Access to Genetic Resources, and Sharing the Benefits of their Use: International and Sub-regional Issues

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INTRODUCTION

1. THE INTERNATIONAL CONTEXT

This paper[1] looks at many key important aspects of two linked concepts: Access to genetic resources; and equitable sharing of the benefits arising from the utilisation of genetic resources (often referred to collectively as "access and benefit-sharing" or "ABS"). Before discussing the details of these concepts, however it is essential to understand their context.[2]

ABS is one of the three objectives of the Convention on Biological Diversity (CBD), which form the key pillars on which it is founded – *i.e.,*

- conservation of biodiversity,
- sustainable use of its components, and
- equitable sharing of the benefits from the use of genetic resources.[3]

It is clear, both from the text of the Convention, and from the experiences of the Parties, that these objectives are mutually supporting, so that progress on any one will enhance achievement of the other two, whereas a deficiency in one will cause all to be less effective or successful.

For ten years, the CBD Parties, Secretariat, and subsidiary bodies have grappled with this equity mandate, trying to find a way to ensure that it serves this critical function of linking conservation and sustainable use to real benefit. There are many obstacles to achievement of this objective, ranging from the lack of legal and other systems and experience, to the physical, cultural, and administrative "realities" which interfere with these efforts.

The Concept

In general, the issues of "access" and "benefit-sharing" are merged for purposes of discussion as "ABS," but there are many ways in which they are best understood separately.[4]

- ***Access:*** In the CBD, the term "access to genetic resources" refers to the ability of a country or its subjects or representatives to obtain the right to sample or study particular specimens of genetic material.[5]

[1] This paper was developed at the request of the SADC Secretariat, as part of the 2003 priority-setting workshop for the Southern Africa Biodiversity Support Programme. With permission from the Secretariat, it has been revised to enhance its accessibility in more general fora.

[2] With this discussion the authors are not attempting to explain the CBD, assuming that the participants are already well familiar with the Convention. The following brief discussion is designed to reinforce the relation of ABS to other parts of the Convention.

[3] CBD, Article 1. It is noted that in this initial statement of the convention's objectives, the term "equitable benefit-sharing" specifically includes many other concepts, including "access to genetic resources."

[4] In designating "access to genetic resources" as an area for in-depth discussion by COP5 and "benefit-sharing" for COP6 (decision IV/16, Annex II), the Conference of the Parties provided some initial recognition of this distinction. Subsequent discussions, however, did not separate the issues of access from those of benefit-sharing

[5] *Article 15* of the CBD addresses access to genetic resources for environmentally sound uses, calling for the fair and equitable sharing not only of benefits obtained from the utilisation of those resources (already stated in Article 1), but also of the results of research, development. Frequently, this obligation to share the

- ***Benefit-sharing***: As noted above, CBD identifies the "fair and equitable sharing of the benefits arising out of the utilisation of genetic resources" as one of its three overarching objectives.[6] For this purpose, the broad concept of benefit-sharing includes numerous other issues relating to genetic resources, such as access to genetic resources (Article 15), transfer of technology (Article 16), ownership/intellectual property issues, and financing issues. These issues are all inextricably bound together.

Since the Convention has entered into force, the concepts of access and benefit-sharing have continued to evolve and develop, but relatively little specific implementation has occurred, except in the context of Article 15.7. While the implementation of the express mandate of Article 15 is clearly an important component of the overall benefit-sharing concept, the development and implementation of systems for the administration of access policies and the payment of compensation (license fees, access payments, and "non-monetary benefits") to specific provider countries or communities is clearly only a part of the overall benefit-sharing objective.

In COP-6, the Parties to the CBD adopted an interim set of guidelines on ABS (the "Bonn Guidelines"), which identify and address a few elements relevant to creating a working system for ABS, at the national and international levels, while recognising that a great many other issues remain unresolved.[7] In the 20 months since that COP, the Parties have been called to consider many practical elements of ABS that have not been closely considered up to now. This effort became particularly important following the WSSD, which called on the CBD (or the governments present at the Summit) to develop an "international regime on Access and Benefit-sharing." In a few months, the COP will meet again, and will be called on to take some important decisions about what such a regime should look like, and how it should be created and implemented.

information is not attended to in Access and Benefit-sharing agreements, or is effectively eliminated by apparently minor provisions in the agreement regarding the rights to this information

[6] Article 1.

[7] CBD Resolution VI-26.

2. THE SOUTHERN AFRICA CONTEXT

Status of Biodiversity in Southern Africa[8]

In southern Africa, biodiversity is the cornerstone of the region's livelihood. Most people in the region, especially local communities depend on biological resources on a day-to-day basis for survival, especially those living near biological systems such as forests, farmlands, and coastal habitats. They also provide an important source of income through the sale of timber, energy, woodcarvings, household goods, and tourism (consumptive and non-consumptive) services. Biodiversity is also significant for purposes of maintaining ecological systems.

They are however being threatened by both human activity and natural causes. Species-rich wetlands and forests are being converted to species-poor farmlands and plantations. The sea-level rise and drought is also taking a toll on these resources.

Despite the danger of depletion, the region is still richly endowed in biodiversity. For instance, it boasts of a total of 23,404 *ta*xa and it is the only region in the world in which there is an entire plant kingdom. It has the highest recorded species diversity for any similar sized temperate or tropical region in the world. The highest species diversity occurs in equatorial areas of the region such as the Democratic Republic of the Congo because species diversity tends to be highly correlated with annual rainfall[9]. Endemism is also high in the region. Madagascar, for example, is very rich in endemic species, as are other islands such as Mauritius. On the mainland, areas rich in endemic species include mountain forests (mainly in the eastern part of the Democratic Republic of the Congo) and coastal areas such as Tanzania and Mozambique. In the arid areas, major centres of endemism include Botswana and Namibia.

Socio-economic Status of Southern Africa

The region, as defined by the SADC Treaty of 1992[10]., is relatively highly populated with an average population of 204,500,000 people in 2000, and an average annual population growth rate of 2.9 per cent from 1992 to 2000. Besides biodiversity, poverty is also rife in the region. There are presently about 50.1 million people living in absolute poverty, and 68% of the population had access to health in 1991. An estimated 42% of the population in 1991 had access to safe water and 35% had access to sanitation.[11] The general wealth status in the region, as informed by indicators such as GDP, is low. There is, however, a contrast in levels of wealth among the SADC countries. The World Bank estimated that countries like Seychelles, Botswana, Mauritius, and South Africa have per capita levels of more than US$2,500, while the rest of the SADC countries have per capita incomes of less than US$1,000.[12] The inflation rates are also high for a number of countries, for instance, Angola 10 per cent, Malawi 29.8 per cent, Zambia 24.5 per cent, and Zimbabwe 32.3 per cent.

Poverty, poor health and sanitation facilities have the potential of adversely impacting on the sustainable management of the environment and natural resources in the region. These are the main challenges, amongst other issues, that the SADC Treaty was promulgated to address.

Significance of ABS to Biodivesity Conservation

Access and Benefit Sharing mechanisms for genetic resources (ABS), as define above comprise key elements in natural resources management that contribute to the conservation and sustainable utilisation of biological diversity.

In prior years genetic resources primarily in the form of seeds moved via exchanges, theft, and other transfers, and continued to move as improved

[8] *Seeding Solutions: Policy Options for Genetic Resources: People, Plants, and Patents Revisited*; IDRC and IPGRI (2000) 1

[9] Chenje (ed) REPORTING THE SOUTHERN AFRICAN ENVIRONMENT (SADC/IUCN/SARDC 1998).

[10] Declaration and Treaty establishing the Southern African Development Community (SADC), done at Windhoek, Namibia, August 17, 1992.

[11] Chenje, *supra* n. 3

[12] Robert Kappel, 2001

varieties.[13] Today the movement of genetic resources is increasing due to improved technological inventions especially in the field of biotechnology. This has incrementally facilitated the transfer of seeds across species and nations. In many cases, another cause for the rapid increase in the flow of genetic resources is suggested – the rising perceived (potential and actual) value of the genetic resources. The figures being suggested are hard for developing countries to ignore. For example, some sources estimate the economic returns of trade in biodiversity to be as high as USD 32 billion per year.[14] The CBD itself has published estimates showing that the top 15 crops in the United States (with annual sales of USD 50 billion) originate from developing countries.[15]

Despite the apparent revelations of the importance of these resources, developing countries in the SADC region (especially the local communities and individuals supplying these resources and knowledge) have received insignificant or no benefits.

The above situation not only paints a picture of inequality, but also undermines efforts to conserve biological diversity and to ensure the sustainable utilisation of its components. If local communities, who are the custodians of the resources, receive equitable benefits from its uses, they would have a greater incentive to help ensure conservation.[16]

ABS in Southern Africa

Although mechanisms for sharing genetic resources have been in existence and practised in southern Africa for a long time, they have been formally recognised and popularised only recently, through the promulgation of the CBD and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA).[17] These two instruments should not be seen as competing but rather seen as complementing each other.

The remainder of this paper will outline and analyse the nature of ABS mechanisms at the international and SADC sub-regional levels, with the aim of identifying the major problems and how they impact on biodiversity conservation.

[13] Juma C.; *The Gene Hunters: Biotechnology and the scramble for seeds*; New Jersey: Princeton University Press (1989)

[14] Rafi; *Conserving Indigenous Knowledge: Integrating Two Systems of Innovation*; A study commissioned by the UNDP New York

[15] *Convention on Biological Diversity*; Nairobi: UNEP

[16] Mugabe J, Barber C.V, Henne G, Glowka L and La Vina A; *Managing Access to Genetic Resources: Towards Strategies for Benefit-Sharing*; Biopolicy International Series No.17; Nairobi: ACTS Press (1996)

[17] The ITPGRFA was negotiated under the auspices of the Food and Agricultural Organisation of the United Nations (FAO) to specifically regulate, *inter alia*, ABS of plant genetic resources for food and agriculture in harmony with the CBD. ITPGRFA, Art. 1.

IMPLEMENTING AND APPLYING ABS

1. THE MOST PRESSING LAW AND PRACTICE ISSUES

This section will briefly summarise the most basic of the many legal issues that present problems for the creation of an international regime for the access to, use of and sharing of the benefits arising from genetic resources:

- A discussion focused on defining what is covered by the ABS concept;
- consideration of the legal framework needed to create and oversee ABS contracts; and
- a brief analysis of the administrative framework that is currently promoted as the means by which the ABS concept will be implemented.

a.) *Coverage: What are "genetic resources"?*

At its most basic, the ABS concept is limited to "genetic resources."[18] It is generally recognised that lack of clarity about what the term "genetic resources" means is one factor that has complicated ABS implementation.

What then are genetic resources? Three CBD definitions are critical to answering this question: "biological resources," "genetic resources," and "genetic material" –

- 'Biological resources' includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value to humanity.
- 'Genetic material' means any material of plant, animal, microbial or other origin containing functional units of heredity.
- 'Genetic resources' means genetic material of actual or potential value.[19]

Upon reading these definitions there appears to be little difference among the three terms, since all plant, animal, microbial and other living or formerly living matter contains 'functional units of heredity' (dna and/or other proteins that have an apparent role in genetic/heredity processes). Any plant, animal, microbe, or part thereof could be considered 'genetic material.' However, a close reading of the Convention suggests that–

- "biological resources" refers to any specimen of a plant, animal, microbe, etc. (or any part or material from them), for any purpose.
- "genetic material" and "genetic resources" are intended to be much narrower terms. They can be thought of in two ways –
  - first, they refer to the genetic "code" or unique genetically defined characteristics of species, and
  - second, they apply only to the use of that code or of the scientific data regarding those characteristics.

Seen in this way, the distinction between 'biological resources' and 'genetic resources" makes logical and utilitarian sense: "Genetic resources" refers not to a type of material, but to a specific kind of *use* – the sampling and commercial application of genetic information and related biochemical properties.[20]

[18] In current discussions, "access and benefit-sharing" are limited concepts, relating to the utilisation of "genetic resources." Hence, this paper will focus on access to genetic resources, and equitable sharing of the benefits from those resources.

[19] CBD, Article 2. Slight variations in the manner in which these definitions are expressed in French and Spanish do not alter the interpretation presented in this article.

[20] These are generally thought to be non-consumptive uses, since the user needs only some samples of the material, to unlock and utilise its genetic code This (the idea that only a very small sample will be taken by those who use genetic resources) is the general belief of decision-makers and is included in most of the papers and decisions of the CBD COP. Recent research being completed under the IUCN-Environmental Law Centre's "ABS Project," however, indicates that in many situations the bioprospector will not be able to cultivate the specimens *ex situ,* or to synthesise the genetic and biochemical compounds in the samples taken. In those cases, the bio-prospector will often

Although it is sensible, this definitional approach is at the heart of the current problems preventing the implementation of the ABS objectives, because ***the same resource (specimen) is treated differently based on how it will be used, while the process requires negotiation of contracts and other actions before any use has been made.*** By the time the resource is used, the samples are usually outside of the jurisdiction of the agencies that conducted the negotiation and signed the contracts. This means that most source countries will not be able to know how the resource is being used, or to enforce their permits and contracts against a bioprospector who violates the use restrictions (makes commercial use of the genetic resources) after he has left the source country.

b) *Basic Issues of Property and Contract Law*

Contract and property law issues present another difficult problem, one that is not clear on the "face" of the Convention. From the earliest days after adoption of the CBD, conservation lawyers and CBD delegates strongly stated that

> "ownership of genetic resources would be determined under national law,"

and that

> "the implementation of access and benefit-sharing regarding genetic resources can be adequately addressed through existing mechanisms for negotiating, monitoring and enforcing contracts."[21]

The original source of these statements remains somewhat cloudy, although they were widely repeated and accepted, even within the CBD legal community. What is clear, however, is that they were made by persons with no professional experience in applying or developing national law in the fields of property and/or contracts. Before either of these assumptions can be tested, several basic changes are necessary in the national law of all countries involved in ABS contracts.

i) Law that must Underlay any Contract

After 11 years of trying to operate under the above assumptions, two simple facts remain true:

- First, no country has yet found or developed a workable legal framework that clarifies who owns genetic resources. The inability to pin down what a "genetic resource" is, makes it very difficult to legislatively determine who owns it (or more precisely, who has rights to dispose of it, to give access to it, or to receive benefits from it.) This issue is discussed in more detail below.
- Second, it is impossible to create a valid contract, unless the subject matter of the contract, and the nature of the rights involved, is clearly understood.

  > For example, it is possible for the two authors of this paper to write a contract that says that *"Young hereby grants Chishakwe all rights to* ***"do-si-do"*** *with the* ***"Űbermeisterin."*** However, no agency could administer that contract (and no court could enforce it), without first finding out that "do-si-do" is part of a North American dance, and "Űbermeisterin" is German for the "Lady Mayor." Then, before administration or enforcement would be possible, the agency or court would have to find out (at a minimum) whether Young has a right to decide who may do-si-do with the Űbermeisterin, and whether other people also have similar rights.

At base, all legal relationships must be based on certain legal understandings, including basic principles regarding the rights of the parties, and the nature of the subject matter that the parties are negotiating. For this reason, it was not enough for the CBD Parties to agree that relevant genetic resource issues would be covered by national property and contract law. It was and is necessary to *develop* new elements of property and contract law, to enable judges, agencies and others to understand, administer and enforce contracts and other legal relationships, with regard to a kind of right and commodity that has not existed in the world prior to the adoption of the CBD.

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return for a very large volumes of the originally sampled species or variety.

[21] Three relatively influential works on ABS that are based on these understandings are Ten Kate, Kerry, Commercial Use of Biodiversity 2000; Glowka, Lyle, Guide to Designing Legal Frameworks to Determine Access to Genetic Resources, IUCN Environmental Law and Policy Paper No. 34, 1998; and Glowka, Lyle, *et al.* Guide to the Convention on Biological Diversity, IUCN Environmental Law and Policy Paper No. 30, 1994.

ii) Other Contract issues: Prior Informed Consent and Mutually-agreed Terms

The Bonn Guidelines offer several specific suggestions about how the Parties should address the Convention's requirements that ABS agreements:

- must be based on the prior informed consent of the Parties,[22] and
- must be granted only on "mutually agreed terms."[23]

In essence, however, these provisions are merely underscoring the fact that Access and Benefit-sharing are matters that should be addressed through negotiations and documented in a binding way. Hence, these provisions say that, once the basic problems with contract and property law described above are resolved, ABS agreements may be handled in the normal way that contracts, conditional permits and other business relationships are handled around the world – through fair and mutual negotiations, backed up by a clear and binding document.

Virtually every country has legal or customary systems that provide that one may not be bound by a contract if he did not agree to it, or if his agreement was not based on a full and fair understanding of the facts. The CBD's provisions about prior informed consent say only that the country(ies)[24] involved in negotiation of an ABS Agreement must be accorded this same right.

Similarly, it is the nature of the term "agreement" that all parties to it must mutually "agree." The CBD's provisions for "mutually agreed terms" is included only to clarify that the source country is not ***required*** to grant access in all cases, but ***may*** grant it when there is mutual agreement about what is granted, and what is to be given in exchange, as well as key conditions (such as compliance with environmental protection and other requirements.)

Both of these statements are equally true, no matter what other requirements are placed on the ABS transaction, and apply to all kinds of transactions – contractual negotiations, permits or concessions, or other documents or agreements.

The Bonn Guidelines, by suggesting some basic principles for prior informed consent, and mutually agreed terms, appear to be focusing on standardisation among countries, who would otherwise address these matters in conformance with their general legislation governing contracts, permits, and other documents. In this regard, the Bonn Guidelines foreshadow the current move toward an international regime.

However, as noted above and below in this paper, there are two points that must be kept in mind about the Bonn Guidelines:

- The issues addressed in the Bonn Guidelines are those matters that are already available and legally do-able in most countries. These include:
  - the creation/designation of an administrative focal point and structure;
  - the development of a system and standard terms for contractual or permit creation,
  - public participation, and
  - identification of possible non-monetary modes of payment.

  They do not mention or provide guidance on the various legal, economic and practical issues that are preventing effective implementation of ABS;
- The Bonn Guidelines are voluntary and do not bind any country or any user corporation or institution, unless they are specifically included as a mandatory term of an ABS Arrangement ; and
- The Bonn Guidelines focus on ways that the source countries may change their legal and administrative systems to make it easier for corporations to enter into ABS agreements, but at present they do not offer any tools to enhance the source countries' bargaining power or understanding, or to enhance the effectiveness of

[22] CBD, Article 15.5.

[23] CBD, Article 15.4.

[24] Although the Bonn Guidelines focus primarily on informing individual communities, this is a matter that is purely within national jurisdiction. The CBD provides only that the "Contracting Parties" involved (that is the countries that are "Contracting Parties to the CBD" must give such consent.

ABS as a tool for supporting the conservation and sustainable use objectives of the convention.

a. ***Tools for enhancing the Source Countries' Bargaining Power and Understanding in ABS Agreements and Negotiations***

One of the most important mandates that has been repeatedly imposed by the CBD COP has been the call for information on ABS Negotiations, including

> "Assessment of user and provider experience in access to genetic resources and benefit-sharing and study of complementary options"

as well as

> "information regarding: (a) User institutions; (b) The market for genetic resources; (c) Non-monetary benefits; (d) New and emerging mechanisms for benefit-sharing; (e) Incentive measures; (f) Clarification of definitions; (g) Sui generis systems; and (h) 'intermediaries.'"

The conference of Parties has repeatedly noted that such information is "a critical aspect of providing the necessary parity of bargaining power … in access and benefit-sharing arrangements."[25]

All of the above-quoted language was taken from the decision of COP-5, which constituted the Terms of Reference for the Secretariat and the Ad-hoc Working Group in their intersessional work in developing the Bonn Guidelines. Unfortunately, to now, information has been provided on only two of the informational issues listed by COP-5 –

- "non-monetary benefits" – this provision is only a list of different non-monetary ways that the user may pay under a contract. This does not answer the real question – If the users of genetic resources are supposed to "equitably share the benefits arising from use of those resources," then don't the source countries need to know what the benefits ***arising from utilisation of resources*** are?
- "incentive measures" –Although it is clear from the convention that ***ABS should provide an incentive for conservation and sustainable use***, the "incentives" section of the Bonn Guidelines focuses only on ways to increase the source countries' incentive to enter into ABS agreements.[26]

The remaining issues are not addressed at all. To a large extent, the lack of attention to these issues is the prime reason that the Bonn Guidelines are still considered incomplete.

It is important, however, to consider why these issues have not been addressed. The primary reason is that the information requested is not available in the public domain – it is all held by user corporations and countries, who keep it confidential, and require the source countries to keep it confidential as well – as a required condition of their continued participation in the ABS agreement. This situation arises because the best interest of user corporations is served by not making this information public.[27]

Moreover, the objective of broader accessibility of this information is to increase the clarity and definiteness of the ABS system and its tools. Looking at the situation with the pessimist's view (which assumes that all people are primarily acting only in their own best interests[28]) it seems clear that the best interests of the user countries and user corporations are enhanced while the ABS issue is in disarray, and will be diminished when a formal ABS system is in place.

It is possible that many of the problems caused by source countries' lack of information can be resolved without assistance from users, if the source countries co-operate to increase their bargaining power and assert some level of control over the market.

b. ***Valuation***

For many countries, the most difficult issue is the lack of clear market information regarding the value of genetic resources. As a consequence, value is often determined by the user, who frequently determines the value of the genetic resource by

[25] CBD COP Resolution V/26.

[26] *See* Bonn Guidelines at para 51.

[27] See Vogel, Joseph, the Biodiversity Cartel (2000)

[28] This is a fair assumption with regard to corporations. Under most countries' corporate law, a corporation's primary objective must be to maximise the legal return given to its shareholders.

comparison to a non-genetic substance that is currently in use – an approach that ignores the very different objectives of ABS, and the fact that, once a genetic resource has been transferred, it is not clear whether it can be subsequently sold to another user (as discussed below.)

One thing is clear, however, when speaking of genetic resources, the value is not limited to the specific usability of a particular variety. One must consider elements of equity, practicality, and the need to ensure that ABS is an incentive to conservation and sustainability. In this way, it is clear that the value must recognise that the particular specimen might not exist at all, if its *entire ecosystem* had not been protected.

c. ***Genetic Resources found in Many Countries or Communities – Genetic Resources as Property and Intellectual Property***

One of the most difficult problems with ABS relates to the fact that genetic resources are treated in three completely different ways under the CBD and under most national laws:

- They are treated as physical substances (when the user obtains physical "access" to the resources, and the right to bio-prospect);
- They are treated as the property of the country that provides access, when the user negotiates the ABS agreement; and
- They are treated as internationally patent-able information, when the user obtains a patent for his work with them.

The consequences can be compared to a simple story – five people meet together and write a song. They all agree that any one of them is free to sell the song to anyone he or she chooses. Then one of them quickly sells the "exclusive rights" to the song for a large sum, and does not share with the others. Since the buyer has received the "exclusive rights" none of the others can ever sell the song again.

This is what happens with ABS at present. The genetic resource user pays only the country or community from which he collects the sample, but then he may patent his use of this resource against all countries in which the species is found. Realistically, if the international regime is to function, it must choose between two views of genetic resources. ***Either***

i. genetic resources are a nationally owned resource (in which case the buyer should not be permitted to patent the resource, against any countries that are not part of the particular ABS agreement); ***or***

ii. they are an international resource (in which case no country should receive benefits from a resource without compensating other countries which also have that resource).

Special Provisions for Agricultural Plant Genetic Resources

In 2001, under the auspices of the UN Food and Agriculture Organisation, the International Agreement on Plant Genetic Resources for Food and Agriculture was adopted. Although that Agreement has not yet entered into force, FAO and the International Genetic Resource Institute (IPGRI) have reason to expect that it will do so in relative short order.

When it enters into force,[29] the ITPGRFA will create a mechanism for transfer of the genetic resources for varieties of a specific list of basic "food and agriculture" species. The ITPGRFA is fairly detailed in how these transfers will take place, but makes no attempt to specify how they integrate with the CBD's ABS provisions, or how they will fit into an international ABS regime.

The ITPGRFA is a particular important agreement, as it provides a concrete example of one way to approach ABS – by separating out one part of the overall concept (in this case a specific list of commonly traded agricultural varieties), and dealing with that. Presumably, other such issues could be separately solved, and these various single issues solutions could link together. In essence, ITPGRFA's approach was to identify the genetic resources that are most commonly being freely traded around the world now – the basic food product varieties (beans, rice, bananas, etc.) and create a mechanism for integrating and rationalising the current systems of handling those trades, organised

[29] Unlike most other MEAs, the ITPGRFA cannot really begin functioning until it has entered into force, since its primary mechanism and action is the creation of an international system for transactions in PGRFA – something that cannot be formally considered to have happened, until the Agreement is in force.

and approached in a way that will allow it to integrate into the developing ABS regime, when and if it is finally adopted.

Thus, although not yet in force, it is in many ways more important for countries to develop the institutional and other capacity to participate in the ITPGRFA[30] than in the International ABS regime, since

i. the ITPGRFA may be functional much sooner than the ABS regime, ***and***

ii. owing to it link to key millennium development concerns of poverty and hunger, the food-and-agriculture component of the international regime is much more important , than the as-yet unrealised income potential of ABS Agreements.

[30] The IUCN-Environmental Law Centre, through its BMZ-funded "ABS Project" is in the process of developing a "Guide to the International Treaty on Plant Genetic Resources for Food and Agriculture" as part of its "Environmental Policy and Law Paper series." Publication of this Guide is expected in March 2004 in three or four languages.

i. MAJOR PRESSING ISSUES IN THE SADC SUB-REGION

The discussion on ABS in southern Africa usually takes two forms: (i) current practices for sharing seeds and other genetic material (and their applicability as mechanisms for implementing ABS, and (ii) the possible development of a new ABS system or systems (at the sub-regional or national levels) reflecting the CBD and the ITPGRFA. The structure of this section will follow this format.

a) *Problems with Current ABS Systems*

Southern African countries, like most countries in the developing world, have not developed adequate formal ABS systems based on the CBD and/or on the ITPGRFA. However, what currently obtains is not necessarily an 'open access' system but rather an ineffective regulatory framework that is open to abuse and leakage of resources. Specific problems in these systems can be categorised as follows:

Mutually Agreed Terms

In the majority of the SADC countries, there is no formal legislative or policy provision that describes how parties should apply the requirement that access be granted on mutually agreed terms (MAT).[31] In essence, the MAT requirement is simply the basic contractual requirement of "agreement." The supplier of the genetic resource and the bioprospector must be in agreement regarding the terms and conditions of the activity, including on issues of prior informed consent and benefit sharing arrangements. Where the parties are at equal levels of bargaining power and understanding,[32] the achievement of true mutual agreement and understanding, can be taken to mean that the 'deal' is fair and satisfactory (absent non-disclosure of relevant facts.

Generally, in the region, contracts that convey genetic resources are usually research agreements. The actual provisions typically are biological-resource-based, that is, they often use a contract similar to a material transfer agreement (MTA). Bioprospectors in Zimbabwe, are bound by contracts that stipulates the terms and conditions as if for the collection of forest products.[33] There is no appreciation of the potential or actual value of the resource, and benefits are usually rigid.

This kind of contracting is often not appropriate for equitable arrangements regarding benefit sharing. A famous case in point is the agreement between University of Laussane (Switzerland) and a US based phamarceutical company on one hand, and the University of Zimbabwe and another Zimbabwe-based organisation regarding the collection and use of *swartzia madagascariensis*. The agreement, amongst other things, was interpreted by the University to enable them to obtain a patent on antimicrobial diterpenes, whose use was discerned from traditional knowledge. Because the Agreement did not address "genetic resource" issues (generally treating the matter as a forest extraction contract, key issues relating to the amount and nature of benefits were not mutually agreed upon, nor were the suppliers of TK involved in the negotiations.

In other cases such as in Malawi, institutional arrangements giving foreign collectors access to genetic resources are entirely within the discretion of the designated authority. While this type of simplicity may be appropriate for more conventional resource-extraction (biological resource) agreements, it does not facilitate equitable agreement regarding the bioprospecting for genetic resources and the sharing of the benefits arising from that use.

Prior Informed Consent

Prior informed consent (PIC)[34] is the language by which the CBD adopts the other key component of a valid contract. In essence, PIC requires that the supplier of the resource must fully appreciate the nature of the resource being sought, its potential or actual value and potential use before consenting to collection. In conventional contract law, this requirement is expressed in a combination of terms,

[31] CBD, Art. 15(4)

[32] Where one party's power or understanding is substantially greater than the others, an unsupervised process arriving at "mutual agreement" may actually impose unknown or unfair burdens on the less sophisticated or powerful party.

[33] Forestry Produce Act

[34] CBD, Art. 15(5)

designed to protect the parties against fraud, mistakes, misunderstandings, and wilful or unintentional failure to disclose relevant information.

A supplier whose consent was not based on a full appreciation of the context of the agreement has not really consented – in those cases the agreement is not informed and is therefore invalid. As discussed in the University of Lausanne case, inequitable sharing is not difficult to contemplate where the supplier exercises 'selective amnesia' and withholds crucial information such as the potential use or value of the sought resource.

It is clear, however, that the nature and amount of information supporting PIC in genetic resource transactions may be significantly different in from that needed to support a more traditional material transfer. Thus, as with MAT, it is probably not sufficient to rely on existing institutions to define and implement the PIC process in ABS. In the Seychelles, for example, access agreements are typically controlled through the Seychelles Bureau of Standards.[35] Applicants are held to informational standards that would be perfectly relevant to resource extraction permitting. Thus, they are not legally obliged to give information regarding of the resource, apart from the general statement that it is "for research." While this is appropriate where the question relates to harvesting forest products in bulk, it is not appropriate where the commodity being harvested is the right to use genetic information contained in the plant's cells. Genetic resource permits or agreements granted on this amount of data are not based on "prior informed consent."

Equitable Benefit Sharing

Under the CBD, the sharing of benefits should be "fair and equitable" – two terms that call on the concepts of basic justice that underly, and sometimes take precedence over the strict operation of law. The concept of "equity" is sometimes misunderstood, can be thought of in this case as a way of recognising that many countries and peoples have made a "historic contribution" to conservation, without which large ecosystems and many traditional concepts would be lost.

One interesting issue is who receives these benefits. In many cases, it is though that if ABS is to achieve its intended purpose of creating an incentive for the custodians, the benefits should be shared with the communities or individuals supplying the genetic resources. Others feel that it is important also to ensure that the government agencies and national constituencies also see a benefit, as these groups too make key decisions that have direct impacts on conservation and sustainable use.

There is no specific type of benefit anticipated for a particular supplier. Principles of equity would decide this depending on the nature of the supplier and the extent to which it can maximally benefit. Some types of benefit that have been offered include scientific and technological knowledge, skills enhancement, pecuniary payment on collection of resource, and royalties on products developed.[36]

In most SADC countries, at present, benefits appear to always accrue to the State, regardless of where the resource was obtained (*i.e.,* from State land, protected areas, or land inhabited by communities.) In Malawi for example, the National Research Council is empowered to retain for the state, all fees paid on bioprospecting approvals and for monitoring of the collection process. The fees paid by collectors revert to the State. This form of distribution often is used based on the expectation that the State will act as depository and use the benefits for the benefit of the country. This approach may make the key stakeholders (individuals or communities) feel alienated from the benefits.

Intellectual Property Rights of Local Communities

Traditional knowledge, and indigenous knowledge systems in general practised by local communities in the region to conserve biodiversity are not recognised or rewarded by the existing Intellectual Property Rights (IPR) regimes. Instead, IPR rewards specific innovations developed by distinct persons at a particular time. There is a "disconnect" here, which

[35] Seychelles Country Report; Proceedings of the 7th Southern Africa Biodiversity Forum (2002)

[36] Mugabe J, Barber C.V, Henne G, Glowka L and La Vina A; *Managing Access to Genetic Resources: Towards Strategies for Benefit-Sharing*; Biopolicy International Series No.17; Nairobi: ACTS Press (1996)

has been the underlying reason for many calls for a sui generis system for protecting discoveries based on genetic resources and traditional knowledge.

Most southern African countries still subscribe to existing IPR regimes. If ABS was to operate under such a legal framework, this would mean (for instance) that local communities would not be entitled to benefits arising from a new plant variety or plant-based cure, which had been developed incrementally and collectively over time[37]. This is a clear affront to the purpose of ABS, and has dire consequences for conservation of biodiversity.

b) Implementation Problems re: ITPGRFA-Based ABS System

As highlighted in the preceding sections, the promulgation of the CBD and the ITPGRFA formally recognised the concept of ABS as, amongst other things, an important tool for biodiversity conservation. Parties to these two international law instruments are expected to inculcate the provisions in these instruments into their domestic laws for purposes of implementation. The process of incorporation and implementation is subject to various challenges that may have a bearing on the overall effectiveness of the adopted ABS system. This section of the paper is going to examine these 'challenges' and further highlight how they may impact on biodiversity conservation. These challenges or problems can be classified as follows:

Capacity

Southern Africa, like the rest of the continent, has a clear gap in scientific and technological capacity[38]. Whilst the literacy levels are average[39], there is a clear gap in specialised skills. The general economic status of the countries, as illustrated above, is low creating a need for financial capacity, creating empirical challenges being faced by SADC countries.

For example, national legislation and institutional frameworks are currently unable to monitor and enforce ABS agreements[40]. Monitoring entails tracking the collection and use of the collected resources to determine whether they are being utilised in accordance with the agreement. This requires financial resources to set up tracking systems and human skills to effectively operate such monitoring mechanisms. Without such monitoring and enforcement, the provision on 'mutually agreed terms' becomes 'impotent', thereby compromising the intended biodiversity conservation benefits from ABS mechanisms.

The significance of Prior Informed Consent to biodiversity conservation, discussed above, can also be jeopardised if there is no institutional and technical capacity to implement the provision. There is need for human skills to examine, analyse, evaluate and validate the accuracy and implications of the information given by an applicant or bioprospector. If the supplied information is not verified, it may affect the nature of consent given by the resource supplier.

Other examples of capacity building intervention include research and development for purposes of developing national biotechnology industries. This is particularly important having regard to the advancement in biotechnology in 'collector countries' that are threatening the economic value of genetic material. Presently the economic importance of genetic resources is based on the fact they are not ubiquitous, and therefore the supply side is low. However, bio-technological development is threatening the supply advantage by increasing effective supply. New bio-technology is making it possible for bioprospectors to analyse the genetic make-up of any material using smaller quantities. The effect is that the value of one extract of genetic material obtained drops. This situation presents a threat to the effectiveness of ABS mechanisms in biodiversity conservation.

Developmental concerns versus ABS

The SADC region has very urgent developmental concerns such as poverty eradication, infrastructural development, and health in general and HIV/AIDS in particular[41]. Presently almost all of the national

[37] *Ibid.*

[38] Africa Environment Outlook: Past, Present and Future Perspectives; UNEP; Earthprint (2002)

[39] A. Prescot; *The Wellbeing of Nations*;

[40] Mugabe J, Barber C.V, *et al* (cited above.)

[41] SADC Regional Indicative Strategic Development Plan

developmental strategies of SADC countries are designed to tackle these issues. They therefore have precedence over other issues of national importance.

Whilst the development of ABS frameworks is pertinent for biodiversity conservation they may play 'second fiddle' to the urgent developmental concerns that currently exist. The probable consequence is bureaucratic delay in incorporation of ABS mechanism, and diversion of national resources (financial, human) to address the urgent concerns.

It is apparent therefore that notwithstanding the importance of ABS mechanisms, it cannot compete with the immediate developmental issues in the region. However, if ABS is introduced as a developmental issue and structured to fit within national developmental strategies, it may get the relevant attention and governmental support required for effective development and implementation.

Intellectual Property Rights

The successful implementation of CBD and ITPGRFA-based ABS systems can be thwarted by the existent International IPR regimes. Multinational companies, mainly from 'collector countries' with patented technologies are generally hesitant to share their technologies with developing countries, such as SADC member States, that do not have the same level of IPR protection as in their countries. The fear is that the technology will be reproduced, in these countries, without any reward or compensation accruing to them. This can frustrate the technology transfer and benefit-sharing objective of the CBD, and consequently encumber the desired results of conservation of biodiversity[42].

[42] Mugabe J, Barber C.V, et al. (cited above)

NEXT STEPS

1. INTERNATIONAL REGIME DEVELOPMENT

The development of an "International Regime" on access and benefit sharing is an exercise of the power of source countries, to insist that the Bonn Guidelines, which fail to improve the situation of developing countries, are not the end of international attention to this issue. In addition to the issues described above, the international regime will focus on other key international issues, including:

- The need for clear mechanisms of oversight, implementation, and enforcement of ABS agreements, after the user has acquired the samples and taken them (or the information extracted from them) out of the country;
- The need for clear rules and mechanisms for addressing the relationship of *ex-situ* collections to the ABS regime;
- The international policy question of whether to begin negotiation of an "ABS Protocol" to the CBD, or to try to put the regime into place in some other way.
- The need to consider a regional or multi-regional "collective" approach, under which the countries which are exclusively "source countries" or "provider countries" – *i.e.,* countries that do not have significant domestic industries that create or market the products of genetic resources – can band together to increase their bargaining power, in the face of the lack of credible information from genetic resource users on the value, markets, and mechanisms relevant to ABS; and

Unfortunately, at the international level, the availability of credible resources, standards and databases is somewhat limited. While there are a great many such documents available, nearly all have been created by particular groups that have particular interests to promote. Thus there are many "guidelines" that have been promulgated by industry groups, by *ex-situ* collections (herbaria, botanical gardens, zoos, gene banks, and agricultural variety centres), and by academics. After the disappointing results of the Bonn Guidelines, it is clear that there is still a need to develop standards that promote the interests of the source countries.[43]

[43] A list of such guidelines, including web-addresses at which they can be found, will be available at the meeting, for any participants that desire it.

2. SUB-REGIONAL REGIME DEVELOPMENT

Whilst ABS issues have been in existence for a long time in the region, they have only been recently formally recognised, as illustrated above. Sub-regional efforts for regulating ABS by government or non-governmental organisations are also only just 'sprouting'.

The principal sub-regional legal framework is the SADC Treaty of 1992 read together with the SADC sector Protocols. There is currently no instrument under SADC community law that specifically regulates or controls ABS. However, there are specific provisions in the recently adopted Protocol on Forestry (not yet in force) which address the access to and use of forest genetic resources..

Article 17 of the Forestry Protocol controls access and benefit sharing of forest genetic resources. Forest genetic resources are defined using the exact language from the CBD. Beyond this, however, the Protocol commits member States to adopt national policies and to implement mechanisms that ensure that access to the forest genetic resources is subject to prior informed consent and mutually agreed terms. It further obligates them to guarantee equitable sharing of the benefits derived from the use of such resources.

Member States are also called upon to develop a regional approach and harmonised legislation that regulates access to, and the management and development, of forest genetic resources (especially transboundary resources[44]), as well as the sharing of germplasm, the development of forest germplasm collection in the SADC Plant Genetic Resource Centre,[45] and giving a pledge of mutual support to member States asserting ABS rights against a third party.[46]

[44] Equity concepts for sharing benefits are specifically defined in the Protocol to address of forest genetic resources that are shared by two or more member States or that are of a transboundary nature. (Art. 17.)

[45] The SADC Plant Genetic Resources Centre (SPGRC) is non-profit inter-governmental institution that was established by SADC Member States for purposes of conserving plant genetic resources.

[46] (Art. 17.) A 'peer' support system will be applied wherever a member State asserts a right against a third party. It further authorises the harmonisation of national laws that regulate access and benefit sharing of forest genetic resources.

3. NON-GOVERNMENTAL ACTIVITIES AND SUPPORT

Currently, on the international level, there are several ongoing projects aimed at providing resources and valuable input to source countries:

- an IISD project on public participation and capacity-building for ABS;
- a Swiss project seeking to create a "voluntary certification" system for genetic resources, currently looking at the possibility of developing an international standard of bioprospecting;
- a UNU project focusing on implementation issues, especially with regard to intellectual property and "user (country) measures"; and
- an IUCN-ELC project focusing (in its first year of operation) on providing factual and legal input into the development of an international regime – with particular attention to assisting source countries in the development of their position in these negotiations, and in finding information that satisfies their needs to make an informed decision.
- a project of the University of California at Davis, comparing current legislation on ABS from countries around the globe, focusing on determining how these various national approaches can be integrated within an international regime;

For the present, however, most of the informational resources of these projects are still in development.

On the regional level, the SADC Plant and Genetic Resources Centre (SPGRC) is a non-profit inter-governmental institution established in 1988 through funding from the Nordic Countries. The centre was created to, amongst other things, conserve plant genetic resources. This includes *ex-situ* seed conservation; *ex-situ* field conservation; *in-vitro* conservation; *in-situ* conservation; and on-farm conservation.

The aim of the Nordic Support was to assist the Southern African Centre for Co-operation in Agricultural Research and Training (SACCAR) to establish the SPGRC, and a network of National Plant Genetic Resources Programmes (NPGRPs). These included National Plant Genetic Resources Committees (NPGRComs) that co-ordinate activities at national level and National Plant Genetic Resources Centres (NPGRC) that preserve the indigenous plant genetic resources (PGR) material.[47]

[47] SADC PRG Project www.ngb.se/sadc

RECOMMENDATIONS

There are a number of particular concerns that have been raised in this study, on which it is clear that regional work and positions should be considered. These include the following recommended actions:

- Collaborate in the development of a region-wide understanding of the concepts and definitions underlying an ABS implementation, utilising the informational resource being developed in the projects described above.
- Develop a unified regional position regarding the international policy issue – *i.e.,* whether the call for implementation of a global ABS regime must necessarily require the negotiation of an ABS Protocol.
- Begin discussions or negotiations over whether the SADC countries can increase their collective bargaining power by creating a "cartel" with regard to their biodiversity.
- Address capacity requirements at national level such as institutional, financial and research and development capacity needs
- Replace, amend or modify current national IPR laws and adopting a system that recognises and rewards traditional knowledge and innovations
- Work collectively to develop information relevant to

  (a) User institutions;

  (b) The market for genetic resources;

  (c) Non-monetary benefits;

  (d) New and emerging mechanisms for benefit-sharing;

  (e) Incentive measures;

  (f) Clarification of definitions;

  (g) Sui generis systems; and

  (h) 'intermediaries.'
- Develop a unified regional position regarding property and intellectual property rights with regard to genetic resources.
- Develop a SADC sub-regional legislative and policy framework (probably in the form of a Protocol to the SADC Agreement) on ABS that is in line with the socio-economic realities of the region.