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REVIEW

Agrobiodiversity on the Agenda

Franziska Wolff

Will the CBD fulfil our Expectations? Conserving
Biological Diversity

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Access to Genetic Resources and the fair and
equitable Sharing of the Benefits

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Environmental Concept for the UN Conference on
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The Economic Cost of Environmental Legislation

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Editorial

The main topic of this issue of the *elni Review* is the *Convention on Biological Diversity* (CBD). The ninth meeting of the Conference of the Parties (COP 9) will be hosted by Germany and held in Bonn from 19 to 30 May 2008. The global community will discuss measures against the ongoing destruction of biodiversity as well as ways towards a fair and responsible use of genetic material. The issues for in-depth consideration include:

- Agricultural and forest biodiversity
- Global strategy for plant conservation
- Invasive alien species
- Ecosystem approach
- Progress in the implementation of the strategic plan and progress towards the 2010 target and relevant Millennium Development Goals.

Non-Governmental Organisations take great interest in the success of this process and have made a number of recommendations to the negotiating parties.

The COP 9 issues are discussed in several articles in this issue: “Agrobiodiversity” is still an unknown quantity for most people, observes *Franziska Wolff*. Her contribution provides background information on the loss of agrobiodiversity and discusses recent international policy developments as well as the challenges that lie ahead pertaining to a reversal of this trend.

Monika Brinkmüller asks “Will the CBD fulfil our expectations?” Her article considers whether the acronym CBD also stands for “Conserving Biological Diversity” in a fair and responsible manner.

Another important topic is the “Access to Genetic Resources and the fair and equitable sharing of the benefits that result from their use”, which is analysed by *Susette Biber-Klemm*. Furthermore, *Hartmut Stahl* discusses the environment programme for the UN Conference on Biological Diversity in this issue.

‘Biodiversity damage’ liability as laid down in the Environmental Liability Directive is the topic of the contribution by *Volker Mauerhofer*. He scrutinises the definition in the Directive and its distinction from more stringent EU, international and national norms.

In the context of the “Better Regulation” initiative on the EU level, *Jochen Gebauer* takes a look at the economic cost of environmental legislation. From an environmental law perspective, he discusses whether the German standard cost model measurement can contribute to the EU action programme in terms of the reduction of administrative burdens.

Finally, *Birgit Dette* elaborates on the Alpine Convention as an international agreement with wide-spread dimensions.

Last but not least, the “New Books” column presents a review of the second edition of the Negotiator’s Handbook on “Multilateral Environmental Agreements” by *Simone Hafner*.

The next issue of the *elni review* will focus on Environmental Impact Assessment and the Revision of the IPPC Directive. Please send contributions on this topic as well as other interesting articles to the editors by the end of June 2008.

Martin Führ

March 2008

elni forum

Producer responsibility and WEEE revision

takes place on Thursday, May 15, 2008, at 6 p.m.,

at the *Facultés universitaires Saint-Louis*,

Boulevard du Jardin botanique 43 (Metro Botanique/Rogier),
1000 Brussels, Salle du Conseil, 4th Floor, at the invitation of
CEDRE (Environmental Law Study Center)

***Enforcement of individual producer responsibility
through (smart) Labelling of
electric and electronic products?***

with an introduction by

*Gerhard Roller, University of Applied Sciences
Bingen/I.E.S.A.R*

*Martin Führ, University of Applied Sciences
Darmstadt/sofia*

The state of revision of the WEEE-Directive

with an overview by

Kurt van der Hertem, European Commission

Gerhard Roller and Martin Führ will present results of a research project that has been carried out by three Universities (Darmstadt, Pforzheim and Bingen) and funded by the German Ministry of Education and Research.

Please confirm your participation by e-mail to cedre@fusl.ac.be

Access to Genetic Resources and the Fair and Equitable Sharing of the Benefits Resulting from their Use – The Challenges of a New Concept

Susette Biber-Klemm

1 Introduction

The system of access and benefit sharing (ABS) - or more technically worded "Access to Genetic Resources and Fair and Equitable Sharing of Benefits resulting from their utilisation" - is one of the most debated topics in the field of conservation and sustainable use of biodiversity.

Explained in a nutshell, the system institutionalises, on the basis of the national sovereignty over natural resources, conditions for access to and utilisation of genetic resources and – indirectly – also to traditional knowledge related to these genetic resources. It prescribes the well-known triad of Prior Informed Consent (PIC), Mutually Agreed Terms (MAT) and the benefit sharing.

Since the Convention on Biological Diversity (CBD) entered into force, the implementation of the system has proven to be a challenging endeavour, which is discussed in a range of international governmental and non-governmental fora and bodies¹. The complexity of the system is, among other things, caused by the fact that biodiversity, genetic diversity, access to genetic resources and related traditional knowledge (TK) is an intersecting issue, touching different areas and interests that involve the utilisation and sustainable use of biological resources - agriculture, forestry, water ecosystems, conservation, biotechnology, and the rights of the holders of TK. Thus, it involves a great variety of stakeholders, representing a broad range of interests: from biotechnological and pharmaceutical industries, animal and plant breeding companies to local farmers and indigenous peoples. ABS is further perceived as a North-South issue. It provokes post-colonialist sensitivities and argumentations, and is linked to ethical questions of justice, equity and fairness.

The ABS regime is an essential part of the concretisation of the goals of the CBD. Its implementation has, since the Convention entered into force, been an important item on the agenda of the Conferences of the

Parties (COP)². A major achievement in this process was the adoption of the so-called Bonn Guidelines (2002)³, a non-binding instrument concretising the ABS system. In 2004, in implementing a recommendation of the World Summit on Sustainable Development⁴, COP 7 mandated its Ad Hoc Open-ended Working Group on Access and Benefit Sharing to negotiate a so-called International Regime on ABS⁵. This process is ongoing. The mandate is to accomplish the process in 2010.

At present, the following emphases in the negotiation of the International Regime can be identified: 1) The definition of the ABS subject matter, in particular the issue of "derivatives"⁶; 2) the creation of measures to support compliance with PIC and MAT, especially the question of disclosure of origin in patent applications and of an international certificate of origin/source/legal provenance; and 3) the question of the legal protection of traditional knowledge and its integration in the ABS system.

In the following, some of the current debates will be presented in more detail. However, in a first step, in order to facilitate insight into the challenges of the system, the background and context of its evolution will be described and analysed.

2 The ABS system in context

The history of the CBD and of its ABS system are closely linked to the general developments which have taken place in the international community of states as well as to a series of new insights emerging in the global biodiversity world.

2.1 New insights in biology

In the 1970s, awareness of the significance and importance of diversity for the dynamic evolution of nature grew, along with a new insight in, and acknowledge-

¹ Of course in the CBD conference of the Parties (COP), the COP has created two specific working groups to handle the issue: the ad-hoc open-ended working group on ABS and the ad-hoc open-ended working group on TK. Further agencies implied in the debates are the WTO with its Agreement on Trade Related Intellectual Property Rights (TRIPS) and the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore of WIPO (World Intellectual Property Organisation). Access and benefit sharing is also an issue in the framework of the related International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), access and benefit sharing is an issue.

² See <http://www.cbd.int/abs/intro.shtml> (accessed on 22 January 2008).

³ Guidelines on access and benefit-sharing intended to assist Parties and stakeholders with the implementation of the access and benefit-sharing provisions of the Convention; UNEP/CBD/COP/6/20; Decision VII/24.

⁴ Johannesburg, South Africa, 26 August to 4 September 2002.

⁵ COP 7, Decision VII/19 D; <http://www.cbd.int/decisions/?dec=VII/19> (accessed on 18 January 2008).

⁶ Even though (or because?) the term is not clearly defined and applied with varied meaning: The term is regarded as encompassing a) material that is later bred, cultivated or otherwise generated through some multiplication process in the user country; b) meta-extracts, fractions or essences obtained from a plant, animal or other sample; and c) a product or commodity created in utilising the genetic resource (see Tvedt M.W. and T. Young (2007).

ment of, its ecological value. At the same time, awareness of the loss of biodiversity increased⁷. These developments constituted the basis for the call for a sustainable use of natural resources and the creation of incentives to this end.⁸

At the same time, and in the period preceding the conclusion of the Convention of Biological Diversity, awareness rose of the commercial value of biodiversity. The options provided by the new biotechnologies, in particular by genetic engineering, were becoming apparent to a wider public. Concurrently, progress made in research technology brought about profound changes in agricultural and pharmaceutical research. This opened up new fields of utilisation and exploitation of plant and animal genetic resources and simultaneously deepened the call for its conservation⁹. This went hand in hand with insight into the uneven distribution of biodiversity across the globe: countries rich in diversity and centres of origin of domesticated plant genetic resources (PGR) are to a great percentage located in the warmer and wetter climates of the “southern” countries whereas the “northern”, industrialised countries have at their disposal the technology to make optimal use of this diversity.

The so-called “bioprospecting” – searching for useful organic compounds in nature – is one of the cornerstones of the ensuing activities and debates. Active compounds were patented and developed into medically and economically successful drugs. Such bioprospecting activity is even more successful if traditional knowledge of indigenous communities is involved.¹⁰ Flagship events were, for instance, the much-cited publication of the story of ‘Rosy Periwinkle’ in *New Scientist* in 1992¹¹, and the famous bioprospecting contract between the Costa Rican conser-

vation institute and the pharmaceutical company Merck¹².

In this way, the legend of the ‘Green Gold’ was born, along with the idea that by sharing the benefits resulting from bioprospecting and the successful development of the found substances into novel products, incentives for the conservation of biodiversity could be created.

2.2 *Development in the community of states: Strands*

In the community of states, several developments that are relevant to our question took place. It is argued that an important development, having effect up to the present time, was the increasing independence of the former colonies after World War II. This development is characterised by some authors as “world revolution”¹³. This brought about a host of new players on the international scenery, representing a novel set of interests that were articulated in a series of declarations of the UN General Assembly. The UN Declaration on the Granting of Independence to Colonial Countries and Peoples – referred to by the scholar Gros Espiell as “momentous and historic” and “the Magna Charta of decolonization”¹⁴ – claimed the right to the self-determination of all peoples (Para 2) and reaffirmed their right to freely dispose of their natural wealth and resources (Recital Para 9). In 1962, this was followed by the UNGA Declaration of Permanent Sovereignty Over Natural Resources¹⁵; which stated the “free and beneficial exercise of the sovereignty of peoples and nations over their natural resources” (Para 5) in order to further the economic independence and development of the states.

Then, also as a consequence of decolonisation, and in reaction to the unequal distribution of means of production and the protectionist trade policies of the industrialised states, developing countries advocated a New International Economic Order in 1972¹⁶. This declaration aimed at – inter alia – fostering sovereign equality, namely with regard to the national sovereignty over natural resources; the participatory equality of developing countries in international economic

⁷ Wilson coined the term “biodiversity” in his book ‘Diversity of Life’ (1992). He understood diversity as an abstract concept, describing the variability of life in all forms, levels and combinations. (TK, p. 4).

⁸ See, for example, Biber-Klemm and Berglas (2006), pp. 27-34, which includes indications for further literature, in particular OECD (1999) Handbook of Incentive Measures for Biodiversity. OECD Paris.

⁹ See, for example, Biber-Klemm and Berglas (2006), pp. 7-10 and 21, 22; indicating further literature.

¹⁰ If neither the consent of the involved people for the exploration and patenting was asked for nor the resulting benefits shared, “biopiracy” is spoken of, meaning illegitimate access to and utilisation of genetic resources and associated knowledge. However, this is not a legal or well-defined term. Compare the Commission on Intellectual Property Rights, p. 74 and pp. 76-78 which provides examples of controversial patents. Even after having concluded the CBD, “biopiracy” is still a problem. See, for example, Peru’s actions against biopiracy, documented in Doc. WIPO/GRTKF/IC/8/12, May 30 2005; and the related website of the Peruvian Initiative for the Prevention of Biopiracy: <http://www.biopirateria.org/en/documentos.php>.

¹¹ As cited in Rosendal (2006, p. 431). The flower grows in Madagascar. From its active compounds, the pharmaceutical company Lilly developed drugs against childhood leukaemia. It is said that the drug generated US \$ 200 billion per year. The story is much debated – however for our purposes it is not important whether it is true or not; in our context, its effect on the players in the debates are what count.

¹² See, for example, Coughlin (1993).

¹³ E McWhinney (1981), quoted by W. Tieya (1983) in Macdonald and Johnston (1983).

¹⁴ United Nations General Assembly resolution of 15 December 1960 (UN GA Res. 1514 (XV)).

¹⁵ United Nations General Assembly resolution of 14 December 1962 (UN GA Res. 1803 (XVII)).

¹⁶ Declaration on the Establishment of a New International Economic Order; General Assembly, Sixth Special Session, Resolution No. 3201 (S-VI); Programme of Action on the Establishment of a New International Economic Order (Resolution No. 3202 (S-VI)), both 1 May 1974. Charter of Economic Rights and Duties of States, UN General Assembly, 29th Session, Resolution No. 3281 (XXIX), (12 December 1974).

relations; and the principle of the right of every state to benefit from science and technology¹⁷.

In parallel with the increasing self-consciousness of the “new” states, the awareness and self-perception of indigenous and tribal peoples also changed. The first Convention on Indigenous and Tribal Populations (No. 107)¹⁸ was the first international treaty ever to be adopted on this subject. It still followed an integrationist approach. This changed with the growing awareness of indigenous peoples in the 1960s and 1970s, and their increasing self organisation and participation at international level. In 1989, the second convention was adopted (No. 169). A premise that is important for our context was the right of these peoples to participate in the planning and implementation of measures that affect them,¹⁹ a formula which later found its way into other legal instruments related to indigenous, tribal or local communities.

Hence, these developments lead to a host of new actors in the community of states, but also to new intra- and transnational players; with postulates regarding their independence and sovereignty, also – and importantly – vis-à-vis the exploitation of their natural resources.

2.3 Paradigm shift in the discipline of Plant Genetic Resources (PGR)

In the legal order regarding (plant) genetic resources, a “fundamental normative shift towards enclosure” (Raustiala, Victor 2004:282) took place. Historically, the PGR were governed by open-access systems. This means that there were no property rights in genetic resources, and states did not principally bar access to them. With regards to plant genetic resources for food and agriculture (PGRFA), for which interdependence and a need for free exchange exist, this system was labelled “the heritage of mankind”²⁰. As for wild resources, to my knowledge, their legal character was not even discussed. They were just there and could be taken by whoever bothered to collect them.

There are two strands of development leading to the enclosure; the creation of – private – intellectual property rights first on PGRFA and then also to innovations regarding plant genetic resources in general, and second the attribution of biological/genetic resources to the sovereign state.

It started in plant breeding, in which the rise of profit-orientated breeding seed companies, and breeding based on expensive R&D, created the first pressures with regard to providing intellectual property protection that worked in plant genetic resources. In responding to the specific needs of industrial plant breeding, this process led first to the creation of the Plant Breeders Rights in the UPOV²¹ system in 1961²². Since then, these rights have continuously been strengthened²³, and property rights for new breeds of plants have tended to become more exclusive. Technological changes, in particular biotechnology and genetic engineering enhanced this process. Raustiala and Victor (2003, p. 11) speak of a major shock to the common heritage-open access system by virtue of the invention of the recombinant DNA technology. In the revised UPOV (1991), double protection by plant breeders rights and patent protection became possible, and the exemption of the “farmers’ privilege” became a mere option for legislation on national level. In the USA, it was decided in 1985 through the *Ex Parte Hibberd* decision²⁴ that plants (e.g. plants per se, seeds and plant parts) are patentable under the General Utility Patent Act 29²⁵ (Temmerman, 2007).²⁶

Biological resources were now perceived as a valuable resource, analogous to the resources meant by the earlier declaration on permanent sovereignty over natural resources²⁷. In summary it can be stated that the difference between raw and worked materials increased in this process. Whereas raw materials remained freely accessible, worked materials became more and more protected and accessible only in paying a higher price. This explains why, from the beginning, the ABS system was and is closely related to intellectual property rights.

3 The CBD and its system on ABS

If we summarise these strands of development, the following characteristics appear: Hand in hand with the evolution of the new bio-technologies, and with

¹⁷ From: Progressive Development of the Principles and norms of International law Relating to the New International Economic Order, Report by the Secretary General, 1, 28th UN Doc A/39/504/Add 1 (23 October 1984).

¹⁸ A Convention of the International Labour Organization, 1957. <http://www.ilo.org/ilolex/cgi-lex/convide.pl?C107> (accessed on 21 January 2008).

¹⁹ See www.ilo.org/public/english/indigenous/backgroun/index.htm (accessed on 15 January 2008).

²⁰ See International Undertaking on Plant Genetic Resources for Food and Agriculture, Art. 1 <ftp://ftp.fao.org/ag/cgrfa/iu/iutextE.pdf> (accessed on 22 January 2008).

²¹ International Union for the Protection of New Varieties of Plants (UPOV)

²² In force since 10 August 1968.

²³ See, for example, Ph. Cullet in Biber-Klemm et al. (2006) pp. 80-82.

²⁴ United States Board of Patent Appeals, *Ex Parte Hibberd*, (1985) 227 USPQ 443.

²⁵ United States Code, Title 35 (Patents), § 100-371 (US Patent Act), available at: http://www.wipo.int/clea/docs_new/pdf/en/us/us007en.pdf

²⁶ The negotiations regarding access to domesticated plant genetic resources – the plant genetic resources for food and agriculture, have been delegated by the CBD Contracting Parties to the FAO Commission on Genetic Resources for Food and Agriculture; that had already shepherded the negotiations on the International Undertaking on Plant Genetic Resources for Food and Agriculture (IU) which now needed adaptation to the new CBD principles. After seven years of negotiations, the International Treaty of PGRFA was concluded. It created a special system on ABS, the Multilateral System on Access and Benefit Sharing.

²⁷ See footnote 15.

the increasing scarcity of biological resources, their value increases. This leads first to the strengthening of their enclosure, either through limiting free access by the sovereignty of the state, or by private property rights, and secondly to growing trade interest and commodification of the resources. This evolution takes place on the background of the economic postulates of the “new” sovereign states and the increasing self-consciousness and political awareness of Indigenous Peoples. The resulting postulates are (a little simplified), on the one hand, conservation and sustainable use of biological resources, and, on the other hand, the provision of economic means to this end.

Against this background the negotiations of the CBD took place. All the described strands were taken up in the convention. Accordingly, the negotiation partners set out with different agendas, backed up with contrasting open or hidden interests. The “users” of biodiversity set out with the goal of putting biodiversity conservation onto the international agenda and obliging the owner countries to take measures to this end. In turn, the goal of the owner countries was to ensure that user countries share the responsibility and cost of conservation, i.e. to be compensated by the developed world for the cost of conservation (Rosendal, 2000, p. 92).

As a result, one of the main features of the CBD is that it combines the aim of conserving biological diversity with economic objectives. The goals are the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising from the utilisation of genetic resources (Art. 2).

With regard to TK, the contracting parties are obliged to respect, preserve and maintain the knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles which are relevant for the conservation and sustainable use of biological diversity.

The system on access and benefit sharing (ABS) fulfils the third goal: to create balanced rights and obligations for providers and users of genetic resources: The states, now explicitly declared to have the sovereignty also over all their biological resources, have the obligation to create conditions to facilitate access to genetic resources (Art. 15.2). This obligation is matched by the duty of the users, to take measures to assure the sharing of benefits arising from the use of the genetic resources (Art. 15.7). Thus, it is a matter of the joint regulation of access to genetic resources and the sharing of benefits arising from their use by the researchers or companies from user countries and the representatives of the states in which the genetic resources have been accessed. The ABS system is applicable similarly to the TK of indigenous and local communities associated to genetic resources.

Thus, the regime of access to genetic resources as laid down by the CBD is based on a contractual approach.

It encompasses the three elements of ‘prior informed consent’, ‘mutually agreed terms’ and the ‘fair and equitable sharing of benefits’ (Art. 15).

It is important to note that the authority to determine access to genetic resources is vested in the state and subject to national legislation. The convention only entitles the providing state, and does not confer any rights to the individual holders of the PGR. The same is true of the regulation of issues regarding access to TK associated with PGR.

Hence, at least on this abstract level, the postulates of the political processes described above have found an answer (in theory). However, the concretisation and implementation of this system is a challenging endeavour.

The concept underlying ABS is deemed to be “one of the most novel and innovative legal concepts to be introduced to international law in the last century”²⁸. But what is so new in this system?

There are two elements that are novel to the international legal order: first the specific qualities of genetic resources, which, having the characteristics of an informational value, add an entirely new dimension to the right to natural resources. The CBD system creates sovereign rights in genetic information – so this is a priori a right to an immaterial value, moreover an immaterial value which has self-propagating characteristics. The application of this concept in the international and national legal order is still in its infancy.²⁹

And secondly, it is the first time that the concept of sharing the benefits of the exploitation of natural resources is linked to the exercise of the sovereign rights of the states. A similar system has been created in the United Nations Convention on the Law of the Sea (UNCLOS) regarding access to resources situated in the deep seabed³⁰.

This regulation differs in several ways from the CBD ABS system: First, the resources of the deep seabed³¹ are declared to be the “common heritage of mankind” (Art. 136); secondly, the competence to decide over the exploitation (access) of the resources is vested in an international body, the International Seabed Authority, a body composed of representatives of all Contracting Parties (Art. 156). The Authority is obliged to “provide for the equitable sharing of financial and other economic benefits derived from activities in the Area through any appropriate mechanism, on a non-discriminatory basis ...” (Art. 140.2).

²⁸ Tvedt M.W. and T. Young (2007), p. 5.

²⁹ For ample information on the question of rights to genetic resources and traditional knowledge, see Biber-Klemm and Cottier (2006).

³⁰ 1982. ILM 21 (1982), 1261. Albeit up to now this system seems not to have been applied in practice.

³¹ The seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction (Art. 1 a).

Thirdly, the term “resources” is limited to mineral resources³².

In turn, in the Declaration on Permanent Sovereignty over Natural Resources³³ it is postulated that profits derived from exploration, development and disposition of resources (based on imported capital) are to be shared in the proportions freely agreed upon by investors and the recipient state, due care being taken to ensure that there is no impairment, for any reason, of that state's sovereignty over its natural wealth and resources (Para 2 and 3). The major difference here is that the resources (probably mostly mineral resources) are exploited in the country itself, whereas in the case of genetic resources and TK, the resources and information are exported for research and development in an industrialised country in the majority of cases.

These differences – the authority to decide on the access to the resources vested in each sovereign state, and the fact that the exploitation of the information takes place outside this state in most cases – are important elements of the specific challenges of the implementation of the ABS system.

4 The challenges of the system

From all this follows, that the ABS system is the result of a multifaceted, intertwined processes, and is in itself a complex construct. Several resulting factors contribute to the specific challenges in implementing the ABS-system.

4.1 The definitions

As is often the case in international conventions that are based on a compromise, the wording remains vague, its interpretation being referred to a further stage in the development of the convention. This is true of the CBD, too; a basic problem is that the definition of key terms still is not clear, and it seems to be difficult to reach a consensus.³⁴ In particular all elements of the ABS system - i.e. “genetic resources”, “access”, “utilisation” ,and last but not least “traditional knowledge of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity” - lack a legal definition or are only defined in a very broad, general manner.³⁵

4.2 The stakeholders and their interests

In principle, the CBD as an international convention is an obligation between the state parties. However, the ABS system implies both, public and private actions, and is based on the concept of both, sovereign and individual rights to genetic resources. Therefore a variety of stakeholders are involved in the implementation on the national level. In the user countries, depending on the interpretation of the term “access” and “genetic resources” different types of use are involved. As a result, academic researchers, for example, even those doing basic research, might be included; then commercial bioprospectors (middlemen); and some direct involvement of industrial companies. The common interest of these stakeholder groups is to have easy access and legal security for the utilisation of the resources. Provider-countries in turn seem to have problems defining ownership over genetic resources. This is especially true since the position of holders of traditional knowledge associated to the resources and local communities has been strengthened in the Bonn Guidelines³⁶. The main interest of the provider countries is the control of use; the prevention of illicit access and use; and the participation in (economic) benefits.

4.3 Traditional Knowledge associated to genetic resources

The inclusion of traditional knowledge in the subject matter of the CBD (and explicitly in the ABS system according to the Bonn Guidelines) adds to the complexity of the ABS system. Whereas ownership over genetic resources can theoretically be allocated to the state (as in, for example, the Andean Pact³⁷), this is unthinkable for TK.

However, the property rights to TK are far from clear. From the point of view of the existing system of intellectual property rights (IPRs), TK is – as a rule – considered to be in the public domain (if not protected by trade secrets). In view of the holders of the knowledge, it is considered to be in the ownership of the communities, or, more seldomly, of individuals who are its custodians. Further, rights of “indigenous and local communities embodying traditional lifestyles

³² Art. 133 a) UNCLOS (“resources” means all solid, liquid or gaseous mineral resources in situ in the Area at or beneath the seabed, including polymetallic nodules;)

³³ Resolution of the General Assembly of the UN, G.A. res. 1803(XVII), U.N. Doc A/5217 (1962); see footnote 13.

³⁴ See the example of genetic resources and derivatives in footnote 14.

³⁵ “Genetic resources” means genetic material of actual or potential value; “Genetic material” being any material of plant, animal, microbial or other origin containing functional units of heredity. The question is: How this definition can be narrowed? Could “value” be defined by the use made of “genetic resources” (i.e. only for biotechnological purposes)? The problem here is that biotechnological research can also be conducted on biological samples collected and exported for other purposes; “functional units of heredity” ex-

cludes only material for which the genetic information is no longer functional. However the question here is: What does “functionality” mean? Is this to be understood in an economical sense (i.e. DNA is easily extractable for economic use) or in a scientific sense (DNA is still extractable in spite of the difficulties)? “Utilisation of genetic resources”: Does this include only research and R&D for commercial purposes, or also for academic ends – and can these two types of research be distinguished in such a basic way? With regard to “access”: Is access a case of taking the resources out of their natural habitat (or only going there and looking at them?) or is access only the act of taking the resources out of the country providing them?

³⁶ UNEP/CBD/COP/6/20; Decision VI/24.

³⁷ Andean Community Commission, Decision 391: Common Regime on Access to Genetic Resources, Caracas, Venezuela, 2 June 1996, <http://www.comunidadandina.org/ingles/normativa/D391e.htm> (accessed on 23 April 2008).?

relevant for the conservation and sustainable use of biological diversity” to their TK are closely connected to the genetic (biological) resources, and therefore correlated with the questions of (sovereignty over) territory, self-determination, and participation in decision making.

4.4 *The problem of control*

Even if the resources are exported with relevant permits, several specific problems arise: first, the planned utilisation of the resource depends uniquely on the *intention* of the purchaser (basic research, applied research, R&D) and therefore cannot be controlled at the moment of the exportation. Also, the prospective use to be made of the resources may not be clear from the beginning. Secondly, the control of the use made of the resources is difficult once they have left the country. Thirdly, even if such control is possible and effectuated³⁸, the reach of national legislation is limited; and the contractual system provides limited means for enforcement.

The difficulties described above, in particular the problems of control of the use made of genetic resources, lead the provider countries to adopt defensive and prohibitive access legislation to prevent illegitimate use. Thus, the implementation problems, and the lack of control measures on the user side, lead to problems relating to access³⁹. Stringent and efficient control measures for the recipients and users of the information would enable providers to streamline their legislation in a more user-friendly way. Further, it can be argued that equity arguments demand that the burden of regulating ABS be borne by both providers and users of genetic resources.

5 Aspects of present debates regarding the ABS system

Control over use made of genetic resources and TK is one of the most challenging issues to be resolved in the International Regime. In the debates of the COP, two instruments to this end are discussed: the certificate of origin/source/legal provenance (certificate of origin) and the disclosure of source in the patent applications.

5.1 *Certificate of origin*

The CBD COP mandated a group of technical experts to discuss options for introducing an international certificate of origin/source/legal provenance for genetic material. The certificate would serve as a tracing mechanism to ensure transparency in the flow of such resources as type of 'passport' or 'permit' that would accompany a genetic resource along the whole chain

of the ABS process. The certificate could be verified at different points, including once the genetic resource has left the provider country.⁴⁰

There are fears of the various stakeholder groups that such a system complicates the procedures, is not cost-efficient, and that the technical feasibility for DCs might be questionable. However, there might be parallels and possible synergies (in methodology) with the Material Transfer Agreements of the ITPGRFA and other tracking systems (e.g. CITES). It is suggested that analysis of the existing instruments in view of the creation of a certificate of origin is also worthwhile. In addition, the option of a centralised, global registration system ought to be assessed.

5.2 *Disclosure of source in the patent application*

In the patent procedure, the questions concerning novelty, and more particularly the inventive step, are dealt with in two instances: in the examination procedure, and through subsequent judicial review mechanisms. Current systemic insufficiencies of law and practice pertaining to international prior art searches are causing a shift from prior *ex officio* patent examination to subsequent, party-initiated judicial review procedures. From the perspective of holders of traditional knowledge related to plant genetic resources, challenging a patent may turn out to be a very costly undertaking. It is argued that a balance between the interests of industrial research and the interests of providers must be found in order to enhance the legitimacy of the system of intellectual property rights and of the international trading system.

There are different proposals for integrating the disclosure of source in the patent application: Is there to be a mandatory or facultative disclosure of origin? In which treaty regime is the obligation to be integrated? What should be the scope of the disclosure: Declaration of Source/Origin or proof of PIC, benefit sharing? What is the trigger for the disclosure requirement and what are the legal consequences?

Also, one must be aware that this instrument only covers a very small (albeit probably economically important) part of the resources used for economic ends. There exists an important amount of “traditional” products in the lifestyle, wellness, and food additive sectors that make use of traditional knowledge (even as a marketing argument) but are not patented. If the raw material for these products is exported from producer countries, it would not fall under the ABS system, in contrast to the associated TK. There are no data on this market and no analyses have yet been made as to the options to control this utilisation of TK.

³⁸ See, for example, the Peruvian Action against biopiracy WIPO/GRTKF/IC/9/10, 15 March 2006.

³⁹ Biber-Klemm in Biber-Klemm and Cottier (2005) Rights to Plant Genetic Resources and Traditional Knowledge, pp. 298/299.

⁴⁰ Bridges, TradeBioRes, Vol. 7, No. 2, 2 February 2007.

6 Conclusions

The contractual ABS system is highly complex and diverse, covering various subject matters, a great variety of stakeholders, and different systems for ruling ABS. The corresponding provisions regulating ABS are directed to the Contracting Parties, and their implementation is explicitly subject to national legislation. Thus, the details for the operation of the system - such as the determination of the stakeholders to be involved in the negotiations, the procedures, and the sharing of benefits between the stakeholders of the providing countries - mostly need to be defined on the national level, the Bonn Guidelines giving some interpretative assistance to this end.

The CBD system, as it stands, can be used as the basis upon which to establish national frameworks to facilitate bilateral contractual agreements negotiated between the involved stakeholders. Whether it will ever fulfil its rationale - to provide for respectful, equitable and fair exchange of the comparative advantages (biological resources on the one and technology on the other hand) - and to create incentives and economic means for the conservation and sustainable use of biological resources will strongly depend on the concretisation and implementation of the system on international and national levels.

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Focus of the forthcoming issue :

The next issue of the *elni Review* will focus on Environmental Impact Assessment and the Revision of the IPPC Directive.

Manuscripts should be submitted as files by email to the Editors using an IBM-compatible word processing system.

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The institute's mission is to analyse and evaluate current and future environmental problems, to point out risks, and to develop and implement problem-solving strategies and measures. In doing so, the Öko-Institut follows the guiding principle of sustainable development.

The institute's activities are organized in Divisions - Chemistry, Energy & Climate Protection, Genetic Engineering, Sustainable Products & Material Flows, Nuclear Engineering & Plant Safety, and Environmental Law.

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The University of Applied Sciences in Bingen was founded in 1897. It is a practiceorientated academic institution and runs courses in electrical engineering, computer science for engineering, mechanical engineering, business management for engineering, process engineering, biotechnology, agriculture, international agricultural trade and in environmental engineering.

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The Society for Institutional Analysis was established in 1998. It is located at the University of Applied Sciences in Darmstadt and the University of Göttingen, both Germany.

The sofia research group aims to support regulatory choice at every level of public legislative bodies (EC, national or regional). It also analyses and improves the strategy of public and private organizations.

The sofia team is multidisciplinary: Lawyers and economists are collaborating with engineers as well as social and natural scientists. The theoretical basis is the interdisciplinary behaviour model of *homo oeconomicus institutionalis*, considering the formal (e.g. laws and contracts) and informal (e.g. rules of fairness) institutional context of individual behaviour.

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elni

In many countries lawyers are working on aspects of environmental law, often as part of environmental initiatives and organisations or as legislators. However, they generally have limited contact with other lawyers abroad, in spite of the fact that such contact and communication is vital for the successful and effective implementation of environmental law.

Therefore, a group of lawyers from various countries decided to initiate the Environmental Law Network International (elni) in 1990 to promote international communication and cooperation worldwide. Since then, elni has grown to a network of about 350 individuals and organisations from all over the world.

Since 2005 elni is a registered non-profit association under German Law.

elni coordinates a number of different activities in order to facilitate the communication and connections of those interested in environmental law around the world.

Coordinating Bureau

The Coordinating Bureau was originally set up at and financed by Öko-Institut in Darmstadt, Germany, a non-governmental, non-profit research institute.

Three organisations currently share the organisational work of the network: Öko-Institut, IESAR at the University of Applied Sciences in Bingen and sofia, the Society for Institutional Analysis, located at the University of Darmstadt. The person of contact is Prof. Dr. Roller at IESAR, Bingen.

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The elni Review is a bi-annual, English language law review. It publishes articles on environmental law, focussing on European and international environmental law as well as recent developments in the EU Member States. It is published by Öko-Institut (the Institute for Applied Ecology), IESAR (the Institute for Environmental Studies and Applied Research, hosted by the University of Applied Sciences in Bingen) and sofia (the Society for Institutional Analysis, located at the University of Darmstadt). The Coordinating Bureau is currently hosted by the University of Bingen. elni encourages its members to submit articles to the Review in order to support and further the exchange and sharing of experiences with other members.

elni Conferences and Fora

elni conferences and fora are a core element of the network. They provide scientific input and the possibility for discussion on a relevant subject of environmental law and policy for international experts. The aim is to gather together scientists, policy makers and young researchers, providing them with the opportunity to exchange views and information as well as to develop new perspectives.

The aim of the elni fora initiative is to bring together, on a convivial basis and in a seminar-sized group, environmental lawyers living or working in the Brus-

sels area, who are interested in sharing and discussing views on specific topics related to environmental law and policies.

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