

Access to Genetic Resources and the Sharing of Benefits: Private Rights or Shared Use for Biodiversity Conservation?*

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1 Introduction

Biodiversity politics somewhat epitomise the North-South conflict: While advanced (bio)technology is predominantly being developed in the North, the biodiversity-rich South provides natural resources for research they seldom see the benefits of. For over a century botanical gardens, zoos and seed banks freely collected plant and animal species in tropical countries on the basis of the assumption that biological resources were the common heritage of humankind.¹ With the advent of laboratory-based biotechnology, however, the genetic properties of these species as well as the related knowledge of local healers, farmers and communities became highly valued. Thus, when due to the alarming rate of biodiversity loss a Convention on Biological Diversity (CBD) was being negotiated in the early 1990s, many countries of the South joined together in order to ensure that the discrepancy between resource provider and technology developer became more balanced. The “fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies...” (Art. 1), hence became one of the three central objectives of the Convention on Biological Diversity.²

The CBD was adopted at the 1992 UN Conference on Environment and Development in Rio de Janeiro and has since evolved into a complex system of policy and legal approaches to the conservation and

sustainable use of biodiversity as well as to access to genetic resources and the sharing of the benefits arising out of their utilisation.³ It is also subject of very disparate interests and negotiating resources. This paper provides an overview of the legal mechanisms and policy approaches regarding access and benefit sharing (ABS) and evaluates their impact on the other two objectives of the CBD, i.e. the conservation and sustainable use of biodiversity. It also contrasts the CBD’s ABS regime against the multilateral system of plant genetic resources established by the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR) which was negotiated in the realm of the UN’s Food and Agriculture Organisation (FAO).

2 ABS in the CBD – From Rio to Bonn

Apart from the technology gap, the issue of access and benefit sharing especially arose from the fact that from the early 1980s onwards the patenting of life-forms became a possibility first in the United States and later also in Europe.⁴ The processes and products associated with genetic resources hence became a tradable commodity and a potentially very profitable asset to the pharmaceutical, agrochemical and cosmetics industries. Until 1992 genetic resources could be accessed more or less freely and many substances and organisms became privatised through intellectual property rights (IPRs). The CBD introduces a new regime of national sovereignty over genetic resources. In order to compensate for this type of privatisation, it establishes provisions for the sharing of benefits arising from the utilization of genetic resources along with regulations on access to them. However, it does not question intellectual property rights as such.

Access and Benefit Sharing is regulated in the Convention’s Article 15 which essentially stipulates that Contracting Parties provide facilitated access to genetic resources within their jurisdiction, that access be for environmentally sound uses and on mutually agreed terms, that users of genetic resources seek prior informed consent from the provider country, and that there be a fair and equitable sharing of research results as well as of “benefits

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¹ Michael Flitner, Räuber, Sammler und Gelehrte. Die politischen Interessen an pflanzengenetischen Ressourcen. Frankfurt/New York: Campus, 1995; Lucile Brockway, Science and Colonial Expansion: The Role of the British Botanic Gardens, Yale, 1979.

² Cf. Jorge Cabrera Medaglia, A Comparative Analysis on the Legislation and Practices on Access to Genetic Resources and Benefit-sharing (ABS): Critical Aspects for Implementation and Interpretation. The ABS Project. IUCN. Bonn, no year, p. 1. See <http://www.biodiv.org/doc/legal/cbd-en.pdf> for the text of the Convention.

³ The CBD entered into force on 29 December, 1993.

⁴ See in more detail Joscha Wullweber, Das grüne Gold der Gene. Globale Konflikte und Biopiraterie. Münster: Westfälisches Dampfboot, 2004, pp. 47-51.

arising from the commercial and other utilization of genetic resources" (Art. 15.7). The benefit sharing shall also be on mutually agreed terms. The decision about access and benefit sharing lies with the national government of the providing Contracting Party which is required to develop adequate national legislation and policy.

Access to genetic resources is, furthermore, complemented by the access to technologies, including biotechnology, as long as they do not damage the environment and as long as they are supportive of the conservation and sustainable use of biodiversity (Art. 16). This highlights the role of the exchange of knowledge played in biodiversity issues – while users of genetic resources are mostly interested in traditional knowledge associated with genetic resources, developing countries would like to see a transfer of technological knowledge to their own research institutes.

It is knowledge too, however, that is the main object of contention. For inventions and discoveries – or rather their information content – based on genetic resources and related traditional knowledge have often been patented without the consent of the affected communities. Prominent biopiracy cases such as the patenting of components of the Indian Neem Tree⁵ or of the Ayahuasca plant, which is sacred to the indigenous peoples of the Amazon Basin⁶, have shifted the focus of the debate from sharing knowledge to intellectual property rights. These frequently are at the heart of ABS regulation and international debate.

Until now access and benefit sharing has most commonly rested on the negotiation of bilateral contractual agreements between companies or research institutions mainly from OECD countries and governments in developing countries. To this end, many governments have developed ABS legislation to regulate the terms of access, procedures of seeking informed consent, and conditions of benefit sharing in the case of the commercialisation of genetic resources. One noted example is Costa Rica's Biodiversity Law, No. 7788, which entered into force on 30 April, 1998.⁷ As one of its objectives it "will endeavour to achieve ...: To regulate access and in so doing make possible the equitable distribution of the environmental, economic and social benefits to all sectors of society, paying special attention to local communities and indigenous

peoples." (Art. 10.4) Some of the requirements for access include: "Prior informed consent of the representatives of the place where the access will occur ..." (Art. 63.1), and information about "The terms of technology transfer and equitable distribution of benefits, when there are any, as agreed in the permits, agreements and concessions ..." (Art. 63.3).

Few countries in the OECD world have established national ABS legislation.⁸ This indicates the ABS debate's focus on biodiversity that exists *in situ* or in its natural habitat where the greatest diversity exists in the South. The CBD does not address biodiversity collected prior to its entry into force and hence omits the large collections of biological resources that were already stored in gene or seed banks in the North. These provide enormous economic potential but a respective benefit sharing has not been politicised.⁹ However, some biodiversity-rich countries see this as a major cause of so few benefits flowing to the South.¹⁰

Many of the developing countries' counterparts, like Botanical Gardens, research institutes, and biotechnology companies, have also elaborated policies that guide ABS arrangements in bioprospecting¹¹ activities. For example, the International Cooperative Biodiversity Groups (ICBG) Programme¹² states in its guidelines: "Plans to collect samples for drug discovery should be vetted with the national government authorities of the host country and with any other national or local organizations they, you or your partners deem appropriate at the earliest stage of planning and once again, formally, before any collections take place." It

⁵ Vandana Shiva, The neem tree - a case history of biopiracy, no year. <http://www.twinside.org.sg/title/pir-ch.htm>

⁶ Cf. Biopiratas roban tesoros vitales de Amazonia. ADITAL. 10.09.2003. <http://www.biodiversidadla.org/article/articleview/3345/1/7/>

⁷ Biodiversity Law, No. 7788, 30 April, 1998. For the English version see <http://www.grain.org/docs/costarica-biodiversitylaw-1998-en.pdf>. Cf. also Cabrera Medaglia, supra note 2, for a comparison of different ABS legislations.

⁸ See <http://www.biodiv.org/world/reports.aspx?type=nbsap> for an overview of National Biodiversity Strategy and Action Plans. Cabrera Medaglia (supra note 2) only names Australia, Hungary, Iceland, Italy, Mexico, Norway, and the United States.

⁹ Cf. Ulrich Brand, Christoph Görg, Postfordistische Naturverhältnisse. Konflikte um genetische Ressourcen und die Internationalisierung des Staates. Mit Beiträgen von Karin Blank, Joachim Hirsch und Markus Wisen. Münster: Verlag Westfälisches Dampfboot, 2003, p. 77.

¹⁰ Cf. Jorge Caillaux, Manuel Ruiz, Legislative Experiences on Access to Genetic Resources and Options for Megadiverse Countries. Paper presented at the First Meeting of Like-Minded Megadiverse Countries. 16-18 February 2002, Mexico, p.1. http://www.megadiverse.org/armado_ingles/PDF/five/five5.pdf.

¹¹ "Biodiversity prospecting ... is the exploration of biodiversity for commercially valuable genetic resources and biochemicals. It describes a search for resources, and the collection of resources with an intention to commercialise the resources." Sarah A. Laird, Rachel Wynberg, Biodiversity prospecting & access and benefit-sharing. An introductory primer. Pretoria: IUCN – The World Conservation Union, 2003, p. 7-8.

¹² The US-based ICBG-Programme is funded by the National Institutes of Health (NIH), the Biological Sciences Directorate of the National Science Foundation (NSF) and the Foreign Agriculture Service of the USDA. "The ... Biodiversity Program is designed to guide natural products drug discovery in such a way that local communities and other source country organizations can derive direct benefits from their diverse biological resources. Benefit-sharing may provide clear incentives for preservation and sustainable use of that biodiversity." Project outline at <http://www.fic.nih.gov/programs/icbg.html>. Interestingly, this US-funded programme subscribes to the principles of the CBD without the US having ratified the Convention.

suggests further that “useful contractual tools for the designation of rights and responsibilities include material transfer agreements, research and development agreements, license options agreements, know-how licenses, benefit-sharing agreements, and structured trust funds. [...] The ownership and compensation terms of first generation and subsequent inventions based upon a lead discovered in ICBG work should be clearly stipulated in agreements.”¹³

However, some serious problems underlie these bilateral agreements. First, the actual outcome of negotiations in the form of a contractual agreement always depends on the bargaining power of the different actors involved. Indigenous and local communities often lack the knowledge of possible benefits or the legal capacity to negotiate a fair contract.¹⁴ They might, furthermore, be bullied by government authorities that have differing interests from their own. Secondly, this bilateral approach dismisses the problem of attributing biodiversity-related knowledge to a particular group or community. Due to the CBD’s conferral of sovereignty over genetic resources to the nation-state, some of the indigenous communities that share certain environmental or medicinal knowledge with other communities across the border will be left out of the negotiations because the latter have to be conducted under national regulations. Just the possibility of some groups selling their local knowledge may actually have affected the sustainable use and development of agricultural biodiversity. As Pat Mooney¹⁵ notes, a ‘biopiracy thinking’ has created rivalry among communities and many are today afraid to exchange seed because other communities may enter into an access agreement. A central prerequisite for the development of locally adapted crops – free exchange, selection and crossing of seeds – is therefore hampered and may affect food security in the long run.

A third problem arising from the institutional framework of the CBD is the limited enforcement of benefit sharing agreements outside national jurisdiction. Although the CBD’s principles are legally binding, they are in conflict with international and national intellectual property regulations. Neither the Agreement on Trade-related Intellectual

Property Rights (TRIPS) of the WTO nor most of the national patent offices in the OECD world require the disclosure of origin of genetic resources, not to mention compliance with the requirement of prior informed consent.

It is especially due to these enforcement shortcomings, but also because of the lack of convergence in implementation, that in 2002 the ‘Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization’ were adopted at the Sixth Meeting of the Conference of the Parties (COP 6).¹⁶

3 The Bonn Guidelines on Access and Benefit Sharing

The history of the Bonn Guidelines goes back to a survey among Swiss companies and research institutes which resulted in Swiss government institutions drafting guidelines that dealt with the implementation issues regarding the ABS provisions of the CBD.¹⁷ Swiss government officials first presented the document at COP 4 and then at two Expert Panel Meetings on ABS as well as COP 5. At the first meeting of the Open-Ended Ad Hoc Working Group on Access and Benefit Sharing, held in Bonn in October 2001, the guidelines were almost finalised and already adopted as Decision VI/24 at COP 6 in The Hague in April 2002.

Only two months before that a group of developing countries met in Cancun, Mexico, to discuss possible cooperation on the conservation and sustainable use of biodiversity, as well as on ABS. The then founded Group of Like-Minded Megadiverse Countries converged on “Seek[ing] the creation of an international regime to effectively promote and safeguard the fair and equitable sharing of benefits arising from the use of biodiversity and its components. This regime should contemplate, inter alia, the following elements: the certification of the legal provenance of biological materials, prior informed consent and mutually agreed terms for the transfer of genetic material as requirements for the application and granting of patents ...”¹⁸

However, their lobbying for a legally binding regime was not met by most of the user countries. The Bonn Guidelines hence only provide a voluntary guide for “developing and drafting legislative, administrative or policy measures on ABS ...” (Para.

¹³ Cf. ICBG: Request for Applications TW-03-004. Principles for accessing genetic resources, the treatment of intellectual property and the sharing of benefits associated with ICBG-sponsored research, <http://grants.nih.gov/grants/guide/rfa-files/RFA-TW-03-004.html>. October 17, 2002.

¹⁴ Cf. Brand / Görg (2003), supra note 9.

¹⁵ Cf. Pat Mooney: Ohne kulturelle Vielfalt keine (Agro)biodiversität. Hemmnisse und Voraussetzungen für vielfältiges (Land)wirtschaften. Vortrag im Rahmen der Tagung ‘Agrobiodiversität entwickeln’. 4-5 February, 2004, Berlin, p.3. http://www.agrobiodiversitaet.net/site/page/downloads/tagung/AG_2.pdf

¹⁶ See <http://www.biodiv.org/programmes/socio-eco/benefit/bonn.asp#> for the text of the Bonn Guidelines.

¹⁷ Cf. Brand/Görg (2003), supra note 9, p. 87. The Swiss Guidelines on ABS can be found at: <http://www.biodiv.org/doc/meetings/cop/cop-05/information/cop-05-inf-21-en.pdf>.

¹⁸ The Group claims that approximately 70 % of the world’s biodiversity can be found within the boundaries of its member states. See http://www.megadiverse.org/armado_inqles/PDF/three/three1.pdf for the Cancun Declaration of Like-Minded Megadiverse Countries (18.02.2002).

1). They contain possible elements of national ABS legislation as well as of bilateral contracts and material transfer agreements. For example they detail basic principles and elements of prior informed consent, procedures for obtaining consent, requirements for the specification of the intended use of the collected resources, and possible elements of mutually agreed terms. An Appendix guides through the design of a material transfer agreement and lists potential monetary and non-monetary benefits, such as payments, or funding for conservation and sustainable use of biodiversity or of research on the monetary side, and technology transfer or capacity-building on the non-monetary side.

Those interest groups that do not agree with the monetary valuation of biodiversity see the Bonn Guidelines as an instrument for the further commercialisation of genetic resources. Due to the voluntary nature of the guidelines, negotiators could pick and choose from the different elements of ABS contracts without implementing conservation-oriented measures. Furthermore, the focus on instruments developed by so-called provider countries remains.¹⁹ Contracting Parties with users of genetic resources under their jurisdiction are merely asked “to consider”, for example, “measures to *encourage* the disclosure of origin of the genetic resources” or “*voluntary* certification schemes for institutions abiding by rules on access and benefit-sharing” (I.C.16(d)).²⁰

This emphasis on ABS laws in biodiversity-rich countries therefore retains the enforcement problems that especially the Megadiverse Countries see in current ABS regulation. Because of this the compromise of the Bonn Guidelines was already questioned the same year at the World Summit of Sustainable Development (WSSD) in Johannesburg.

4 Paving the road to an international ABS Regime

In Johannesburg the Group of Megadiverse Countries was able to argue that the Bonn Guidelines were mainly focusing on access to genetic resources whereas benefit sharing could hardly be internationally enforced when it comes to intellectual property. When applying for patents that are based on genetic information, applicants do not have to submit an ABS contract that details prior informed consent or even the mere permit for collection. Thus, patents will not be denied even if the applicant has not complied with the CBD provisions.

Moreover, it is extremely difficult for indigenous and local communities and even governments of the South to appeal against existent patents that infringe upon the principles of ABS. In its Cancun Declaration the Group therefore demanded an “international regime to effectively promote and safeguard the fair and equitable sharing of benefits arising from the use of biodiversity and its components”.²¹ The latter would go much beyond the CBD terminology of genetic resources, including *inter alia* microorganisms or so called environmental services. The WSSD’s Plan of Implementation as a result dilutes this demand and stipulates in Paragraph IV.42(o) to “negotiate within the framework of the Convention on Biological Diversity, bearing in mind the Bonn Guidelines, an international regime to promote and safeguard the fair and equitable sharing of benefits arising out of the utilization of genetic resources”.²²

The main object of contention, however, could neither be resolved in Johannesburg nor at the subsequent Seventh Meeting of the Conference of the Parties to the CBD, held in Kuala Lumpur in February 2004. That is to say that at COP 7 initial deliberations on the terms of reference for the negotiation of an international regime could not bring agreement as to whether the regime is to be legally binding or non-binding. Equally the delegations left it up to the actual negotiations to determine the form of a potential requirement for the disclosure of origin of genetic resources and possible sanctions in the case of non-compliance.

As observers of the process note, the terms of reference do not define the objectives of an international regime. It is highly contested whether a new regime will result in better enforcement of benefit sharing. While particularly government officials from Megadiverse Countries argue the need of a binding regime, others assert that the CBD already contains the legally binding provisions of prior informed consent and mutually agreed terms and may only need to be refined in terms of tools. As Manuel Ruiz notes, the political positions on ABS are quite well defined. The negotiation’s outcome may therefore only differ slightly from existing regulation and hence may not justify the tremendous cost of such a process. According to him, an international regime is only worth the effort if it “focuses on agreeing on full disclosure in patent applications ..., on univer-

²¹ Cf. Cancun Declaration (2002), supra note 18.

²² See http://www.johannesburgsummit.org/html/documents/summit_docs/2309_planfinal.htm for the document. Cf. also Ruiz, Manuel (2004): An Assessment of the Advantages and Disadvantages of an International Regime for Access to Genetic Resources and Benefit Sharing. In: Policy and Environmental Law Series of the Peruvian Society for Environmental Law. No. 16, p. 5.

¹⁹ Cf. Brand / Görg (2003), supra note 9, pp. 89-90. Also ETC Group: From Global Enclosure to Self Enclosure: Ten Years After – A Critique of the CBD and the ‘Bonn Guidelines’ on Access and Benefit Sharing (ABS). Communiqué No. 83 (January/February 2004), pp. 10-12.

²⁰ Our italics.

sal obligations on certification of origin or provenance, ... on specific measures ... to ensure compliance and monitoring of genetic resources flows, [and if it]... places emphasis on benefit sharing and technology transfer provisions in particular".²³

With regard to the conservation of biodiversity an international regime would most likely move the focus further away from protection measures as its main underlying objective lies in securing monetary benefits from intellectual property. Experience from existing ABS legislation and contracts shows that most of the benefits flow into projects that facilitate the further analysis of genetic resources regarding active ingredients and thus the possible commercialisation of components. For example, local research institutes are provided with technology and (taxonomic) know-how.²⁴

5 A different approach: Access and benefit sharing in the International Treaty on Plant Genetic Resources

A model of access and benefit sharing alternative to that of the CBD has been conceptualised within the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR or "Seed Treaty"). Its underlying rationale promotes facilitated access and multilateral exchange of genetic resources. This section deals with the special nature of Plant Genetic Resources for Food and Agriculture and the ABS regime that has been developed in order to account for it.

Plant Genetic Resources for Food and Agriculture (PGRFA) „consist of the diversity of genetic material contained in traditional varieties and modern cultivars grown by farmers as well as crop wild relatives and other wild plant species that can be used for food, feed for domestic animals, fibre, clothing, shelter, wood, timber, energy, etc."²⁵ Unlike "wild" biodiversity, plant as well as animal genetic resources for food and agriculture are "man-made" to the extent that farming communities domesticated and developed by way of breeding plants and animal. Human influence therefore is a characteristic of agrobiodiversity. Another feature characteristic of agrobiodiversity is the high degree of (international) exchange. This began thousands of years ago with the spreading of rice, wheat, potatoes, pigs, chicken, etc. from so called centres of origin and diversity and their adaptation and selection in other regions. Today, with an international-

ised breeding sector and seed/sperm market, the exchange and intermixing of genetic material, and international interdependence has even intensified.²⁶ Some crop varieties feature source material from more than 50 countries of origin.²⁷ This constellation not only renders difficult the clear identification of the genetic resource's 'national' origin – as implicitly required in the CBD concept of national sovereignty. It also implies that the introduction of bilateral negotiations between national government and breeding company would boost transaction costs in the breeding sector.²⁸

The special nature of PGRFA was one reason for further negotiation needs after the CBD's adoption. The other reason was that within the CBD negotiations no agreement could be reached on the status of the existing *ex situ* collections (located outside the country of origin and having been acquired prior to the CBD's entry into force); subsequently, they were not included into the CBD. However, for PGRFA the international *ex situ* collections and especially the centres of the Consultative Group on International Agricultural Research (CGIAR) play a crucial role, as they maintain some 12% of all genetic resources collected for food, agriculture and forestry "in trust for the international community".²⁹ Though this might sound little, it is in fact the major and best documented collection worldwide. To address this issue, among others, a mandate was given to deal with the outstanding issue under FAO's International Undertaking (IU) on Plant Genetic Resources.³⁰ The IU was the first (non-binding) international instrument harmonising access to plant genetic resources for food and agriculture.³¹ While it was based on the premise that genetic resources are a common heritage of mankind and are to be used and shared freely, it had now to be accommodated to the new CBD regime of national sovereignty. In 2001, after seven years of

²³ *Ibid.*, pp. 4 & 6.

²⁴ Cf. Brand / Görg (2003), *supra* note 9, p. 77.

²⁵ FAO (1996): Report on the State of the World's Plant Genetic Resources for food and agriculture, prepared for the International Technical Conference on Plant Genetic Resources Leipzig, Germany 17–23 June 1996. p. 6.

²⁶ Cary Fowler, Melinda Smale, Samy Gajji, Unequal Exchange? Recent Transfers of Agricultural Resources and their Implications for Developing Countries. Development Policy Review, Volume 19:No 2, 2001, pp. 181.

²⁷ Achim Seiler, Der Internationale Saatgutvertrag der FAO: Farmers Rights – geistige Eigentumsrechte – Zugang zu genetischen Ressourcen. In: Ch. Baumgartner; D. Mieth (Hg.): Patente am Leben? Paderborn, 2003, S. 259-279.

²⁸ Bert Visser, Derek Eaton, Niels Louwaars, Jan Engels, Transaction Costs of Germplasm Exchange under Bilateral Agreements. GFAR-Paper, 2000.

²⁹ FAO, Revision of the International Undertaking on Plant Genetic Resources. Issues for Consideration in Stage II: Access to Plant Genetic Resources, and Farmers' Rights. Report prepared for the Sixth Session of the Commission on Plant Genetic Resources. CPGR-6/95/8, CPGR-EX1/94/5 Annex, Rome 1995, p. 7. On the debate on the status of the CGIAR trusteeship cf. Robin Pistorius, Scientists, plants and politics. A history of the plant genetic resources movement. Rome 1997.

³⁰ Resolution 3 of the Nairobi Final Act in the CBD negotiations.

³¹ It was adopted in 1983 as a reaction to the culminating conflict on the free flow of plant genetic resource materials from the South to the North, dubbed "Seed Wars" (cf. J. Kloppenburg, D.L. Kleinman, Seed wars: common heritage, private property, and political strategy', Socialist Review 95 (1987), pp. 6-41; Pistorius (1997), *supra* note 29.

dragging negotiations, the Seed Treaty was signed as an internationally binding agreement, entering into force on 29 June 2004.

In conformity with the CBD, though avoiding its bilateral approach, the ITPGR is based on a Multilateral System (MS) of access and benefit sharing (Art. 10 ITPGR): For a list of 35 food and 29 forage crops the parties will provide "facilitated access". This means that access to genetic material from these plants will be free of charge or at a minimum fee for breeding and research purposes, as long as they are under the management and control of a Contracting Party and belong to the public domain³² or are part of international *ex situ*-collections (Art. 11.2, 11.5). However, access will not be free for industrial purposes (Art. 12.3 a, b). Access to PGRFA found in *in situ* conditions shall be provided according to national legislation or, in the absence of such legislation, according to standards to be set by the Treaty's Governing Body. Unlike in the CBD, there is no need to apply prior informed consent procedures or to arrange for mutually agreed terms on a case-by-case basis. Although a number of countries (among others the EU) aimed at maintaining completely open access to PGRFA, a restriction by way of a list was stipulated by a number of developing countries. Especially the Group of Megadiverse Countries, who would have preferred a bilateral ABS system in the first place, pressed to keep the list as short as possible. A standardised Material Transfer Agreement (MTA) will specify the details of access and benefit sharing. It will also be the basis for private contracts between providers (mostly gene banks) and users of PGRFA.

One of the most ambiguous clauses of the Treaty regulates the relation of access to genetic resources and intellectual property rights. Art. 12.3 (d) states, that "recipients shall not claim any intellectual property or other rights that limit the facilitated access to the plant genetic resources for food and agriculture, or their genetic parts and components, in the form received from the Multilateral System".³³ This ambiguous language reflects, on the one hand, the concern of developing countries which sought to avoid that the MS's material itself (inclusive parts/components, e.g. resistance genes) can be protected by IPRs, thus impeding traditional farmers' practices. On the other hand, the addendum "in the form received" leaves open the possibility for IPR claims on *derived* materials, thus reflecting the industrialised countries' interest to continue their IPR practice without alteration. The

stipulation is expected to prompt multiple interpretations.³⁴ Since the Treaty does not explicitly refer to the protection of derivatives, e.g. of varieties developed with the aid of genetic material from the Multilateral System, it has to be concluded that the use of IPRs on those is consistent with the treaty.³⁵

As regards the benefit sharing provisions that complement the access regulations, Art. 13.2 specifies as mechanisms for the fair and equitable sharing of commercial and non-commercial benefits arising out of the use of PGRFA from the MS: the exchange of information, access to and transfer of technology, capacity-building, as well as the sharing of the benefits arising from commercialization. The sharing of monetary and other benefits of commercialization is only required when a commercial product (a variety) is being developed and when this product is protected in a manner that restricts further research and breeding. The recipient of the MS-material then has to pay an equitable share of the benefits into a fund that will finance PGRFA programmes primarily in developing countries and countries with economies in transition.³⁶ The precise terms of the benefit-sharing requirements – to be established "in line with commercial practice" – are still to be determined at the first meeting of the Governing Body.

Apart from the ABS provisions the Seed Treaty contains another important element that is indirectly linked to ABS: Farmers' Rights. These are the (still not very clear-cut) rights arising from farmers' contribution to conserving, improving, and making available plant genetic resources.³⁷ They have originally been developed in the context of the IU as a counter-concept to IPRs, in order to balance the asymmetric relationship of those providing germplasm and those accessing and commercialising it.

³⁴ Basically, its interpretation will decide whether merely those technical steps (and resulting technical findings/inventions) after the taking from the MS may be covered by an IPR or whether material that forms the basis of the breeding result and that (even though in a genomically altered form) has been taken from the MS as 'precursor material' can be protected, too. See Seiler (2003), supra note 27, p. 265, and Cary Fowler, The Status of Public and Proprietary Germplasm and Information: An Assessment of Recent Developments at FAO. In: IP Strategy Today 7/2003. Ithaca, USA.

³⁵ This deduction is supported by Art. 12.3 (f), 13.2 (b) as well as the preamble that state that "nothing in this Treaty shall be interpreted as implying in any way a change in the rights and obligations of the Contracting Parties under other international agreements" [such as TRIPS] and that it "is not intended to create a hierarchy between this Treaty and other international agreements."

³⁶ If the product is accessible without restriction to others for research and breeding, the recipient commercializing the product shall be encouraged to make a voluntary payment. Five years after the Treaty's entry into force, the Governing Body may evaluate whether benefit-sharing payments should become mandatory even when material is commercialized without restrictions.

³⁷ Martin Girsberger, Biodiversity and the Concept of Farmers' Rights in International Law. Berne 1999. Carlos Correa, Options for the Implementation of Farmers' Rights at the National Level. T.R.A.D.E.-Working Papers 8, South Centre, 2000.

³² This refers mostly to material in national gene banks. However, if the material is protected by IPRs, is under development, or is part of the working collections of public breeders, it is not part of the public domain.

³³ Our italics.

The Seed Treaty recognises Farmers' Rights and in this respect names the protection of traditional knowledge relevant to PGRFA, the right to equitably participate in sharing benefits arising from their utilization, and the right to participate in national decision-making on PGRFA policies (Art. 9 ITPGR). However, the responsibility for upholding these rights is conferred to national governments. Furthermore, an explicit right to save, use, exchange and sell farm-saved seed and propagating material (the so called Farmer's Privilege) is not provided for. Farmers' Rights and especially the Farmer's Privilege are thought to be crucial for ensuring food security and sustaining agrobiodiversity.³⁸

To sum up, the multilateral approach of the Seed Treaty's ABS system is well suited to circumvent the problem of attributing national origins to 'transnational' biological material. Free access to at least a number of PGRFA can help keeping those in the public domain – thus securing a basis of breeding and therewith promoting food security as well as the conservation and further development of agrobiodiversity. The Treaty's not yet fully elaborated funding strategy will represent a mechanism to finance the maintenance of plant genetic resources and to support implementation of the FAO's Global Plan of Action on PGRFA. However, there are some serious flaws to the Treaty's ABS system. A major dilemma arises out of the ABS system's intrinsic link of the sharing of monetary benefits to the application of IPRs: one element of the Treaty's funding strategy for PGRFA maintenance depends on the use of IPRs that again restrict access to PGRFA – a 'perverse incentive'. Further deficiencies arise from the unclear position of the Treaty in relation to other international law, especially trade and IPR law. We have already mentioned the limited number of crops on the system's list and the Treaty's ambiguity with regard to IPRs on materials stemming from the Multilateral System. Especially with regard to the latter aspect, a lot will depend on future guidelines that will be developed by the Governing Body. Finally, though the Treaty acknowledges Farmer's Rights it leaves their definition and implementation to nation states where often the interests of governments and small-scale farmers strongly diverge.

6 Conclusion

The system of access to genetic resources and benefit sharing arising out of their utilisation rests on the assumption that an economic valuation of biodiversity would contribute to its conservation because shared benefits would compensate local and indige-

nous communities as well as governments for not extensively exploiting natural resources. On the whole it can be argued, however, that the enormous efforts of developing instruments for access and benefit sharing have contributed rather little to the conservation and sustainable use of biodiversity, or even the slowing of the rate of biodiversity loss.

The likely reason for this is an underlying focus of the ABS debate on financial benefits and the weak links between the three main objectives of the Convention which are reproduced in national ABS provisions. While, regarding the latter, Art. 15 does not refer to the conservation and sustainable use of biodiversity at all, Art. 16.1 calls for the transfer of "technologies that are relevant to the conservation and sustainable use of biological diversity". As these technologies include biotechnology, however, the effect on conservation highly depends on the manner of implementation. With respect to the link of ABS to biodiversity maintenance the ITPGR is exemplary: it is equipped with a funding mechanism which aims explicitly at promoting agricultural biodiversity and related livelihoods. Once again, it is yet to be seen, though, whether its concrete implementation will bring the anticipated results.

Many questions regarding the usefulness of ABS regulation have been raised from an economic and an CBD inherent perspective. One critical issue arises from the level of revenues that can be achieved through financial benefit sharing. Generally, although the *potential* commercial benefits arising from the utilization of genetic resources are high, there is also high insecurity in whether the resources *really* carry economically exploitable information. This puts a damper on the user's willingness to pay.³⁹ Furthermore, a countries' bargaining power in bilateral ABS negotiations would decrease, when a genetic resource exists in more than one country – which is frequently the case. The company could then try to obtain the resource from the supplier with the most favourable conditions. The estimation of ABS revenues also would need to take into account that a lot of the resources are already stored in gene banks and do not fall under the provisions of the CBD. Hence they would not raise any benefits either. Moreover, benefit sharing for genetic resources that have not been acquired directly from the country of origin but have been passed on from prior users might pose a problem due to lacking monitoring capacities. And finally, the equation of preserving biodiversity and generating benefits from its use, that is inherent to the

³⁸ M. S. Swaminathan, *Agrobiodiversity and Farmers' Rights*. Madras 1996.

³⁹ Cf. Oliver Deke, *Conserving Biodiversity by Commercialization? A Model Framework for a Market for Genetic Resources*. Kiel Working Paper No. 1054, 2001.

CBD, may not work out at all: Active ingredients of and information contained in genetic resources can today often be synthesised and reproduced through biotechnology, so that once the ingredient enters commercial production there may be no need anymore for companies to fund the conservation of the particular ecosystem that the genetic resource originates from.

Attempting to link benefits to conservation, the question arises as to whether ABS payments flow into the conservation and sustainable use of biodiversity, e.g. via a Trust Fund. National legislation and policies frequently provide no obligatory earmarking of the revenues. Rather, they are geared towards research and technology which facilitate the further exploration of potential uses of genetic resources. In cases where indeed such an earmarking of the revenues takes place, researchers from Columbia University in an empirical study found that "a payment of \$100,000 provid[ing], [for example], direct support to [Costa Rica's] conservation efforts ... [may be a 'drop in the bucket'], ... given the \$1 billion price tag for ten years worth of maintenance of Costa Rica's national park system".⁴⁰

This raises the question whether the tremendous resources that go into negotiating an international regime and bilateral contracts within the CBD match potential benefits and should perhaps rather be used for conservation efforts. The negotiations on the International Regime on Access and Benefit Sharing will most likely shift the focus further away from conservation since its primary objective is the recognition of the CBD principles by the IPR-regime. Many critics of the CBD argue rightly, for example, that the Megadiverse Countries seek to improve the conditions of commercialising genetic resources, rather than question IPRs related to life forms and their effect on the conservation of biodiversity. By discursively linking benefit sharing to intellectual property the ABS regime may be counterproductive, especially in the realm of agricultural biodiversity where the free exchange of seed is essential for the sustainable use and conservation of manifold varieties and ecosystems.

⁴⁰ Columbia University School of International and Public Affairs (1999): Access to Genetic Resources: An Evaluation of the Development and Implementation of Recent Regulation and Access Agreements. Environmental Policy Studies Working Paper #4, p. 81.

Against this backdrop it is necessary to change or at least supplement the ABS approach. The underlying assumptions of the ABS debate in the CBD largely dismiss a broader meaning of benefits from the use of genetic resources, such as the securing of livelihoods, health, food security, and their conservation in general, if these are not linked to the resources' commercialisation.⁴¹ Therefore, other possible forms of benefit sharing need to be considered that might help to improve sustaining biodiversity. One important proposal in this direction is the recognition of collective rights and self-determination of those who have been the stewards of 99% of the world's biological diversity,⁴² i.e. local communities and indigenous peoples, as well as small-scale farmers. These rights entail control over land, territory and biological resources conserved on this land as well as cultural heritage and control over their own knowledge.⁴³ Due to the frequent conflicts between government elites and indigenous communities in many developing countries this is highly controversial. However, it might be a more effective approach to ensuring protection and sustainable use of biological resources, and to preserving the knowledge, innovations and practices related to these. For, as experience shows, it has been industrial agriculture, commercial logging activities and the like that have deteriorated biodiversity. The often related displacement of local communities and their integration into industrial labour-relations has had a tremendous effect on the loss of local knowledge. In relation to agricultural biodiversity, the rights-based approach would aim at strengthening Farmers' Rights: by developing international guidelines that delineate concrete principles, by internationally monitoring their abundance, and finally by extending them to the free exchange of farm-saved seed and thus maintaining self-determined livelihoods that promote the creation and re-creation of biodiversity.

⁴¹ Cf. Brand / Görg (2003), supra note 9, p. 78.

⁴² International Society of Ethnobiology (ISE), Declaration of Belem, 1988. Online: <http://qualart.anthro.uqa.edu/ISE/socbel.html>

⁴³ IIFB, Opening Statement of the International Indigenous Forum on Biodiversity – 7th Conference of the Parties. Kuala Lumpur, 9 February, 2004. IIFB, Closing Statement of the International Indigenous Forum on Biodiversity at the Ad Hoc Open-Ended Working Group on Access and Benefit Sharing Convention on Biological Diversity. Bonn, 22-26 October 2001.