules are contained in Annex X of the Revised Agreement. In spite of this, two-thirds of OAPI's membership are least developed countries (LDCs), who according to TRIPS do not have to provide plant variety protection until 2006. The problem is that the UPOV Convention serves the interests only of multinationals and those involved in industrial agriculture, whereas in Africa the food consumed by most people is produced by family-based traditional agriculture.

The Revised Agreement was signed in February 1999 by 15 French-speaking African countries (at the time, Equatorial Guinea was not yet a member),

Table 10.1 *Date of ratification or accession of OAPI member countries to international instruments concerning biological diversity and trade*

Country	CBD ratification date	WTO entry date	Revised Bangui Agreement ratification date
Benin	30 June 1994	22 February 1996	–
Burkina Faso	2 September 1993	3 June 1995	8 June 2001
Cameroon	19 October 1994	13 December 1995	9 July 1999
Central African Republic	15 March 1995	31 May 1995	–
Congo	1 August 1996	–	–
Côte d'Ivoire	29 November 1994	–	24 May 2000
Gabon	–	1 January 1995	27 December 1999
Guinea Bissau	27 October 1995	31 May 1995	–
Guinea	7 May 1993	25 October 1995	13 July 2001
Equatorial Guinea	–	–	23 November 2000
Mali	29 March 1995	31 May 1995	19 June 2000
Mauritania	16 August 1996	31 May 1995	5 July 2001
Niger	25 July 1995	13 December 1996	–
Senegal	17 October 1994	1 January 1995	9 March 2000
Chad	7 June 1994	19 October 1996	24 November 2000
Togo	4 October 1995	31 May 1995	29 November 2001

establishing an IPR system for seeds and plant varieties. The problem is that the agreement was prepared between 1995 and 1999 without consulting the peasants and local communities or even the general populations of the OAPI member countries. The agreement entered into force on 28 February 2002. Annex X concerning plant variety protection, however, did not enter into force, officially because certain measures needed to be taken for its application.

Yet in 1999, the African Group in the WTO had made appropriate proposals to the WTO secretariat. One of the proposals was headed: 'Deadline for the implementation of the provisions of Article 27.3 (b)...'. After recalling that issues concerning that article were being debated in related forums, such as the FAO or the Convention on Biological Diversity (CBD), the proposal went on: 'the members of the African group consider it would be appropriate to postpone the implementation deadline until Article 27.3 (b) has been examined in detail. The time allowed for the implementation of the provisions should be the same as that provided for paragraphs 1 and 2 of Article 65, namely five years starting from the date when the examination will be completed. This delay is to allow the developing countries to set up the infrastructure required by implementation.' It seems clear, therefore, that the OAPI member countries should not have rushed to revise the Bangui Agreement. The haste with which WIPO and UPOV drove the OAPI to implement the TRIPS Agreement appears all the more dubious, now that the WTO members have delayed the provisions of the agreement on pharmaceutical products for the least developed countries until 2016.

As in the case of UPOV, the new Bangui Agreement grants exclusive commercial rights (monopolies) to breeders of plant varieties that are new,

distinct, uniform and stable. Although constituting the very basis of new varieties, traditional varieties and the related knowledge are ignored. This means that farmers will have to pay royalties on new seeds and will be entitled to keep part of their crop for future sowing only subject to certain conditions. Thus the new agreement restricts the rights of farmers to stock seed and introduces a system whereby life forms are privatized.

While the Revised Bangui Agreement protects new or improved plant varieties, it offers no protection for traditional varieties developed by local communities because of the fact that traditional knowledge is not new, and because the holders of such knowledge are neither individuals nor commercial entities. Yet it is the traditional varieties that provide the basis for improving varieties, whether by conventional or biotechnological means. So the rights of local communities are not protected by this supranational agreement. The OAPI, in conjunction with UPOV and WIPO, protects the interests of breeders and multinationals, but not those of peasants, traditional healers or local communities.

The application of the Bangui Agreement will have serious consequences for present and future generations in the OAPI member countries. One of these is that farmers will become completely dependent on multinationals and foreign scientific research institutes. This is because peasants and local communities are forbidden to reproduce IPR-protected seeds without a licence. This could have dangerous consequences for food security in Africa. Another consequence will be the loss of crop diversity, which will leave both producers and consumers extremely vulnerable. This is because the Revised Bangui Agreement protects only uniform varieties. Another issue of concern is the plunder of African biological resources. And with regard to health, one can expect a further increase in the prices of basic medicines which are already out of reach of our populations. This is because the agreement prohibits the parallel importation of cheaper generic medicines from countries outside the group of OAPI member countries.

Under Annex X of the Revised Bangui Agreement, breeders may use protected varieties to develop new varieties, but they may not work these new varieties if they are similar to the initial varieties. Farmers are allowed to stock, use and exchange (though never to sell) the seeds they have gathered of protected varieties subject to the conditions that: (i) they own their own land; (ii) no fruit varieties are involved; (iii) no forestry varieties are involved; (iv) no ornamental plants are involved; and (v) they have paid royalties on the initial variety.

Since 1992, the African countries have not taken any national measures to ensure 'the fair and equitable sharing of the benefits arising from the utilization of biological resources'. The conclusion must be that the gathering of biological resources and bioprospecting in Africa by multinationals and foreign research institutes amounts to 'biopiracy'.

SOME EXAMPLES OF PATENTS FILED ON WEST AND CENTRAL AFRICAN PLANTS

The Revised Bangui Agreement with its Annex X on plant variety protection amounts to an official licence to plunder African biological resources, to the

detriment of farmers and local communities. There are many examples of African plants on which patents have been filed and that yield enormous financial gains but without provision for the sharing of benefits. Worse still, once the patent has been filed, parallel supply circuits are usually established, with the help of genetic engineering. Since transgenic plants are also plant varieties, they are protected by the Revised Bangui Agreement, whereas the wild varieties from which they were derived are not.

The case of West African thaumatin

Thaumatococcus daniellii is a natural sweetener extracted from the fruit of *Thaumatococcus daniellii*, which grows in the forests of West Africa. The fruit has been used for centuries as a sweetener by a number of local communities. The protein, which is 2000 times sweeter than ordinary sugar, was discovered by researchers at Ife University in Nigeria. For years, thaumatin has been marketed as a low-calorie sweetener and has been used by the food and confectionery industries in several developed countries. Since the plant yields fruit only in its original surroundings, for several years the British sugar producer, Tate and Lyle, imported the fruits from Ghana, Côte d'Ivoire, Liberia and Malaysia, and marketed the product under the name of Taline.

In the US alone, the low-calorie sweetener market is estimated to amount to US\$900 million a year. As it is expensive to extract the substance, genetic engineering has been resorted to by several companies. Beatrice Foods obtained a patent in the US for the process of cloning the gene in yeast. According to estimates, the company may obtain royalties worth US\$25 million. Researchers of the Lucky Biotech Corporation and the University of California have filed an American patent on all transgenic fruits, seeds and vegetables containing the gene that produces thaumatin. Thanks to this, the companies will no longer need the fruits from West Africa.

The case of brazzeine in Central Africa

Brazzeine, a protein that is 500 times sweeter than sugar, is derived from a berry that grows in Gabon and Central Africa. Unlike other sweeteners, brazzeine is a natural substance that does not lose its sweetness when heated. This makes it a favourite with the food industry. This plant drew the attention of an American researcher, who observed animals and people consuming the fruit in their natural habitat. In the US, four patents were filed (Table 10.2), and one patent in Europe (No 684 995) concerning the extraction of a protein from the *Pentadiplandra brazzeana*, the establishment of the genetic sequence coding for this protein and transgenic organisms. It later became possible to produce brazzeine in the laboratory with transgenic plants, making it unnecessary to purchase plants from Africa.

Since the world market for sweeteners is estimated to be worth US\$100 billion per year, it is easy to imagine how important this plant is. According to the University of Wisconsin, brazzeine was 'invented by one of its researchers' and there is no plan to share benefits with the peoples of Central Africa who discovered and looked after the plant for centuries. 'Nektar Worldwide and

Table 10.2 Some patents on West and Central African biodiversity

Varieties	Patent Number	Patent Owner	Origin	Utilization
<i>Dioscorea dumetorum</i> Yellow yam	US 5 019 580	Shaman Pharmaceuticals M Iwu	West Africa	Treatment of diabetes in West Africa. The patent applies to the use of dioscoretin for the treatment of diabetes.
<i>Thaumatococcus daniellii</i>	US 4 011 206 US 5 464 770	Tate & Lyle (UK) Xoma Corp (US)	West Africa	Scientists at Ite University were the first to identify its potential as a sweetener. Since then, a gene has been cloned and used as a sweetener for confectionary. The people of West Africa have received no compensation.
<i>Prunus africana</i> Pygeum	US 3 856 946 FR 2 605 886	Debat Lab (France)	Mountain forests in Africa, especially Central Africa	Medicinal plant. The wood of the tree is used for sculpture. For the treatment of prostate disorders, gross overexploitation has been observed in many areas, with sales amounting to US\$150 million per year.
<i>Pentadiplandra brazzeana</i> Brazzeine	US 5 527 555 US 5 326 580 US 5 346 998 US 5 741 537	University of Wisconsin (US)	Gabon	Traditionally used as a sweetener. The patent applies to the sweetening protein compound, the brazzeine gene and transgenic organisms carrying the gene. Again, this means the developed countries can bypass the gathering or commercial growing of this African plant. The US company ProdiGene is currently introducing the gene into maize.
<i>Eupenicillium shearii</i> Mushroom	US 5 492 902	US Department of Agriculture, Research Foundation of the University of Iowa, Biotechnology Research and Development (US)	Côte d'Ivoire	To be used as an insecticide.
<i>Dioscoreophyllum cumminisii</i>	US 3 998 798 JP 5 070 494	University of Pennsylvania (US) and Kirin Brewery Ltd (Japan)	West Africa	Used to sweeten foods and drinks for centuries.

Source: Wynberg, 2000

ProdiGene, a branch of Pioneer Hi-Bred International, the largest seed company in the world, have now modified maize genetically, in order to produce large quantities of brazzeine. They estimate that demand in future can be met with a million tons of genetically modified maize, replacing any other supply coming direct from Central Africa' (Genetic Resources Action International, 2000).

CONCLUSION

The signing and ratification of the Revised Bangui Agreement are tantamount to granting legal authorization to plunder African biological resources by OAPI member states. The only redeeming feature is that Annex X on plant variety protection has not yet entered into effect. It is now time for the farmers' organizations and local communities to mobilize, calling the whole world to witness.

Within the framework of the implementation of this convention and of observance of the WTO's provisions (Article 27.3(b)), support must now be given for the initiatives of the African Union, in order to find an alternative to patents or plant breeders' rights, by proposing model legislation for the protection of the rights of local communities, farmers and breeders. All national and international organizations working in Africa in the area of biological diversity, food and agriculture should help to make this model law better known and have it adopted as part of the legal arsenal of every African country in the interest of their farmers and local communities.

Also, the African Group within the WTO should urgently renew and strengthen its 1999 position on Article 27.3(b) which is still under review. In the light of the experience gained in Francophone Africa and in OAPI member countries, where pressure to comply with UPOV on account of that article's requirements has been successful, the African Group should call for the removal of any reference to plant varieties. In other words, just as it is unacceptable to grant patents on life forms, which constitutes the first part of the African Group's position, it is equally unacceptable to impose IPR protection of plant varieties. New and existing plant varieties represent the very basis of world food security and monopoly systems are definitely not the answer to their management.

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Trading in KNOWLEDGE

An unprecedented surge in the scope and level of the protection of intellectual property rights (IPRs) has been engulfing the world. This globalizing trend has shifted the balance of interests between private innovators and society at large and tensions have flared around key public policy concerns.

Developing countries in particular face huge challenges when designing and implementing IPR policy at all levels. As the policy options for these nations to use IPRs in support of their broader development strategies are being rapidly narrowed down, many experts are questioning the 'one-size-fits-all' approach to IPR protection and are backing a rebalancing of the global regime.

Trading in Knowledge unravels and explains the many significant issues at stake in IPR negotiations and treaties. It offers unique perspectives on IPRs and trade from a diverse range of developing country participants including civil society actors, farmers, grassroots organizations, researchers and government officials. Contributions from well-known developed country authorities round out the selections.

This comprehensive collection is essential reading for policy-makers, national-level decision-makers, negotiators to the World Trade Organization and other relevant regional and international fora, intergovernmental organizations, environmental and development NGOs, and scholars and students in law, politics and development studies.

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