

**THE EMERGING GLOBAL REGIME ON GENETIC RESOURCES:
ITS IMPLICATIONS FOR LOCAL COMMUNITIES****

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Executive Summary

This briefing paper gives an overview of the emerging global regime on genetic resources, with a special emphasis on its implications for local and impoverished communities worldwide. Such a regime, focused on access to and benefit sharing (ABS) of genetic resources, could have enormous impact on such communities. The briefing paper identifies the key issues being debated, the stakeholders involved and strategies to maximize local participation, and the relevant global processes and the opportunities available for influencing them. A strategy for intervention is proposed in the concluding section of the paper.

A growing demand for new genetic material that could be used as raw material for pharmaceutical, agricultural and industrial products have increased the actual and potential economic value of genetic resources. The advent of modern biotechnology has stimulated “bioprospecting”, increased the flow of genetic resources and created an international trade in genetic resources, a “biotrade”, where the economic stakes are enormous. Yet, in spite of the economic significance of genetic resources, the countries and communities who host these resources have received little benefit, if any, from its commercial use and application.

This inequity has generated a global debate over access to and benefit sharing (ABS) of genetic resources. There are two levels of tension in this debate: (1) between countries of the Global South who are providers of genetic material and industrialized countries of the North who have the requisite scientific and technological expertise to utilize genetic material; and (2) between companies and research institutions, mostly from the North, who want to have access to genetic resources and local and impoverished communities of the South who would like to get meaningful benefits from these resources.

The global processes relevant to this debate are: the processes under the Convention on Biological Diversity (CBD) on access and benefit sharing of genetic resources and on the implementation of Article 8j (which focuses on the innovations and practices of indigenous and local communities); the recently adopted International Treaty on Plant Genetic Resources for

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Food and Agriculture; and the Doha work programme adopted by the World Trade Organisation which includes the clarification of the relationship between the CBD and Trade Related Intellectual Property Rights (TRIPS) Agreement, as it relates to traditional knowledge. In these processes, the issues being deliberated are: issues related to prior informed consent, including the role of stakeholders such as indigenous and local communities in that process; designing and implementing appropriate and effective benefit sharing arrangements, including benefits for local communities; and, questions related to intellectual property rights and its implications for holders of local and traditional knowledge.

Decisions being made in these negotiating forums have enormous impact on local and poor communities. These communities rely on biological and genetic resources for their food supply and for many of their subsistence and economic activities. They depend on these resources for seed conservation and replenishment. Their traditional knowledge is frequently directly linked to physical access to both biological and genetic resources. For many communities, especially indigenous peoples, there is also an intimate relation between cultural and religious values and these resources. Unfortunately, unlike the other stakeholders, the voices of local communities, with the possible exception of indigenous peoples, are not being effectively heard in these ongoing global decision processes.

If global ABS decisions are made that would facilitate access to genetic resources without the participation of such communities, the emerging genetic resources regime could aggravate existing threats to their resource tenure and control of biological and genetic resources and their traditional knowledge. On the other hand, these processes offer a unique opportunity for such communities to maximize the compensation they could receive under benefit sharing arrangements that are designed and implemented properly.

A strategy for intervention in the global processes relevant to the emerging global regime on genetic resources could have the following goals: (1) the adoption of global norms on transparency and public participation in decisions related to genetic resources; (2) the acceptance of the principle of free and prior informed consent by local communities before states allow access to genetic resources; (3) the establishment of benefit sharing mechanisms that provide immediate as well as long term benefits to developing countries and to communities; and (4) the creation of an international certification system that could trace genetic flows and the circumstances under which material were obtained and utilized.

Local capacity building is critical because a strategy of engagement in the relevant global processes by local stakeholders would have to be anchored in sustained engagement at the national and regional level. At the global level, local and impoverished communities must build alliances among themselves and with sympathetic constituencies, including with scientists, environmental organizations, and other civil society organizations. Alliances with other stakeholder groups working on agriculture and food security issues, intellectual property and trade are also crucial for success.

In conclusion, the global processes on genetic resources presents a potentially important opportunity for promoting a progressive agenda on community rights to natural resources and their traditional knowledge and for the protection and sustainable use of biological resources.

I. Introduction

Over the last twenty years, there has been a growing demand for new genetic material that could be used as raw material for pharmaceutical, agricultural and industrial products. The actual and potential economic value of these genetic resources, which includes germplasm like seeds, sperms, cells and parts of an organism, have increased as a result of technological development. The advent of modern biotechnology, which has made it possible to transfer genes across species and kingdoms, has particularly revolutionized agriculture and drug development.

In the pharmaceutical industry, researchers have returned to such natural sources of biologically active chemicals as plants, insects, marine invertebrates, fungi and bacteria (Reid, 1993). In the United States, for example, about 25 percent of all drugs sold are derived from plants (Bosselmann, 1995). In agriculture, genetic engineering has been accepted by the largest agrochemical companies as the technology for the future influencing everything from the development of seeds to control of animal diseases. In 1998, approximately 21 percent of North American cropland and about one percent of total cropland in the South, mainly in Argentina, was already planted with genetically modified crops (Herdt, 1999).

These technological changes with its economic consequences have stimulated “bioprospecting” (Reid, 1993), i.e., the collection of genetic resources for purposes of commercial development. It has increased the flow of genetic resources between countries and regions of the world. It has created an international trade in genetic resources, a “biotrade”, where the economic stakes are enormous (Mugabe, 1996). For example, sales based on plant based medicines, many of which are derived from genetic material found only in developing countries, have been estimated to top US\$43 billion in industrialized countries (Bosselmann, 1995). The top 15 crops in the United States, with annual sales of US\$50 billion, originated in developing countries (Mugabe, 1996). Yet, in spite of the economic significance of genetic resources, the countries and communities who host these resources have received little benefit, if any, from its commercial use and application.

This inequity has generated a global debate over access to and benefit sharing (ABS) of genetic resources. There are two levels of tension in this debate. There is a clash between countries of the Global South and industrialized countries of the North. Developing countries who are providers of genetic material have asserted sovereign ownership over genetic resources in their territories, demanding benefits in exchange for access. Industrialized countries, which have the requisite scientific and technological expertise to utilize genetic resources, are concerned that their scientists and companies will be excluded from access to this valuable material. Many developing countries also want compensation for the “cumulative genetic debt” owed by the North to the South, a claim that most industrialized countries have consistently denied.

At another level is perhaps a more profound tension: between companies and research institutions, mostly from industrialized countries, who want access to genetic resources and local and impoverished communities of the Global South who have conserved and enhanced them through centuries of protection and innovation. These communities, for religious or cultural reasons, might want to refuse access to particular genetic resources or, as is more likely, they would like to get meaningful benefits from the utilization of such resources.

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Indigenous peoples have been especially concerned about this issue. Many of them consider bioprospecting as equivalent to “biopiracy”, i.e., outright theft of genetic material. Biopiracy becomes a problem when “local communities have not been informed properly, when contracts have not been developed in transparent fashion, and when payments systems favor governments themselves or outside groups that may have been negotiating on behalf of local constituencies” (Conroy, 2001). Some recent examples include Mexican beans, South Asian basmati, Bolivian quinoa, Amazonian ayahuasca, and West Africa's sweet genes: In addition to the collection of genetic material, all these have been subject to intellectual property claims “that are predatory on the knowledge and genetic resources of indigenous peoples and farming communities” (RAFI, 2000).

The case of a United States supported project in Chiapas, Mexico is an example of the controversy that bioprospecting can generate. (See Box 1)

Box 1: The Chiapas Controversy

In November 2001, after two years of intense local opposition from indigenous peoples' organizations in Chiapas, Mexico, the US government-funded ICBG-Maya project aimed at the bioprospecting of Mayan medicinal plants and traditional knowledge was cancelled. The \$2.5 million dollar ICBG-Maya project, entitled "Drug Discovery and Biodiversity among the Maya in Mexico," was funded by the US government in September 1998, and included the University of Georgia -Athens (UGA), USA, the Colegio de la Frontera Sur (ECOSUR), Mexico, and Molecular Nature Limited (MNL), a Welsh biotechnology company. The International Collaborative Biodiversity Group (ICBG) is a US government initiative involving the National Institutes of Health, the National Science Foundation and the US Department of Agriculture (USDA).

The Project was unacceptable to many indigenous communities in Chiapas that oppose commercial exploitation of their genetic resources and traditional knowledge. The ICBG Maya Project was staunchly defended by its director, anthropologist Brent Berlin of the University of Georgia. Failing to win consensus at the local level, and facing increasing criticism internationally, Berlin sought to redesign the project and salvage it. In August 2001 Berlin proposed to ECOSUR that a re-designed project would seek to define the risks and benefits of bioprospecting, train indigenous leaders on ethical norms related to prior informed consent, and develop an informational campaign on the risks and benefits of bioprospecting for indigenous communities. But again, the communities said “No”. The final blow came when ECOSUR, the Mexican partner, withdrew its support. Earlier, the project also failed to get regulatory approval from the Mexican government (that is, permission to conduct bio-assays on collected plant materials).

Source: Global Exchange, 2001, <http://www.globalexchange.org/campaigns/mexico/news/etcgroup110901.html>

At the global level, the debate is most intense in the Convention on Biological Diversity (CBD), adopted in 1992, in force since 23 December 1994, and ratified or acceded to by more than 180 governments (but not the United States).¹ In the area of plant genetic resources, the recently adopted International Treaty on Plant Genetic Resources for Food and Agriculture have enormous implications for how access and benefit sharing mechanisms are to be designed and implemented. In addition, recently, in Doha, the World Trade Organisation (WTO) singled out the relationship between the CBD and traditional knowledge to the Trade Related Intellectual Property Rights (TRIPS) agreement of the WTO as requiring clarification.

In all these global processes relevant to genetic resources, civil society and local participation remains severely limited and need to be expanded and made more effective if the emerging global

¹ The full text of the CBD can be found in www.biodiv.org.

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regime is to be consistent with environmental sustainability and social justice. Decisions being made in these negotiating forums have enormous impact on local and poor communities.

If global ABS decisions are made that would facilitate access to genetic resources without the participation of such communities, the emerging genetic resources regime could aggravate existing threats to their resource tenure and control of biological and genetic resources. In places where progress has been made in granting broad legal tenure and resource rights to communities, a global system that encouraged access to genetic resources without the free and prior informed consent of such communities would be a backward step. A case in point would be the Philippines which enacted in 1997 the Indigenous Peoples' Rights Act, legislation which recognized the ownership by indigenous peoples of all natural resources, including genetic material, within their ancestral domains.

On the other hand, these processes offer a unique opportunity for such stakeholders to maximize the compensation they could receive under benefit sharing arrangements that are designed and implemented properly. As discussed in Part III, there are a number of options for ensuring that benefits are in fact shared with communities but they require hard negotiations by communities with government and with industry.

II. The Stakeholders in the ABS Debate: An Overview

There are many stakeholders in the debate on how to utilize and share the benefits of genetic resources. They include national governments, the scientific community, the private sector, environmental constituencies, and local and indigenous communities.

National governments have a direct interest on ABS decisions. Genetic resources are part of the patrimony of a country and could be an important source of economic wealth in the future. Unrestricted access to its genetic resources could undermine this potential but an overly restrictive legal regime could also be a disadvantage as it could have a negative impact on domestic scientific research and technological development as well as serve as a disincentive to potential investments by the private sector. This is the reason why national governments, in the CBD and in other global processes, are investing both time and energy to get the global regime on genetic resources right. They recognize that the stakes and the consequences are enormous in this debate.

The scientific community, both in the North and South, likewise, has a direct interest in how the emerging global regime on genetic resources is sorted out. Without access to these resources for research purposes, both domestic as well as global scientific capacity to understand and utilize genetic resources could be severely undermined. Essential work on taxonomy, conservation and product development would be affected. In addition, where benefit sharing arrangements are properly designed, the domestic scientific community could be prime beneficiaries as local scientists would be able to build their capacity for both collection and product development activities. In many countries and the international level, scientists are at the forefront of the debate, advocating, among others, for access rules that are less restrictive.

The private sector obviously has an interest on the emerging global regime on genetic resources (ten Kate, 1999). In particular, the pharmaceutical and agricultural industries have paid attention

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to national, regional and global discussions on access and benefit sharing. The private sector sees genetic resources as raw material for pharmaceutical, agricultural and even for industrial products. They are concerned that the ABS system that is emerging will close off their access to these resources and will be a disincentive for further investments. Since the adoption of the CBD, the private sector, as represented by individual life science companies and through trade associations, has increased its efforts to influence the decisions that are being made.

The outcomes of the ABS debate are also important to environmental constituencies. This is particularly true for conservation organizations because of its implications to the conservation of biological diversity. The environmental community sees in the potential economic value of genetic resources a strong argument for conservation of biological resources. They want to ensure that collection and utilization is done consistent with protection of biodiversity. In addition, for environmental stakeholders, benefit sharing must always include setting aside funds for conservation activities which they see as critical to maintain genetic diversity. Working through such organizations as the *World Conservation Union (IUCN)* and the *World Resources Institute (WRI)*, particularly through the Global Biodiversity Forum, the environmental perspective has consistently been listened to in this debate.

Other civil society organizations have also been active in the debate. Organizations concerned with agriculture and food security and those motivated by concern about growing monopolization and concentration of financial and intellectual capital in private companies have been in the forefront of global processes related to genetic resources. The most influential of these campaign oriented organizations are probably the *Action Group on Erosion, Technology and Concentration (ETC Group)*, formerly known as the *Rural Advancement Foundation International* or *RAFI* and the *Third World Network (TWN)*. Through communiqués, policy papers and action alerts, disseminated mainly through the internet, the ETC Group and TWN have been very effective voices in providing information and shaping views on this issue.

Finally, local communities – particularly indigenous peoples, traditional farmers and rural women – have a huge stake in the emerging global regime on genetic resources. These communities rely on biological and genetic resources for their food supply and for many of their subsistence and economic activities. They depend on these resources for seed conservation and replenishment. Their traditional knowledge is frequently directly linked to physical access to both biological and genetic resources. For many communities, especially indigenous peoples, there is also an intimate relation between cultural and religious values and these resources. Unfortunately, unlike the other stakeholders, the voices of local communities, with the possible exception of indigenous peoples, are not being effectively heard in the ongoing global decision processes on genetic resources.

To some extent, indigenous peoples have become more influential in some of the relevant processes on genetic resources. For example, in the Bonn meeting of the CBD working group on genetic resources, their representatives eloquently articulated the concerns and positions of indigenous peoples on the issues that were debated. The interventions of indigenous peoples would, however, been more effective if they built coalitions with other civil society organizations, sympathetic elements of the scientific community and key developing and developed country governments. In addition, they would have to build coalitions with other local stakeholders, especially farmers and rural women who are not as actively engaged in the global processes. Decisions on access and benefit sharing will have a major impact on other

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impoverished sectors and strategies on how to promote, enhance, and support their engagement are imperative.

III. The Principal Issues in the ABS Debate: An Overview

There are three sets of issues that governments are confronting as they fashion a global regime on genetic resources. These are issues related to prior informed consent, including the role of stakeholders such as indigenous and local communities in that process; designing and implementing appropriate and effective benefit sharing arrangements, including benefits for communities hosting genetic resources; and, questions related to intellectual property rights and its implications to holders of local and traditional knowledge.

(1) Access to Genetic Resources: Issues Related to Prior Informed Consent

Article 15 of the CBD recognizes the sovereign rights of states over their natural resources and gives governments the authority to determine access to genetic resources. Such access shall be subject to prior informed consent (PIC) of the host State and shall be on mutually agreed terms (MAT). All these are to be done and regulated through national legislation. Table 1 illustrates the different options countries could take in enacting this legislation.

Table 1
Legislative Options for Genetic Resources Access and Benefit-Sharing, and Selected Countries Considering or Pursuing Each Option

Source: Barber, 2001

ABS Legislative Strategy Options	Selected Countries Pursuing These Options
General Environmental Framework Laws (which only enable future legislation on ABS)	Gambia, Kenya, Malawi, Republic of Korea, Uganda
Framework sustainable development, nature conservation or biodiversity laws (which establish some ABS principles but require further legislation)	Costa Rica, Eritrea, Fiji, Mexico, Peru
Specific, stand-alone national laws or Executive Orders regulating access to genetic resources	Philippines and, at the state level, Sarawak (Malaysia)
Modification of existing laws and regulations—such as those governing wildlife, national parks, forestry and fisheries—to include ABS provisions	Nigeria, Malaysia and, at the state level, Western Australia (Australia).
Regional Framework legislation (establishing common principles and procedures but requiring follow-up national legislation)	The countries of the Andean Pact (Bolivia, Colombia, Ecuador, Peru and Venezuela). Regional framework agreements or legislation also under discussion by countries grouped in the Association of Southeast Asian Nations (ASEAN) and the Organization of African Unity (OAU).

The debate at the global level is focused on the extent to which governments can regulate access to prevent biopiracy while not imposing unnecessary burdens on “legitimate” collection and utilization. In the case, for example, of plant genetic resources, its “free” exchange is seen as an important pillar for meeting the goal of global food security. Likewise, the collection of specimens that are critical for biodiversity conservation is perceived to be a legitimate activity that access legislation could unduly hinder.

Prior Informed Consent: The Role of Local Communities

Article 15 of the CBD requires only that national governments give prior informed consent (the sovereign act of allowing access to genetic resources within a country), but other CBD provisions—as well as the national laws of many countries—imply that PIC should also be obtained from the local or indigenous communities from whose territories genetic resources are taken. Article 8 (j), for example, calls on each Contracting Party to:

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

The role of local and indigenous communities in determining whether a state should give its prior informed consent to the collection and utilization of genetic resources is a decision that will be made at both the global (particularly in the CBD) and national levels. This is a decision with serious implications to the rights (political and natural resources related) of local and indigenous communities. Serious attention needs to be devoted to the relevant global and national processes so such rights are protected.

(2) Benefit Sharing Options

The CBD requires the adoption and implementation of benefit sharing arrangements between its Parties. In its national legislation, governments are mandated to establish such arrangements if this core objective of regulating access is to be achieved. In addition, user countries have an obligation to institute measures to ensure benefit sharing with the provider countries. It should be noted that most benefits from the utilization of genetic resources are generated by the private sector. Individual governments and communities would have to develop their own approaches to—and conduct their own negotiations with—industry to ensure benefit-sharing. There is, however, a wealth of experience in this regard (See Table 2).

While there is a broad consensus that benefit sharing should include benefits for local and indigenous communities, most of the debate still focuses on benefit sharing at the national level (e.g. technology transfer, scientific capacity building, etc.). Benefit-sharing arrangements should be specifically designed to include those that would benefit communities from which the genetic resources are taken. These could include:

- Up-front payments to local communities for samples collected in their territories and/or cash “milestone” payments pegged to stages in the development of a product where its value increases;
- Transfers of locally-useable technology and local capacity-building, so that the source community may bring added value to its genetic resources.

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- Earmarking of funds for conservation of biodiversity and genetic resources in a community's territory
- Co-ownership of patents and other intellectual property rights where indigenous knowledge associated with collected genetic resources contributes to the discovery of a useful compound and/or development of a commercial product; and
- Support for infrastructural developments—such as schools, water supplies, or roads— desired by a community in whose territory samples are collected. (Barber, 2001)

Table 2
Benefit-Sharing Arrangements in Selected Genetic Resource Access Agreements
Source: SCBD, 1998

Resource Type	Parties to Agreement	Short-Term Benefits	Long-Term Benefits
<i>Trychopus zeylanicus</i> , a wild plant with anti-fatigue properties known to the Kani tribe of Kerala, India and developed into a drug (Jeevni) by the Tropical Botanic Garden and Research Institute (TBGRI)	<ul style="list-style-type: none"> * Kani tribal community * TBGRI * pharmaceutical company to which TBGRI licensed the drug 	<ul style="list-style-type: none"> * License fee from pharmaceutical firm to TBGRI * TBGRI shares 50% of license fee with Kani tribal community 	<ul style="list-style-type: none"> * 2% royalty at ex-factory prices to be paid to TBGRI * TBGRI pays 50% of royalty payments it receives to Kani tribal community * Additional Kani income and employment through cultivation of plant * Protection of associated tree species by cultivation of plant.
Micro-organisms capable of surviving in extreme conditions found in thermal features of Yellowstone National Park (USA)	<ul style="list-style-type: none"> * Yellowstone National Park * Diversa Corporation (firm conducting bioprospecting of the micro-organisms) 	<ul style="list-style-type: none"> * \$100,000 payment from Diversa to Yellowstone, over 5 years, to be offset against future royalties * Transfer of DNA extraction kits to Park * Training of Park staff in sampling and DNA fingerprinting techniques 	<ul style="list-style-type: none"> * Undisclosed royalties of up to 10% to be paid by Diversa to the Park upon commercialization of a product derived from genetic resources sourced in the Park. Royalty rates based on a sliding scale depending on end use of research result and magnitude of sales.
<i>Callyphyllum</i> spp., a group of species found in Sarawak, Malaysia containing compounds (Calanolides) promising for the development of anti-HIV compounds	<ul style="list-style-type: none"> * University of Illinois-Chicago * National Cancer Institute (USA) * Sarawak state government * Medichem Research, Inc. 	<ul style="list-style-type: none"> * Input of international scientific expertise to Sarawak * Training for local scientists in bioprospecting lab techniques * Establishment of a joint venture between Sarawak government and Medichem Research encompassing all patents held on Calanonides. 	<ul style="list-style-type: none"> * 50% of future royalties on any drug developed with patents held by joint venture to be paid to Sarawak government (the remaining 50% paid to Medichem.)
Wild genetic resources found in the forests of Suriname, which are being collected and analyzed for potential pharmaceutical uses. Collection is carried out in part on the basis of traditional knowledge held by local tribes about the medicinal qualities of various forest species.	<ul style="list-style-type: none"> * Virginia Polytechnic Institute and State University (USA) * Conservation International (conservation NGO, USA) * BGVS (local pharmaceutical firm owned by Suriname government) * Missouri Botanical Garden (USA) * Bristol-Myers Squibb (multinational pharmaceutical firm) * Walter Reed Army Hospital (USA – screening plants for antimalarial properties) * local tribal groups with traditional knowledge of medicinal plants 	<ul style="list-style-type: none"> * Employment/incomes for traditional healers, field collectors and others * training and technology transfer for Surinamese research institutions * Building capacity for local pharmaceutical production * Strengthening the national botanical inventory * recording and securing of tribal knowledge * Establishment of a Forest People's Fund for community development, health care and conservation projects. 	<ul style="list-style-type: none"> * Joint ownership of patents by tribal groups where their knowledge is a basis for development of a product. * Payment of royalties on future products to Suriname on a sliding scale depending on proportion of local genetic resources/trad. knowledge contribution. * potential discovery of more effective treatments for malaria

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If communities, not only provider States, are to benefit from utilization of genetic resources, it is imperative that communities build the capacity for local communities to negotiate the appropriate payments that would provide both short term and long term benefits. In addition to acquiring the necessary technical skills to negotiate successfully, the ability of local communities to maximize payments they could receive is also directly dependent on their right to prevent access. Thus, benefit sharing with communities can work only if their role in giving prior informed consent is recognized and respected.

(3) The Role of Intellectual Property Rights

The TRIPS Agreement lays down the international framework for the protection of Intellectual Property Rights (IPR), including patents and trade secrets (the most relevant to benefit sharing of genetic resources. As a general rule, the TRIPS Agreement protects intellectual property rights holders by requiring WTO Members to provide national treatment and MFN treatment to the nationals of other WTO Members with respect to the protection of intellectual property.

Article 27 of the TRIPS Agreement effectively allows countries to allow the patenting of life forms – i.e. plants, animals, and biological processes – by the simple expedient of not expressly excluding such life forms from patentability. Micro-organisms and non-biological and microbiological processes may be patented as well. Furthermore, with respect to plant varieties, the TRIPS Agreement requires that protection thereof should be established by WTO Members “either by patents or by an effective *sui generis* system or by any combination thereof.” Because of these provisions, many see the TRIPS agreement as threat to the protection of traditional knowledge of local and impoverished communities.

Many local and impoverished communities reject the patenting of life forms. The concept of ownership over knowledge of living products and life processes is culturally alien to many such communities and particularly to indigenous peoples. Moreover, the Northern based concept of intellectual property rights requires formidable legal, financial and administrative resources which communities do not have, rendering it usually futile for them to defend their interests, e.g. the protection of their traditional knowledge, under the present IPR system. While there are those who advocate that traditional knowledge can be protected through the present system, others disagree for both ideological as well as practical reasons. Other issues related to TRIPS include:

- The collective nature of traditional knowledge, both within and among generations of indigenous and local communities;
- Means for keeping control of the knowledge firmly in the hands of the indigenous and local communities of origin;
- The problem of creating monopolistic rights over knowledge and biological resources;
- Mechanisms for equitable sharing within and among the communities involved; and
- A presumption that the existence of traditional knowledge implies use of that knowledge, lessening the legitimacy of the claims of those who would “rediscover” and patent traditional knowledge that is apparently out of use. (Conroy, 2001)

Solutions have been proposed on how to deal with this difficult challenge (Crucible Group, 1994; Singh, 1994), but without the modification or amendment of TRIPS, it is difficult to foresee a satisfactory solution.

IV. Influencing Global Processes on ABS: Where are the opportunities?

There are four global processes relevant to the debate on genetic resources. These are: (1) the CBD processes on access and benefit sharing of genetic resources and (2) on the implementation of Article 8j (which focuses on the innovations and practices of indigenous and local communities); (3) the recently adopted International Treaty on Plant Genetic Resources for Food and Agriculture; and (4) the Doha work programme adopted by the World Trade Organisation which includes the clarification of the relationship between the CBD and TRIPS as it relates particularly to the protection of traditional knowledge.

Relevant CBD Processes

The Working Group on Access and Benefit Sharing (WG-ABS) is an ad hoc negotiating group established by the Conference of the Parties (COP) of the CBD in its meeting in Nairobi, Kenya in May 2000. From 22-26 October 2001, the working group met in Bonn to draft international guidelines on access and benefit sharing of genetic resources, design and develop an action plan for capacity building to implement such guidelines and related measures, and to elaborate the relationship between intellectual property rights and access and benefit sharing arrangements. Significant progress was made and draft decisions were forwarded to the Conference of the Parties (COP) of the CBD, meeting in April 2002 at The Hague, Netherlands.

The Bonn Guidelines

Working on a draft submitted from a meeting last October, 2001 in Bonn, governments negotiated and adopted the *"Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization"*.² All genetic resources covered by the CBD and benefits arising from the commercial and other utilization of such resources are covered, including traditional knowledge, innovations, and practices that are associated with genetic resources such as indigenous medicinal and local farming practices. Human genetic resources are explicitly excluded.

The guidelines recognize that the involvement of relevant stakeholders is essential for the adequate development and implementation of genetic resource arrangements. This involvement can be promoted by providing information, especially regarding scientific and legal advice, in order for them to be able to participate effectively and by providing support for capacity building in order for the stakeholders to be actively engaged in various stages of access and benefit sharing negotiations. The development and establishment of voluntary certification schemes for institutions abiding by rules on access and benefit sharing is also recommended.

² For the full text of the Bonn guidelines, see www.biodiv.org/decisions/default.asp?lg=0&m=cop-05&d=26.

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Among the objectives of the Guidelines are:

- To contribute to the conservation and sustainable use of biological diversity;
- To provide Parties and stakeholders with a transparent framework to facilitate access to genetic resources and ensure fair and equitable sharing of benefits;
- To contribute to the development by Parties of mechanisms and access and benefit-sharing regimes that recognizes the protection of traditional knowledge, innovations and practices of indigenous and local communities, in accordance with domestic laws and relevant international instruments; and
- To contribute to poverty alleviation and be supportive to the realization of human, food, health, and cultural integrity, especially in developing countries.

The guidelines also elaborate the roles and responsibilities in access and benefit sharing with an emphasis on the distinct roles of provider states (countries of origin of genetic resources) and user states (those which seek to acquire genetic resources in accordance with the CBD).

Providers are:

- Urged to ensure objectivity and transparency in access decisions;
- Advised to establish mechanisms to ensure that their decisions are made available to relevant indigenous and local communities and relevant stakeholders; and
- Encouraged to support measures that enhance indigenous and local communities' capacity to represent their interests fully at access negotiations.

Users are:

- Urged to respect customs, traditions, values, and customary practices of indigenous and local communities, including responding to requests for information from them; and
- Encouraged to establish mechanisms to promote the disclosure of the country of origin of the genetic resources and of the origin of traditional knowledge, innovations and practices of local and indigenous communities in applications for IPRs.

Representatives from indigenous peoples attending the meeting lobbied strongly for the adoption of international norms on free and prior informed consent by communities in access decisions. They advocated powerfully for effective benefit sharing mechanisms and capacity building programs. The guidelines, however, by subjecting community rights to national legislation, do not go far enough in providing effective protection to community ownership of genetic resources and to control of their traditional knowledge and practices. The guidelines are also voluntary in nature and are not legally binding on countries although governments are expected to follow them in developing and drafting legislative, administrative or policy measures on access and benefit sharing. More importantly, the guidelines are a first step towards the negotiation and adoption of

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what many consider inevitable: legally binding rules at the international level on genetic resources perhaps through a protocol under the CBD. But how long will communities need to wait before such rules are finally adopted?

Article 8 (j) of the Convention on Biological Diversity addresses the knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity. The COP, during its meeting in Bratislava, Slovakia in May 1998, established a working group on Article 8j with the mandate to advise the COP on how the article could be implemented. The working group met in 2000 in Seville, Spain and will meet again in February, 2002 in Montreal Canada. It will present a report to the COP during its meeting in The Hague. Whatever the results of the Montreal meeting, it is expected that the Article 8j process will continue in the foreseeable future as the issues that it is dealing with, particularly those related to IPR and traditional knowledge, are seen to be complex and difficult.

FAO Treaty on Plant Genetic Resources

Last November 3, 2001, an International Treaty on Plant Genetic Resources for Food and Agriculture was adopted by the Conference of the UN Food and Agriculture Organization (FAO). It was approved with 116 favorable votes and two abstentions [United States and Japan] and no votes against (ENB, 2001). Negotiations on this treaty began in 1994 when the FAO initiated an inter-governmental negotiating process for the revision of the 1983 International Undertaking on Plant Genetic Resources for Food and Agriculture, in order to adopt it as a legally binding agreement, in harmony with the CBD. The Treaty revises the previous International Undertaking, which was adopted by the FAO Conference in 1983 as an instrument to promote international harmony in matters regarding access to plant genetic resources for food and agriculture. The negotiations were difficult and complex and countries found it difficult to reach agreement on certain issues, and particularly on farmers' rights, intellectual property rights and the list of crops covered by the Treaty.

The objective of the treaty is to ensure better use of plant genetic diversity to meet the challenge of eradicating world hunger. The agreement takes into account the particular needs of farmers and plant breeders and is aimed at securing the future availability of the diversity of plant genetic resources for food and agriculture on which they depend, and the fair and equitable sharing of the benefits. Its objectives are the conservation and sustainable use of plant genetic resources for food and agriculture (PGRFA) and equitable benefit-sharing for sustainable agriculture and food security. The treaty also recognizes the need for close links with the FAO and the CBD. It establishes a framework to ensure access to plant genetic resources, and to related knowledge, technologies, and internationally agreed funding and creates a multilateral tool to promote cooperation and synergy between agriculture and other sectors, particularly with trade and the environment. Specifically, it establishes a Multilateral System for facilitated access to a specified list of PGRFA, balanced by benefit-sharing in the areas of information exchange, technology transfer, capacity building and commercial benefit-sharing.³

³ See <http://www.fao.org/ag/cgrfa/IU.htm#negotiations> for the full text of the treaty.

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Civil society organizations have reacted cautiously to the adoption of this new treaty. On one hand, they are disappointed that the agreement is not fair, equitable and comprehensive. They see the benefit sharing mechanisms as inadequate because benefits are scarce and financial resources from OECD countries are not commensurate with the contribution made by farmers. It is not equitable because it is ambiguous about ensuring that all farmers and breeders will have free access to PGRFA, unrestricted by IPRs. And because just 35 genera of crops and only 29 forage species are included in the Treaty, they see the treaty as not comprehensive enough. Despite these shortcomings, however, civil society organizations following this process recognize that “only an international convention of this type can begin to address the deterioration in the flow of genetic resources” and, therefore, they urge countries to ratify the Treaty in all Member countries, as soon as possible (CSO, 2001).

While the adoption of the new treaty is a laudable achievement, it will have to be ratified by at least 40 countries so it can take effect. An enormous task still lies ahead to implement its provisions so that it can become truly “an international law of the seed” (ETC, 2001). The area of farmers’ rights (the right to be compensated for their cumulative contribution to the conservation and innovation of plant genetic resources), for example, has been subjected to national legislation and efforts would have to be exerted to ensure the genetic resources and local technologies developed by generations of farmers are complemented, enhanced and, in appropriate circumstances, compensated.

The Doha Decision on TRIPS and CBD

In November 2001, trade ministers from all over the world met in Doha, Qatar, and adopted a Ministerial Declaration which set forth the work programme of the World Trade Organisation in the next 2-3 years. As part of the Declaration⁴, the ministers agreed to include in its review of the TRIPS agreement, an examination of the relationship between TRIPS and the CBD as well as the protection of traditional knowledge and folklore. It is not clear how this review, to be undertaken by the TRIPS Council, will be conducted and it is difficult to anticipate the outcomes of this review. What is clear is that if this is not done right, decisions made in the WTO process could seriously undermine whatever progress has been made in the CBD and FAO processes.

The consequences of bad decisions can be direct because, unlike the CBD and FAO agreement, TRIPS and other WTO agreements can be immediately enforced through the various mechanisms provided in the trade agreements. What is also worrisome about this review is that there is very little transparency in the way the WTO, including the TRIPS council, conducts its business. For example, it is critical the CBD Secretariat participate effectively and fully in the TRIPS Council discussions relating to the CBD. Likewise, the input of non-governmental organizations that have gained expertise and experience in IPR and CBD/traditional knowledge issues is also needed. Unfortunately, the CBD Secretariat and most of these NGOs does not currently hold observer status in the WTO and neither does it hold regular nor ad hoc observer status for the TRIPS Council. Without this status, they will not be able to participate effectively in the review and it is likely that the discussions would focus on how traditional knowledge and folklore can best be integrated into the TRIPS IPR system, rather than how the TRIPS IPR system should be changed

⁴ See paragraph 19 of the Doha Ministerial Declaration, the full text of which can be found in http://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm

and amended to ensure that biodiversity is not subordinated to trade and that traditional knowledge and folklore do not become the subject of patenting and other intellectual property rights (Yu, 2001).

V. Conclusion: A Strategy for Intervention

A strategy for intervention in the global processes relevant to the emerging global regime on genetic resources would require capacity and coalition building at the national, regional and global level. Such a strategy could have the following goals: (1) the adoption of global norms on transparency and public participation in decisions related to genetic resources; (2) the acceptance of the principle of free and prior informed consent by local communities before states allow access to genetic resources; (3) the establishment of benefit sharing mechanisms that provide immediate as well as long term benefits to developing countries and to communities; and (4) the creation of an international certification system that could trace genetic flows and the circumstances under which material were obtained and utilized.

An effective strategy for local participation and intervention in these global processes must begin with capacity building of community and allied voices in home countries and regions. Local communities and their civil society partners would have to understand what is at stake for them in their concrete circumstances. Genetic resource issues are complex and their implications are long-term. Local communities would have to locate the significance of these issues to their present situations, i.e., in their struggle to gain access or control of land and natural resources, in movements to retain and assure their cultural integrity, and in continuing efforts to gain some measure of political autonomy. Unless the genetic resources issues are linked directly to these immediate concerns, it is not likely that local communities would find any incentive to engage in these issues.

Among the most powerful incentives for such engagement is the potential of using the ABS debate to advance the concept of environmental payments to local communities for their role, both locally and globally, in conserving critical biological and genetic diversity. This incentive however needs to be sharpened by focusing on immediate benefits (compensation for physical access, support for local capacity building and infrastructure) that communities could obtain rather than focusing on long term (but uncertain because it requires successful development of a commercial product) benefits such as royalty payments. Obtaining meaningful benefits, however, require a significant enhancement of the negotiating skills of communities, including the ability to identify the economic value and potential of their resources.

Local capacity building is critical because a strategy of engagement in the relevant global processes by local stakeholders would have to be anchored in sustained engagement at the national and regional level. As developing countries formulate, adopt and implement ABS legislation, local stakeholders need to organize and have their voices heard in this process. Only when this done can their governments reflect their perspectives and interests at the global level. This is doable because in ABS issues there is, to some extent, a coincidence between state interests (countries of the Global South) and community interests. This is true for both the concern (by the state and local communities) to prevent biopiracy and the need (by the state and local communities) to protect traditional knowledge and to limit or slow down the expansion of IPRs. Indeed, it is in the state and local community to conserve genetic resources and to protect

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traditional knowledge and there is also a shared interest in limiting the scope of patentability and other IPR protection (La Vina, 1997).

At the international level, there is no realistic way in which local community voices can influence the global processes on genetic resources unless they form, among themselves and with sympathetic constituencies, effective alliances or coalitions that would work together to attain common goals. The most obvious convergence of interests are among local interests themselves—indigenous peoples, farmers and rural women stand out as the principal stakeholders. Indigenous peoples have gained a small foothold in the CBD discussions and farmers' groups do have a place in the FAO negotiation table. They would be able to help each other better if they made conscious efforts to align both their interests and their political strategies and if they reached out to other local stakeholders such as rural women.

Coalitions with other interest groups need to be developed and built. In the CBD processes, alliances with environmental organizations and with the local and international scientific community (or sympathetic segments of it) are attainable because of shared concerns. In the FAO processes, there are many international NGOs working on plant genetic resources issues with strong linkages to farmers' organizations worldwide. In the WTO process, however, much work needs to be done. While there are many NGOs working on trade issues, including those based in Geneva, local community perspectives have not really been integrated into both the analytical and political framework of most of these NGOs. While there is a lot of sympathy for local community interests, the main unit of analysis for many of these groups continues to be the nation state. The only way this can change is by intensifying the interaction between local stakeholders and international organizations working on trade.

In conclusion, although access and benefit sharing of genetic resources might seem to be a marginal issue in most countries, it presents a potentially important opportunity for promoting a progressive agenda on community rights to natural resources and their traditional knowledge and for the protection and sustainable use of biological resources. The challenge is immense, the stakes are high, it is not too late, effective intervention is doable.

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