

Sustainable Biodiversity Law: Global Access, Local Benefits

A CISDL Legal Research Paper

Montreal, Dec 01, 2003

**By Kathryn Garforth, Research Fellows, Biodiversity Law, CISDL
And Jorge M. Cabrera, Lead Counsel, Biodiversity Law, CISDL**

Approved by: CISDL
Jorge Cabrera,
Kathryn Garforth (principal author)

Contact: Marie-Claire Cordonier Segger,

The Centre for International Sustainable Development Law (CISDL) is based in the McGill University Faculty of Law. Its mission is to promote sustainable societies and the protection of ecosystems by advancing the understanding, development and implementation of international sustainable development law. CISDL works in cooperation with the McGill School of the Environment, the Université de Montreal Faculty of Law, and the Université de Québec à Montreal. It has guidance from the three Montreal-based multilateral environmental accords (the NAFTA Commission for Environmental Cooperation, the UNEP Biodiversity Convention, and the Montreal Protocol multilateral fund), and is currently involved in two international research projects related to sustainable biodiversity law. CISDL is developing materials and capacity building support for the development of regulatory frameworks for the regional and domestic implementation of the new Cartagena Protocol on Biosafety. CISDL is also developing a research project on the benefits of an international regime on access to genetic resources and benefit sharing for local communities, in collaboration with partners in developing countries.

This document is printed on recycled paper.

Contact Information:

Chair of the CISDL International Board of Advisors:

*Prof. Peter Leuprecht, former Dean,
Faculty of Law, McGill University
3661 Peel Ave, Montreal
Quebec, Canada
Tel 001 514 398 6604
Fax 001 514 398 4659*

CISDL Biodiversity Law Research Programme:

*Prof. Jorge Medaglia Cabrera,
University of Costa Rica Law Faculty
Lead Counsel, CISDL, email : jcabrera@cisdl.org
Kathryn Garforth,
Research Fellow, CISDL, email : kgarforth@cisdl.org*

CISDL Directors:

*Marie-Claire C. Segger
Director, email: [HYPERLINK "mailto:MCSegger@iisd.ca"](mailto:HYPERLINKmailto:MCSegger@iisd.ca) MCSegger@iisd.ca / marieclaire@cisdl.org
Ashfaq Khalfan
Director, email: ashfaq@cisdl.org
Centre for International Sustainable Development Law
3661 Peel St.
Montreal, Quebec
H3A 1X1 Canada
Tel: 001 514 581 4984
Tel: 001 514 398 8918*

Sustainable Biodiversity Law: Global Access, Local Benefits

The Purpose, Nature and Scope of an International Regime on Access to Genetic Resources and Benefit-Sharing, and Potential Benefits for Local Communities

Montreal, December 1st, 2003

This working paper outlines the role of the *Convention on Biological Diversity*, as well as other national, regional, international and non-state initiatives in creating access to genetic resources and benefit-sharing (ABS) systems. The different regimes offer insights into the relationship between international sustainable development law and ABS. They also generate ideas for elements that should be included in an international regime on ABS, as proposed at the World Summit on Sustainable Development in 2002. As a preliminary result of this legal research, the CISDL suggests that such an international regime should have clear goals, and should be a combination of legally binding and non-binding mechanisms. This would provide the best potential for a system that adequately addresses the environmental, social and economic aspects of sustainable development.

1. Defining the Issue

Access to genetic resources and benefit-sharing incorporates all three strands of sustainable development law:

Environment: Genetic resources need to be protected both for their inherent value and also for their potential contributions to human well-being, particularly in the areas of natural heritage conservation, agriculture and medicine.

Society: Genetic resources do not exist in splendid isolation. They have been conserved, used, and developed by local and indigenous communities for centuries if not millennia. These groups often have unique knowledge of the resources. Their contributions can be very valuable and must be recognized and encouraged. Furthermore, human rights law protects both their rights to food and health as well as their right to share in scientific advancements and its benefits.

Economy: Research into, and commercialization of, genetic resources is necessary to feed a growing population and to treat new and re-emergent diseases. Intellectual property rights (IPRs) are a recognized component of commercial endeavors. They can contribute to the environmental and social aspects of international biodiversity sustainable development law by providing incentives for protection. The concern is, however, that IPRs will block access to genetic resources and will undervalue the input of local and indigenous communities.

2. Access to Genetic Resources and Benefit-Sharing (ABS) in the Convention on Biological Diversity

The *Convention on Biological Diversity* (CBD) attempts to weave together the three strands of sustainable development. It aims to use the economic incentives created by the potential commercial value of genetic resources towards the conservation of these same resources. It also aims to create a framework for access to genetic resources and equitable benefit-sharing.

These goals are reflected in the objectives of the Convention as set out in article 1:

“The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and 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, taking into account all rights over those resources and to technologies, and by appropriate funding.”

The rest of the Convention elaborates on how these objectives should be achieved. Articles 8 and 15 are particularly important in laying the foundation for ABS.

Article 8, entitled ‘*In-situ* Conservation’, and specifically subsection j, has generated significant discussion in regards to the social aspect of ABS. It mandates the Contracting Parties to “as far as possible and as appropriate”, protect indigenous and local knowledge and innovations as well as encourage their use with the participation of, and benefit-sharing for, these communities. Article 15(1) recognizes state sovereignty over natural resources in the context of access to genetic resources.

This is very important as it allows states to control access to these resources, allowing for the possibility of profiting from providing access. It also constituted somewhat of a shift in international law. Previously, international law had held that plant genetic resources, at a minimum, were the common heritage of humanity. Under Article 15, access to genetic resources is to be on mutually agreed terms subject to prior informed consent. Article 15(7) also provides a framework for the implementation of the third objective of the Convention, namely fair and equitable sharing of benefits.

While it is beyond the scope of this brief to explore them in any detail, articles 16 to 21 of the Convention also relate to ABS. The articles on access to and transfer of technology and the handling of biotechnology and distribution of its benefits affect the interface of intellectual property rights and genetic diversity in particular.

3. Emergent Regimes on Access to Genetic Resources and Benefit-Sharing

The CBD was largely responsible for establishing that there **should** be access to genetic resources and benefit-sharing. Since then, the question has become **how** to have ABS. In the past eleven years, numerous national, regional, international and non-state regimes have been initiated to implement ABS. There is much to be learned from examining the successes and failures of these initiatives as we look towards the creation of an international regime.

National regimes

According to the Secretariat to the CBD, more than 50 countries have adopted, or are in the process of adopting, ABS policies and legislation. These policies generally take one of four forms:

Access provisions contained in general/framework environmental or sustainable development laws;

Access provisions in nature conservation or biodiversity laws;

Access provisions incorporated into existing laws through amendment; or

Specific access and benefit-sharing laws.

South Africa’s proposed *National Environmental Management: Biodiversity Bill* is one of the newest national initiatives on this issue, falling into the second category of the typology above. It includes provisions on ABS within the context of broader conservation legislation.

South Africa ranks as the third most biologically diverse country in the world and it has a long history of traditional and colonial use of its genetic resources. The country ratified the CBD in 1995 and the government is

now attempting to implement some of the Convention's principles through the Biodiversity Bill. The government sees the Bill as a way to strategically position South Africa as a player in the global bioprospecting arena.

The Bill is divided into ten chapters covering a range of issues including: the establishment of a National Biodiversity Institute to replace the current National Botanical Institute (chapter 2); a regulatory framework for integrated management of South Africa's biodiversity (chapter 3); and provisions on the prevention, control and elimination of alien species (chapter 5). Of most interest for the purposes of this brief is chapter 6 on 'Bioprospecting, Access and Benefit-Sharing'.

Chapter 6 is meant to regulate bioprospecting of genetic resources and "ensure the equitable sharing of benefits arising from the commercialisation through bioprospecting of traditional uses or knowledge of indigenous biological resources, with persons or communities practising these traditional uses or knowledge". Under section 77 of the Bill, bioprospectors must have entered into a benefit-sharing agreement in order to use traditional knowledge and these agreements must include certain information. Section 76 requires individuals to have a permit in order to engage in bioprospecting. Permits are regulated under chapter 7 of the Bill, which does not define any compulsory information requirements for a permit application.

The Biodiversity Bill has come under fire for its perceived lack of continuity from the policy indicated in the government's Biodiversity White Paper. Furthermore, the Bill does not meet some of the requirements of the CBD. It only requires benefit-sharing arrangements with holders of traditional knowledge, thus excluding other potential knowledge-holders. Section 77(2) prohibits holders of traditional knowledge from unreasonably refusing to enter into benefit-sharing agreements where the knowledge to be used is in the public domain and not protected by IPRs. This is essentially the opposite of the type of prior informed consent required under the CBD.

Regional regimes

One of the difficulties with national ABS regimes is that they may encourage a 'race to the bottom' mentality. If two neighbouring countries share similar genetic resources and one offers access at a lower cost than the other, the 'cheaper' state is likely to garner more interested customers, other things being equal. Various writers have discussed the creation of a 'biodiversity cartel' to circumvent this problem. While the feasibility of such a cartel on a worldwide scale seems dubious, some parts of the world have established regional regimes governing ABS. One such example is the efforts of the Andean countries.

The Andean Pact Decision 391 was the first subregional legislative measure on access to genetic resources and benefit-sharing in response to Article 15 of the CBD. The "Common Access Regime for Genetic Resources", also referred to as the Cartagena Agreement, is a "general norm that establishes applicable minimum rules in all the member states." Member states can, in turn, decide to regulate individually or to apply the law in a direct way. Decision 391 regulates access to genetic resources, the equitable distribution of benefits derived from their use, and recognizes the contributions of indigenous people through the access contracts.

In addition to establishing a framework for Member states to regulate access within their borders, Article 10 of Decision 391 requires Member states to "define mechanisms for cooperation on matters of mutual interest connected with the conservation and sustainable use of genetic resources and their derivatives and related intangible components." The Decision also requires Member states to notify each other immediately "of all applications, resolutions and authorizations of access and of the suspension and termination of contracts signed." Such notification must be given to the Board of the Andean Community on Genetic Resources, which is composed of representatives from each of the designated national authorities. The Andean Community has the task of ensuring that the Decision is carried out effectively and that appropriate mechanisms and information sharing systems are put in place to promote respect for the terms of the decision and the sustainable and equitable

use and access to genetic resources.

Decision 391 includes an effective framework for addressing the concerns of Member states, the scope of access to be contracted for, and the mechanisms necessary to ensure protection of the resources from the states' perspective; however it falls a little short of protecting the rights of indigenous or local communities. The Decision guarantees the direct participation of communities and local populations, and the distribution of benefits associated with genetic resources, but a legal vacuum exists since at the international level, intellectual property systems protect individual and private rights only. Indigenous organizations do not feel that the Common Regime values the knowledge associated with their resources. It is felt that by separating the "tangible component" of genetic resources (plants, animals, microorganisms) from the intangible component (indigenous knowledge) the Decision is excluding the indigenous communities from an important step in the process of determining access. The indigenous communities feel that local organizations in whose territories resources are often located, and who are guardians of associated knowledge, should be parties to the initial contract to access genetic resources, not just in determining which activities will be permitted in the exploitation of the resource. The need to integrate the tangible and intangible components of genetic resources is at the core of this debate.

Existing international regimes

As will be discussed below, the *Plan of Implementation of the World Summit on Sustainable Development* suggested the creation of a multilateral regime on ABS. Apart from this recommendation, the only other legally-binding multilateral instrument on issue is the Food and Agriculture Organization's *International Treaty on Plant Genetic Resources for Food and Agriculture*.

The predecessor to the Treaty on Plant Genetic Resources was the *International Undertaking on Plant Genetic Resources*, a non-legally binding resolution of the Food and Agriculture Organization (FAO) that was passed in 1983 and amended three times between 1989 and 1991. In 1993, in light of the CBD, the FAO began negotiations to turn the International Undertaking into a legally binding treaty. These negotiations were successfully completed in November 2001 resulting in the Treaty on Plant Genetic Resources, which will come into effect once the 40th instrument of ratification is received. The Treaty is thus currently not in force but it is helpful nonetheless to examine some of its provisions.

The objectives of the Treaty are contained in Article 1:

“the conservation and sustainable use of plant genetic resources for food and agriculture and the fair and equitable sharing of the benefits arising out of their use, in harmony with the Convention on Biological Diversity, for sustainable agriculture and food security.”

The centerpiece of the Treaty is “a ‘multilateral system for access and benefit-sharing’, which for certain categories of PGRFA ... guarantees facilitated access in return for benefit-sharing”. In establishing the multilateral system, countries had to be careful not to undermine the sovereign rights of states over their natural resources as enshrined in article 15 of the CBD. Article 10 of the Treaty achieves this by basing the existence of the multilateral system on the exercise of sovereign rights.

The multilateral system created by the Treaty only covers, as the name suggests, plant genetic resources for food and agriculture (PGRFA). Furthermore, the system includes only those species of PGRFA listed in Annex I of the Treaty.

This is because certain countries that are generally rich in biodiversity – even if not particularly so in PGRFA – wanted to limit the application of the multilateral system, thereby leaving the potential for bilateral arrangements under Article 15 of the CBD to be applied for all other plant genetic resources, including medicinal plants and others that may have potential value under bilateral deals.

Thirty-five species are listed in the annex, including most of the major food crops. In addition, under Article 11.2,

only those genetic resources (of the species listed in the annex) that “are under the management and control of the Contracting Parties and in the public domain” are a mandatory part of the multilateral system. All other holders of PGRFA are invited to include their resources in the system.

Article 12 of the Treaty governs terms of access to the genetic resources covered in Annex I. Access is to be provided to other contracting parties as well as to legal and natural persons under their jurisdiction. State parties should provide facilitated access, which is subject to a number of conditions in Article 12.3. These conditions include, *inter alia*, that facilitated access should be free or with only minimal cost to cover expenses, and that access must respect existing property rights – both intellectual and otherwise. Article 13 addresses the sharing of benefits arising from the use of the PGRFA in the multilateral system. Benefits are to “be shared fairly and equitably through ... the exchange of information, access to and transfer of technology, capacity building and the sharing of benefits arising from commercialization”. Article 13 goes on to provide more detail on what each of these mechanisms entails.

The final element to be discussed is the role of IPRs in the multilateral system. This was one of the most contentious issues during the negotiations. All parties agreed that IPRs should not be applied to the resources as received from the multilateral system. The difficult part was whether IPRs should be available for ‘components’ or ‘derivatives’ of PGRFA from the multilateral system. Developing countries were willing to agree to IPRs on derivatives, e.g. new plant varieties derived from the resources obtained from the system, but not on parts or components, e.g. genes or proteins. The solution was to use vague language in discussing the relationship between IPRs and the PGRFA in the multilateral system paving the way for conflicts of interpretation in the future.

Non-state initiatives

Apart from the state-led regimes, there are numerous ABS efforts initiated by universities, corporations, civil society, and other international organizations. One of the largest of these regimes is that of the Consultative Group on International Agricultural Research (CGIAR) and its International Agriculture Research Centres (IARCs). The work of this organization points to another problem area for ABS regimes: how to manage access to genetic resources and benefit sharing for those resources that are conserved *ex situ*.

CGIAR is a fairly informal body, created in 1971 at the instigation of the Ford and Rockefeller Foundations and now funded by various states, corporations, multilateral agencies such as the World Bank, and private foundations. There are 16 IARCs scattered about the globe and while the CGIAR is the central coordinating body, each of the IARCs operates largely independently. Eleven of the IARCS also have genebanks. The geographic origins of much of the material in the genebanks is unknown but it is safe to say that the state where the IARC is located is not the same as the state of origin for much of the germplasm. The other relevant feature of the IARCs is that the material in the genebanks is available for use by non-IARC scientists. This has created difficulties in recent years with accusations that other researchers have attempted to obtain intellectual property rights over material obtained from an IARC genebank.

The features of CGIAR and the IARCs raise a variety of questions. On what terms should access to the genetic material in the IARC genebanks be granted? Should IPRs on the material be allowed? If yes, in what form, i.e. on whole, unaltered organisms obtained from an IARC, on parts thereof (genes, proteins, etc.), or on derivatives therefrom? How should the benefits of any use of the genetic resources be shared with the state or community that first provided them? CGIAR and the IARCs have attempted to resolve these problems through a variety of means.

First of all it is important to note that the CBD only applies to genetic resources collected in accordance with the Convention’s provisions. Given the much longer history of the IARCs than the CBD, very few of the resources

in the IARC genebanks fall within the purview of the Convention. Instead, CGIAR and the IARCs have had to develop their own solutions.

The first big step was the 1994 agreements between the individual IARCs and the FAO placing the bulk of the Centres' germplasm under the auspices of the FAO to be held "in trust for the benefit of the international community". These Trust Agreements included provisions that the Centres would not claim legal ownership of the germplasm nor seek IPRs over the germplasm or related information. Access to the genetic resources is provided under Article 9 and where this involves transfer of the resources or related information to outside parties, the Centres must ensure that these parties are bound by the same restrictions on ownership and IPRs.

The Centres provide access to the resources in their genebanks via Material Transfer Agreements (MTAs). In 1998, CGIAR and the Centres developed a standard MTA which includes a reiteration of Article 3(b) on ownership and IPRs from the Trust Agreements. The MTA is included on the packaging accompanying the resources sent to a third party and, according to the MTA, "acceptance of the material constitutes acceptance of the terms of this Agreement". The MTA does not, however, prevent the recipient from applying for IPRs on parts of the material or derivatives therefrom, as the MTA only applies to the germplasm as received from the Centre.

The Trust Agreements with the FAO were to be in accordance with the International Undertaking. When the Treaty on Plant Genetic Resources replaced the International Undertaking, it included provisions accommodating the Trust Agreements. Article 15.1 calls upon the IARCs to sign agreements with the Governing Body of the Treaty that will supersede the Trust Agreements with the FAO. Once the Treaty enters into force, the IARCs will develop new MTAs to reflect the Treaty's provisions on facilitated access and benefit-sharing. Also, under Article 11.5, the Multilateral System created by the Treaty shall include the PGRFA in Annex I held by the IARCs.

This multiplicity of solutions to the CGIAR-IARC situation does not resolve all the questions but it does go a long way to putting the genetic resources of this institution on much more stable footing.

4. The Bonn Guidelines & the World Summit on Sustainable Development

In May 2000, the Parties to the CBD held their fifth conference. At that meeting, they "established the Ad Hoc Open-Ended Working Group on Access and Benefit-Sharing with the mandate to develop guidelines and other approaches for submission to the Conference of the Parties at its sixth meeting". The Ad Hoc Open-Ended Working Group met and developed the draft Bonn Guidelines on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising Out of Their Utilization. The Guidelines were adopted, with some amendments, at COP6.

As their name suggests, the Bonn Guidelines are meant to serve as a point of reference for policy, legislative and contractual matters related to ABS. In essence, they elaborate on the key provisions in the CBD on ABS, particularly those addressing mutually agreed terms and prior informed consent. The provisions on prior informed consent include basic principles and elements, the requirement that consent be granted by a competent authority, and that it be obtained through certain procedures and processes. Mutually agreed terms for benefit-sharing also includes certain basic requirements, although by its very nature, mutually agreed terms is a much more open and flexible concept.

The Bonn Guidelines were also referred to in the Plan of Implementation of the World Summit on Sustainable Development (WSSD). Chapter IV of the Plan of Implementation addresses the protection and management of the natural resource base of economic and social development. In particular, paragraph 44 focuses on biodiversity, and subsection (n) encourages the implementation and further development of the Guidelines. Subsection (o)

calls for action to “[n]egotiate 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”.

5. Suggestions for an International ABS Regime

What is the Problem? What are the Needs?

The WSSD’s call for an international regime on ABS begs the question ‘why is this necessary?’ The answer involves environmental, social, and economic factors – the three elements of sustainable development. From an environmental perspective, historical access to genetic resources has not always encouraged conservation of the resource or its ecosystem and at times has even led to the destruction of the resource. “In one particularly egregious example, the entire adult population of *Maytenus buchananni* – source of the anticancer compound maytansine – was harvested when a mission sponsored by the U.S. National Cancer Institute collected 27,215 kg in Kenya for testing in its drug development program”.

Socially-speaking, access to genetic resources has not always respected the human rights or ethical values of the source communities. So, for example, in the mid-nineteenth century, British botanical collectors smuggled cinchona seeds out of Peru, Bolivia and Ecuador despite local laws prohibiting the export of the seeds and plants. The rationale for these expeditions was that the native populations did not recognize the value of cinchona in treating malaria, that local bark-cutting practices were endangering the resource and that the English were undertaking a humanitarian mission by bringing cheap quinine to the world when, in fact, none of these were true. The British did succeed in securing their own supply of cinchona for their troops and civil servants in India and in undercutting the Andean monopoly on the product.

Finally, even though genetic resources are an important source for medical research, less than .0001% of the profits from pharmaceutical products based on traditional medicine have been returned “to the local plant users who assisted preservation, research and discovery efforts”. Without the economic incentive of benefit-sharing aiding in conservation efforts, genetic resources and biodiversity are that much more vulnerable to destruction.

These examples all pre-date 1992 and international agreement on the CBD and its provisions on ABS. As we have seen, these provisions have been further developed in the Bonn Guidelines. Still, the need for an international regime exists and for two possible reasons. The first argument is that such a regime is necessary because the Bonn Guidelines are a voluntary instrument. The proposed international regime should thus take the form of a legally-binding agreement as anything less is insufficient to adequately address the issue of access to genetic resources and benefit-sharing.

The second justification argues that while the Bonn Guidelines may be voluntary, the Convention on Biological Diversity is legally binding. The latter also contains provisions on ABS and so binding language on this issue does exist. From this perspective, an international regime can consist of both legally binding and non-binding measures. What is more important is that the regime be a complete system for addressing ABS and that the current combination of the CBD, the Bonn Guidelines, as well as the other types of measures discussed in the first section of this paper falls short of this goal.

We will focus on this second justification for an international regime. We will examine gaps in the existing ABS framework and what they suggest for the content of an international regime. We will highlight two case studies examining the impact of ABS on local communities and what they offer to the ABS dialogue. Finally, in light of all this, we will discuss the relationship between sustainable development law and the proposed international

regime.

Case Study #1

Gaps in the Current System

There are three main lacunae in the current access to genetic resources and benefit-sharing framework. The first gap is a lack of measures linking access to genetic resources with the sustainable use of biodiversity. The second gap is in addressing the third objective of the CBD, i.e. “the fair and equitable sharing of benefits arising out of the utilization of genetic resources”. Particular shortcomings here include the promotion of technology transfer and the obligations for user countries. The final area that is lacking is monitoring and remedies.

A. ABS and Sustainable Use of Biodiversity

Access to genetic resources and benefit-sharing obviously has great potential to encourage the conservation and sustainable use of these resources. The search for medically and agriculturally useful organisms could make alternate land uses less economical. If an area were to become a sustainable source for a genetic resource, it could mean the protection of the ecosystem rather than its conversion into a less diverse environment. The key is for an ABS system to make the link between ABS and sustainable use.

Article 1 of the CBD sets out the objectives of the Convention which include the sustainable use of the components of biodiversity as well as the sharing of benefits arising from the use of genetic resources by means such as appropriate access to these resources. The Bonn Guidelines echo these objectives:

11. The objectives of the Guidelines are the following:

- (a) To contribute to the conservation and sustainable use of biological diversity;
- (b) To provide Parties and stakeholders with a transparent framework to facilitate access to genetic resources and ensure fair and equitable sharing of benefits.

Article 11 of the CBD is a general provision requiring the Contracting Parties to take measures to act as incentives for the conservation and sustainable use of biodiversity. Article 15.2 goes further and requires the Contracting Parties to “endeavour to create conditions to facilitate access to genetic resources for environmentally sound uses.” Similarly, paragraph 51 of the Bonn Guidelines suggests incentive measures that could be helpful in the implementation of the Guidelines, including that:

The identification and mitigation or removal of perverse incentives, that may act as obstacles for conservation and sustainable use of biological diversity through access and benefit-sharing, should be considered; ...

The creation and use of markets should be considered as a way of efficiently achieving conservation and sustainable use of biological diversity.

Beyond these quite vague suggestions, however, there is nothing that explicitly points to the sorts of measures that countries can take to encourage the environmentally sound use of genetic resources through access to these same resources.

The link between conservation and access to genetic resources is very strong in both the case studies in this section. The projects in both Fiji and Suriname involved the creation of trust funds that have been used to support environmental protection and conservation projects. The bioprospecting project in Fiji went even further by incorporating resource management workshops into the project implementation. An international regime on ABS should build on these examples by exploring in more detail the types of measures that encourage conservation through access to genetic resources and benefit-sharing.

B. The Fair and Equitable Sharing of Benefits

Benefit-sharing under the CBD is based on principles of justice, namely fairness and equity. Article 15.7 of the Convention requires Contracting Parties to take measures

with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources. Such sharing shall be upon mutually agreed terms.

The provision also requires that the benefit-sharing measures be in accordance with the technology transfer provisions of the Convention, discussed below.

The Bonn Guidelines echo the principles of justice and fairness but also go quite a bit further in defining possible measures for benefit-sharing. These include paragraph 16(d) and its discussion of the obligations of Contracting Parties with users of genetic resources, paragraphs 45 through 50 on the relationship between mutually agreed terms and benefit-sharing, and finally, Appendix II which lists types of monetary and non-monetary benefits that can be included in benefit-sharing agreements.

Our focus here will be on the promotion of technology transfer and the benefit-sharing obligations of user countries.

(i) Technology Transfer

Technology transfer is not a new concept. It has been the subject of discussion and negotiation at the United Nations for over 25 years. Likewise, it is a recurring theme in multilateral environmental agreements, which tend to reiterate the need for technology transfer from developed to developing countries. For the most part, the promise of technology transfer has not been met.

Article 16 of the CBD addresses technology transfer. It recognizes “that both access to and transfer of technology among Contracting Parties are essential elements for the attainment of the objectives of this Convention”. The Contracting Parties are obliged to undertake “to provide and/or facilitate access for and transfer to other Contracting Parties of technologies that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant damage to the environment.” Transfer of technology to developing countries is also to be on fair and most favourable terms.

Technology transfer arises in a number of places in the Bonn Guidelines. It is listed as one of the objectives of the Guidelines, as part of fair and equitable benefit-sharing in the responsibilities of users of genetic resources, and as a type of non-monetary benefit that may be shared.

While the provisions on technology transfer in the CBD are quite lengthy, they leave the implementation of technology transfer up to the Contracting Parties. The international regime needs to go beyond these statements and explore more explicit guidelines to promote technology transfer, particularly of technologies relating to genetic resources. The two case studies illustrate different approaches to technology transfer. In Fiji, the Strathclyde Institute was unable to commit to technology transfer but did help to train local scientists. At the same time, community members received the training they need to better manage their local resources, which can be understood as a form of technology transfer. In Suriname, technology transfer was included as one facet of the project’s non-monetary benefit-sharing arrangements. The regime should also investigate more specific ways to resolve the technology transfer gap in the existing ABS framework to the benefit of developing countries. Finally, technology transfer in an international regime should relate to the first gap in the current ABS framework. It should help make the connection between access to genetic resources and the conservation and sustainable use thereof.

At the same time, it must be recognized that the existing technology transfer provisions in the CBD were some of the most contentious articles during the negotiations. At the Earth Summit in Rio de Janeiro in 1992, the U.S. refused to sign the Convention largely due to the technology transfer provisions in Article 16 and the fear that they would run roughshod over intellectual property rights. One of the benefits of an international regime on ABS that consists of a variety of binding and non-binding elements is that non-agreement on contentious issues like technology transfer need not result in the failure of the entire regime.

(ii) Benefit-Sharing Obligations of User Countries

Article 15.7 of the CBD places an obligation on all Contracting Parties to take measures with the aim of fair and equitable benefit-sharing. Paragraph 16(d) of the Bonn Guidelines elaborates on the responsibilities that Contracting Parties should consider acting upon in developing ABS pursuant to Article 15 of the CBD. These include developing ways of providing information to potential users of genetic resources on their obligations regarding access, measures to prevent use of genetic resources provided without the prior informed consent of the providing Party, and voluntary certification schemes.

Despite these obligations on all Contracting Parties, to date, countries that are providing access to their genetic resources have largely carried the burden of implementing ABS. These states, many of which are developing countries, have had to confront the difficulties of regulating a novel and complex subject. An international regime on ABS needs to close the gap between provider and user Parties in the implementation of ABS. It should place obligations on the user Parties to help develop, implement, and comply with measures on access to genetic resources and benefit-sharing.

One of the suggested obligations on user Parties is the certificate of disclosure of origin. This measure has already received a lot of attention and has been implemented by some states. As set out in paragraph 16(d)(ii) of the Bonn Guidelines, disclosure of origin involves “[m]easures to encourage the disclosure of the country of origin of the genetic resources and of the origin of traditional knowledge, innovations and practices of indigenous and local communities in applications for intellectual property rights”. This measure is important for monitoring access and use of genetic resources, and for deterring biopiracy but its potential for closing the gaps of the existing ABS framework are somewhat overstated. The difficulties that countries have experienced in the formation of their access laws, and thus in providing access to genetic resources, will not be solved through disclosure of origin obligations.

As stated above, what the international regime should include is clearly stipulated obligations for user countries. Only in this way will such a regime properly address the objectives of the CBD.

Case Study #2

Monitoring and Remedies

A common weakness of national ABS systems is a lack of monitoring to determine the impacts of bioprospecting projects. Part of the explanation for this weakness may lie in the third and final gap of the current ABS framework. The CBD does not contain any provisions specifically addressing the monitoring of ABS while paragraph 55 of the Bonn Guidelines discusses possible monitoring elements of national ABS systems.

Despite this gap in the existing international framework, the Fijian case study includes a very strong monitoring component, encompassing both biological and socioeconomic elements, that is entirely carried out by the community. The Suriname project includes formal and informal evaluations that involve activity reports and coordination of plans. An international regime should include the adoption of voluntary mechanisms such as codes of conduct and declarations of principles which would improve the possibility of monitoring and controlling the flow of genetic resources.

The international regime should equally attend to the need of source countries for legal remedies in cases of non-compliance. These remedies should be effective and within reach for the developing countries and their institutions. Article 14 of the CBD on 'Impact Assessment and Minimizing Adverse Impacts' provides that the Conference of the Parties will examine the issue of liability and redress for damage to biodiversity. This provision is not specific to ABS, however, and Article 15 on ABS makes no mention of Contracting Parties taking measures to regulate non-compliance of their ABS regimes. Paragraph 61 of the Bonn Guidelines goes further and allows Parties to take "effective and proportionate measures" for violations of their national ABS measures including those on prior informed consent and mutually agreed terms. To be effective, the remedies in an international regime should include facilitated access that will help level the playing field between the users and suppliers of genetic resources.

The Meaning of an International ABS Regime in International Sustainable Development Law

The Plan of Implementation from the WSSD points to the next step in the development of access to genetic resources and benefit-sharing – the creation of an international regime. If such a regime is to be consistent with the sustainable development objectives of the Convention on Biological Diversity then it "should aim to develop and enhance understanding of the inter-linkages between biodiversity-related policies and law at the national, regional and international levels". This means that an international regime must be integrative in at least two different ways – it must meld the social, environmental and economic goals of sustainable development, as well as integrating the lessons learned from the implementation of ABS efforts in different national, regional and international fora.

An international ABS regime that focuses on filling in the gaps of the existing ABS framework will go a long way to achieving this goal. The creation of such a regime will involve drawing on different local, national, regional and international experiences in implementing the current ABS framework, some of which we have highlighted here. By these means, we can learn from the successes and failures of access to genetic resources and benefit-sharing and develop more specific mechanisms to ensure continued progress in this field.

Cabrera, CISDL Lead Counsel for Biodiversity and Sustainable Development Law, Michelle Toering and Hari Suthan, former Officers of the CISDL Secretariat, as well as Ashfaq Khalfan and Marie-Claire Cordonier Segger, CISDL Directors.

5 June 1992, 31 I.L.M. 818 (entered into force 29 December 1993) [CBD].

See for example, the *International Covenant on Economic, Social and Cultural Rights*, 19 December 1966, 993 U.N.T.S. 3 at Articles 11 and 12 for food and health, respectively, and Article 27 of the United Nations *Universal Declaration of Human Rights*, GA Res. 217 (III), UN GAOR, 3d Sess., Supp. No. 13, UN Doc. A/810 (1948) for scientific advancements.

CBD, *supra* note 2.

See International Undertaking on Plant Genetic Resources, *infra* note 26 at Art. 1.

CBD *supra* note 2 at Art. 15, paragraphs 4 and 5.

CBD *supra* note 2 at Art. 16 and 19.

Secretariat for the Convention on Biological Diversity, *International Regime on Access and Benefit-Sharing: Proposals for an International Regime on Access and Benefit-sharing*, 7 January 2003, UN Doc., UNEP/CBD/MYPOW/6 at 8, online: Convention on Biological Diversity <<http://www.biodiv.org>> (date accessed: 10 March 2003) [*Proposals for an International Regime*].

Ibid. at 9.

South Africa, *National Environmental Management: Biodiversity Bill*, 8th draft, Gazette 24311, Notice 49, 24 January 2003, online: South African Government Online <<http://www.gov.za/bills/index>> (date accessed: 10 March 2003) [Biodiversity Bill]. One of the first measures was Costa Rica's creation of a National Biodiversity Institute (INBio) in 1989. See Jorge Cabrera Medaglia, *The Legal Frameworks and Public Policy on Access to Genetic Resources and Benefit Sharing: The Case of Costa Rica* (2002) Report prepared for the University of California, Davis. Other examples include the Republic of Korea, India and Bolivia, see *Proposals for an International Regime*, *supra* note 8 at 9.

South Africa, Department of Environmental Affairs and Tourism, *White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity*, Notice 1095 of 1997, May 1997, online: Department of Environmental Affairs and Tourism, South African government <<http://www.environment.gov.za/PolLeg/WhitePapers/Biodiversity/Contents.htm>> (last modified: 12 February 2002) [Biodiversity White Paper].

Secretariat of the Convention on Biological Diversity, "Parties to the Convention on Biological Diversity/ Cartagena Protocol on Biosafety", online: Convention on Biological Diversity <<http://www.biodiv.org/world/parties.asp>> (date accessed: 10 March 2003).

Biodiversity Bill, *supra* note 10 at s. 75(1).

Ibid. at s. 77(1) and (3).

Ibid. at s. 83.

Rachel Wynberg and Markus Burgener, "A Critical Review of Provisions Relating to Bioprospecting, Access and Benefit-Sharing in the Biodiversity Bill". (February 2003) online: Biowatch South Africa <www.biowatch.org.za/biodiv_consol.htm> (last modified: 18 February 2003).

Ibid.

See for example, D.S. Tilford, "Saving the Blueprints: The International Legal Regime for Plant Resources" (1998) 30 Case Western Reserve Journal of International Law 373 at 436-440; Walter V. Reid et al., "A New Lease on Life" in World Resources Institute, *Biodiversity Prospecting: Using Genetic Resources for Sustainable Development* (Washington, D.C.: World Resources Institute, 1993) 1 at 44-46.

Andean Pact (1969) found online at HYPERLINK "<http://users.ox.ac.uk/~wgtrr/andpact.htm>" <http://users.ox.ac.uk/~wgtrr/andpact.htm> [Decision 391]. Examples of other regional regimes include the *Central American Agreement on Access to Genetic Resources and Bio-chemicals and related Traditional Knowledge*, the *Framework Agreement of the Association of South-East Asian Nations* and the *African Model Law for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources* by the Organization of African Unity, see *Proposals for an International Regime* *supra* note 8 at 6-7.

Molina, Patricia, "Fact sheet: Access to Genetic Resources in the Andean Community." South-South Biopiracy

Summit – “Biopiracy – Ten Years Post Post-Rio,” 22-23 August 2002; Johannesburg, South Africa. Online: Biowatch South Africa HYPERLINK “<http://www.biowatch.org.za/pmolina.htm>” <http://www.biowatch.org.za/pmolina.htm>.

Decision 391, *supra* note 19, at Art. 10

Decision 391, *supra* note 19, at Art. 48, 49.

Molina, *supra* note 20.

Plan of Implementation of the World Summit on Sustainable Development, WSSD Res. 2, 17th plenary meeting, (4 September 2002) in United Nations, *Report of the World Summit on Sustainable Development* (New York, UN, 2002) at 6-72, online: United Nations: Johannesburg Summit 2002 <<http://www.johannesburgsummit.org>> (last modified: 22 January 2003).

3 November 2001 [Treaty on Plant Genetic Resources or Treaty].

FAO Res. 8/83, UN FAOOR, 22d Sess., UN Doc. C/83/REP (1983) [International Undertaking].

Agreed Interpretation of the International Undertaking, FAO Res. 4/89, UN FAOOR, 25th Sess., UN Doc. C/89/24 (1989); *Farmers' Rights*, FAO Res. 5/89, UN FAOOR, 25th Sess. (1989); FAO Res. 3/91, UN FAOOR, 26th Sess. (1991); being Annex I, II, and III respectively to the International Undertaking.

H. David Cooper, “The International Treaty on Plant Genetic Resources for Food and Agriculture” (2002) 11 *Review of European Community and International Environmental Law* 1 at 2.

Treaty *supra* note 25 at Art. 28.1. As of March 10th, 2003, the Commission on Plant Genetic Resources for Food and Agriculture had received 15 instruments of ratification, acceptance, approval and accession.

Cooper *supra* note 28 at 4; Treaty *supra* note 25 at Art. 10.2.

Treaty *supra* note 25 at Art. 3.

Cooper *supra* note 28 at 5.

Treaty *supra* note 25 at Art. 12.2 subject to Art. 11.4 which provides for an assessment of the inclusion of PGRFA held by natural and legal persons in the multilateral system two years after the Treaty enters into force. This assessment will be used to decide if natural and legal persons will continue to have facilitated access.

Treaty *supra* note 25 at Art. 12.3(b).

Treaty *supra* note 25 at Art. 12.3(f).

Treaty *supra* note 25 at Art. 13.2.

Treaty *supra* note 25 at Art. 12.3(d).

Cooper *supra* note 28 at 8-9; Treaty *supra* note 25 at Art. 12.3(d).

CGIAR is arguably a state-led initiative because many of its funders are state agencies. It was not instigated by states, however, and its governing body is not composed of state representatives so for these reasons it has been included here. Other non-state initiatives include voluntary codes of conduct such as the *Micro-Organisms Sustainable Use and Access Regulation International Code of Conduct* and the GlaxoSmithKline corporate policy on ABS, see *Proposals for an International Regime*, *supra* note 8 at 7.

CGIAR, “Co-sponsors and Members”, online: CGIAR <<http://www.cgiar.org/members/index.html>> (last modified: 31 October 2002).

Rural Advancement Foundation International & Heritage Seed Curators Australia, “Plant Breeders Wrongs: An Inquiry into the Potential for Plant Piracy Through International Intellectual Property Conventions” (1998), online: ETC Group <http://www.etcgroup.org/documents/occ_plant.pdf> (date accessed: 10 March 2003).

CBD *supra* note 2 at Article 15.3.

“The Agreement Between [name of Centre] and the Food and Agriculture Organization of the United Nations (FAO) Placing Collections of Plant Germplasm under the Auspices of FAO” in System-wide Genetic Resources Programme, *Booklet of CGIAR Centre Policy Instruments, Guidelines and Statements on Genetic Resources, Biotechnology and Intellectual Property Rights*, vers. 1 (Rome, 2001) at 2-7 [Trust Agreements].

Ibid. at Art. 3(a).

Ibid. at Art. 3(b).

Ibid. at Art. 10.

“Material Transfer Agreement (MTA)” in *Booklet of CGIAR Centre Policy Instruments* *supra* note 43 at 13.

Crucible II Group, *Seeding Solutions*, v.1 (Ottawa: International Development Research Centre, 2000) at 66.
Cooper *supra* note 28 at 6.
Treaty *supra* note 25 at Art. 15.1(b).
Proposals for an International Regime, *supra* note 8 at 2.
Being the Annex to *Access and benefit-sharing as related to genetic resources*, CBD COP Dec. VI/24 A, 2002, UN Doc. UNEP/CBD/COP/6/20 [Bonn Guidelines or Guidelines].
Proposals for an International Regime, *supra* note 8 at 2.
Guidelines *supra* note 52 at IV(C).
Guidelines *supra* note 52 at IV(D).
World Resources Institute, *Biodiversity Prospecting: Using Genetic Resources for Sustainable Development* (Washington, D.C.: World Resources Institute, 1993) at 3-4.
L. Brockway, *Science and Colonial Expansion: The Role of the British Royal Botanic Gardens* (New York: Academic Press, 1979) at 110-124.
M. Guérin-McManus *et al.*, *Bioprospecting in Practice: A Case Study of the Suriname ICBG Project and Benefits Sharing under the Convention on Biological Diversity* (no date) at 2, online: Convention on Biological Diversity <<http://www.biodiv.org>>.
The information in this case study comes from three sources: W. Aalbersberg, *Marine Bioprospecting: The Pathway for Organism to Product and the Implication for Indigenous Resource Owner*, IAS Technical Report No. 99/08 (Institute of Applied Sciences, The University of the South Pacific, 1999); W. Aalbersberg *et al.*, *The Role of a Fijian Community in a Bioprospecting Project* (no date), online: Convention on Biological Diversity <<http://www.biodiv.org>>; Environment Policy Studies Workshop, *Access to Genetic Resources: An Evaluation of the Development and Implementation of Recent Regulation and Access Agreements* (New York: Columbia University: 1999), online: Convention on Biological Diversity <<http://www.biodiv.org>>.
CBD, *supra* note 2 at Article 1.
CBD, *supra* note 2 at Article 1.
Supra note 52 at paragraph 11.
UNCTAD, Draft International Code of Conduct on the Transfer of Technology, U.N. Doc. TD/CODE/TOT/47 (1985), online: United Nations Conference on Trade and Development <<http://r0.unctad.org/stdev/compendium/documents/totcode%20.html>>. Negotiations on the Technology Transfer Code began in 1976 and continued into the mid-1980s without ever reaching a final conclusion.
CBD, *supra* note 2 at Article 16.1.
Ibid.
Ibid. at Article 16.2.
Bonn Guidelines, *supra* note 52 at paragraph 11(g).
Ibid. at paragraph 16(b)(ix).
Ibid. at Appendix II.
N.D. Hamilton, “Who Owns Dinner: Evolving Legal Mechanisms for Ownership of Plant Genetic Resources” (1993) 28 *Tulsa L.J.* 587 at 623.
Bonn Guidelines, *supra* note 52 at paragraph 16(d)(i), (iii), (v).
Secretariat for the Convention on Biological Diversity, *Compilation of Submissions on Access and Benefit-Sharing as Related to Genetic Resources Received by the Secretariat Pursuant to Decisions VI/24 A-D of the Conference of the Parties*, 30 September 2003, UN Doc., UNEP/CBD/WG-ABS/2/INF/1, online: Convention on Biological Diversity <<http://www.biodiv.org>>.
The information in this case study comes from two sources: M. Guérin-McManus *et al.*, *supra* note 48; and M. Guérin-McManus, K.C. Nnadozie, & S.A. Laird, “Sharing Financial Benefits: Trust Funds for Biodiversity Prospecting” in S.A. Laird, ed. *Biodiversity and Traditional Knowledge: Equitable Partnerships in Practice* (London: Earthscan Publications Ltd., 2002) 333.
Environmental Policy Studies Workshop, *supra* note 59 at vi.
Marie-Claire Cordonnier Segger, Ashfaq Khalfan, Salim A. Nakhjavani, *Weaving the Rules for Our Common Future: Principles, Practices and Prospects for International Sustainable Development Law* (Montreal: CISDL,

2002) at 185.

PAGE xx

Where: Fiji and particularly the 8 coastal villages in the county of Verata.

When: Project planning began in 1995, implementation in 1997.

Who: The University of the South Pacific in Suva, Fiji.

The Strathclyde Institute of Drug Research at Strathclyde University in Glasgow, Scotland. The Institute acts as a broker between collectors of biological samples and interested companies.

The people of Verata

NGOs: the South Pacific Action Committee for Human Ecology and Environment, the Rainforest Alliance, and the Worldwide Fund for Nature/South Pacific

... continued

Why: To help a community concerned with the environmental impacts of resource extraction link bioprospecting to conservation.

To increase the capacity of the University of the South Pacific to conduct research on medicinal plants.

To collect biological samples for screening by the Strathclyde Institute.

How: A project team met with the people of Verata to discuss the possibility of bioprospecting in their community and to see if there was support for the idea.

Support obtained, the Strathclyde Institute negotiated a contract with the University of the South Pacific and the University negotiated a contract with the community of Verata. These documents were subject to comment by stakeholders and reviewed by lawyers for the community before being finalized.

Under the contracts, Strathclyde retains 40% of all funds it receives from licensing the samples and the other 60% goes to the University, which passes them on to Verata.

Project implementation included participatory workshops on resource management issues. From these workshops, the community implemented conservation measures including marine taboo areas where no extraction was allowed.

Community members were also trained as sample collectors and carried out the sampling for the project. Locals were also trained in biological and socioeconomic monitoring based on local concepts. Monitoring was totally implemented by the community.

In 1999, the community of Verata established a Trust Fund to manage the funds received from the Strathclyde Institute

What: The outcomes of the project include the recovery of species thanks to conservation measures, and investment in community projects through the Trust Fund.

Where: Suriname and particularly the Maroon tribes of the interior.

When: Began in 1993 and benefits from the Forest People Fund are ongoing.

Who: The Saramaka tribe of Suriname

International Cooperative Biodiversity Group, a U.S. government funded program, gave a grant to:
Virginia Polytechnic Institute and State University
Conservation International (CI)
Bedrijf Geneesmiddelen Voorziening Suriname – a state-owned pharmaceutical company
the Missouri Botanical Gardens
Bristol-Myers Squibb Pharmaceutical Research Institute
Dow Chemical also joined the project in 1998.

Why: To promote environmental, economic, scientific, political, and cultural sustainability through bioprospecting.

To record and secure the value of tribal knowledge

To develop the identification and documentation of Suriname biodiversity and the capacity for doing so.

To increase local capacity for pharmaceutical research and production

To develop commercial drugs from plant extracts

To compensate tribal communities through a trust fund established from immediate payments that will also administer a portion of future royalties.

How: A research agreement was signed between the research organizations and the funding program.

Conservation International explained the research project, its objectives, requirements, potential benefits and intention of participants to the Saramaka in order to obtain prior informed consent to begin bioprospecting.

Letter of intent signed by CI and the Granman of the Saramaka tribe. Includes provisions that CI will act as a fiduciary for the Saramaka tribe, that the Granman grants permission to CI to begin ethnobotanical research in cooperation with the Saramaka people, and that the basis of ongoing relationship is informed consent.

Collectors must update the Granman on the project and be granted permission to continue before each expedition. The project trains and employs tribal community members and other citizens in botanical and ethnobotanical sampling.

The project also includes screening samples for anti-malarial activity which is important to people of Suriname. Multifaceted benefit-sharing includes a long-term research agreement which controls ownership, licensing and royalty fee structure for any potential drug developments; a Statement of Understanding further defining the distribution of royalties; the Forest People's Fund; and other non-monetary compensation like technology transfer that provided immediate benefits.

The Forest People's Fund is a trust fund created from an initial endowment from Bristol Myers Squibb. The purpose of the Fund is to support small-scale, sustainable economic development and health projects that are designed and proposed by the communities themselves. The fund also creates immediate benefits for the community from the bioprospecting project.

What: The outcomes of the project include local employment for shamans, field collectors and support staff.

Sustainable development from trust fund projects

Helped prevent loss of traditional knowledge

Increased local and national interest in conservation.