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The CBD/TRIPs Relationship

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Introduction

The Convention on Biological Diversity (CBD) was adopted in 1992.[1] It aims to secure the conservation and sustainable use of biological diversity. The Agreement on Trade Related Aspects of Intellectual Property Rights (the TRIPs Agreement) was concluded in the package of agreements in the World Trade Organisation (WTO) in 1993. The TRIPs Agreement sets minimum standards for patents and other intellectual property rights (IPRs) in the 134 WTO members countries.

The complex legal, political and social links between intellectual property rights and the conservation of biodiversity and genetic resources are particular evident in the biotechnology sector. Genetic resources provide a store of knowledge and the raw material for the biotechnology industry. When knowledge and information are turned into a saleable product in a regulated market, individual plants and animals may so be transformed from public to private goods. Thus, balancing private and public interests in intellectual property which before the conclusion of the TRIPs Agreement was the responsibility solely of national authorities has become an international concern.

There has been much debate about the ethical, economic, environmental and social effects of IPRs, especially patents. However, real enhancement of knowledge on the relationship between CBD and TRIPs; and intellectual property and conservation of biodiversity must be informed by hard evidence obtained through case studies and impact assessments carried out in a range of different countries. This paper examines the overall relationship between CBD and TRIPs, including all the various factors affecting that relationship. Part 1 examines the relationship between TRIPs and CBD, Part 2 identifies possible areas of synergy and conflict, Part 3 looks at options for the current review of Article 27.3(b) and Part 4 identifies areas of future research for the participants in this project.

2. Relationship between CBD/TRIPs

The relationship between the TRIPs Agreement and the CBD is multifaceted and complex. The objectives of the CBD are: the conservation of biological diversity; the sustainable use of its components; and the fair and equitable sharing of the benefits arising out of the use of genetic resources.[2] Sharing of the benefits from the use of genetic resources is defined to include inter alia, " the appropriate transfer f relevant technologies, taking into account all rights over those resources and to technologies…"[3] Thus, technology transfer is highlighted as a method for achieving one of the CBD's three principal objectives, and intellectual property rights are identified as a significant aspect of technology transfer.

Two sets of rights are identifiable in the Convention in respect of genetic resources. The first set can be exercised over the genetic resources per se. The second set relates to the technologies that are based on those genetic resources. Cutting across both sets

[1] The Convention now has 170 parties.
[2] Art.1, CBD.
[3] Ibid.

of rights are the rights of traditional communities who have been the custodians of genetic resources and have the knowledge to exploit them in a sustainable manner. The language used by the CBD provides an interesting balance of the political implications of conservation. While Article 15 lays down standards for access to biological resources, signifying a flow from the biodiversity-rich developing countries, Article 16 deals with technology transfer, including biotechnology, with an emphasis on the obligations of technology-rich developed countries.

The TRIPs Agreement aims to provide a multilateral framework for promoting effective and adequate protection of intellectual property rights both to reduce distortions and impediments to international trade and to ensure that measures and procedures to enforce intellectual property rights do not themselves become barriers to trade. Article 7 states "protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations". Thus the underlying premise is that a properly functioning system protecting intellectual property rights can provide a positive environment for investment in the development and transfer of technology.

Three primary issues deserve consideration in examining the relationship between CBD and the TRIPs Agreement:

a) promotion of environmentally sound technology, access to and transfer of such technology ;
b) provision of incentives for conservation and sustainable use of biological resources;
c) handling of technology that may adversely affect the environment.

2.1 Access to and transfer of environmentally sound technology

Article 16 of the CBD states that both access to and transfer of technology among contracting parties are essential elements for the attainment of the Convention's objectives. States should provide and/or facilitate access to and transfer to other Convention parties of technologies relevant to the conservation and sustainable use of biological diversity. Article 16.5 provides that the Convention parties, recognising that patents and other intellectual property rights may have an influence on the implementation of the CBD "shall cooperate in this regard subject to national legislation and international law in order to ensure that such rights are supportive of, and do not run counter to its objectives". The caveat "subject to national legislation and international law" suggests that the cooperative arrangements between Convention parties are subject to the TRIPs Agreement (part of international law). This raises the question of which system is to prevail should a conflict arise? Would the objectives of the CBD be paramount? Would non-compliance with intellectual property rights obligations be justified if they cannot be supportive of the objectives of the CBD? [4] For instance, in the case where inaccessibility of a particular

[4] For instance the US government has pointed to this provision as potentially indicating authority under the terms of the Convention to compromise American patent rights on technology through compulsory licensing.

technology was perceived to be due to the presence of an intellectual property right, could the intellectual property right be seen to be working against the objectives of the Convention and be disregarded?[5] The consensus appears to be that the Convention itself does not support a rejection of patent rights through some form of compulsory licensing. Such an interpretation can only be sustained through interpretation by individual parties themselves. Indeed, this kind of interpretation would require sustained pressure by developing countries to show that intellectual property rights are in fact working against the conservation of biodiversity. The issue may actually be academic because only patented technologies held by the Convention parties themselves are likely to be transferred in a manner that does not adequately protect the patent rights and this can only be done on agreed terms.[6] It is generally acknowledged that the Convention could not require technology transfer over and above that which is allowed by the TRIPs Agreement.[7]

Article 16.3 of the CBD addresses the issue of access to and transfer of technology, which makes use of genetic resources to those countries, particularly developing countries, which provide the genetic resources. It provides for parties to take measures to provide access to and transfer of such technology on mutually agreed terms. Article 15 supports this by providing that sharing of results of research and development, and the benefits arising from the commercial and other utilisation of genetic resources should take place in a fair and equitable way, and upon mutually agreed terms, with the party providing such resources.

The TRIPs Agreement seeks to balance the objectives of promoting technological innovation and facilitating access to and transfer of technology through the provision of appropriate standards of intellectual property protection. It therefore reinforces the right of governments to adopt measures to prevent abuse of intellectual property rights by rights holders or practices that adversely affect technology transfer.[8] The TRIPs Agreement provides for the minimum standards of protection, meaning that WTO members are free to adopt higher standards of intellectual property rights protection if they deem fit. Furthermore, WTO members are free to determine the appropriate method for implementing the Agreement within their own legal system and practice.[9]

Article 8 appears to support this by providing that while formulating their intellectual property laws, WTO members can adopt "measures necessary to protect public health and nutrition, and to promote the public interest in sectors of vital importance to their socio-ecomomic and technological development…" The article appears to give fairly broad discretion to WTO members to evolve national legislation that suits their development (and environment) needs. So for instance, members may decide to restrict research or the development or use of technology to suit their development

[5] See Goldman, K., Compensation for the Use of Biological Resources under the Convention on Biological Diversity : Compatibility of Conservation Measures and Competitiveness of the Biotechnology Industry, 25 *Law and Policy in International Business* (1994), 695; Marguiles, R., Protecting Biodiversity: Recognising Intellectual Property Rights in Plant Genetic Resources, 14 *Michigan Journal of International Law* (1993), 322.

[6] Svarstad, H., National Sovereignty and genetic resources, in V. Sanchez and C. Juma (eds.) *Biodiplomacy: Genetic Resources and International Relations*, ACTS, 1994, p. 45.

[7] McDougall, C., *Intellectual Property Rights and the Biodiversity Convention: the Impact of GATT*, Friends of the Earth (UK), Feb. 1995.

[8] Article 8, TRIPs Agreement.

[9] See Article 1, TRIPs Agreement

and environmental needs, and therefore, implement alternatives to the current intellectual property rights model.[10] However, the proviso to the article may confine the autonomy given to WTO members. Measures adopted by members must be "consistent with the provisions of the Agreement". This seems to imply that no derogations may be made to the basic model of intellectual property rights provided under the TRIPs Agreement. Other provisions of the TRIPs Agreement which give guidance on its relationship with the generation and transfer of environmentally sound technology are Article 30 (right to provide limited exceptions to patent rights), Article 39 (obligation to protect undisclosed information) and Article 40 (right to adopt appropriate measures to protect or control restrictive practices associated with intellectual property rights which impede the transfer and dissemination of technology).

2.1.1 Classes of Transferred Technology

The classes of technologies that may be transferred include:

- Technology relevant to biodiversity conservation: these include techniques for surveying ecosystems, classifying organisms, and monitoring changes in biodiversity, forest replanting techniques, etc.

- Technology necessary to do genetic research generally: such as genetic engineering laboratory techniques, screening tests, and laboratory equipment itself.[11]

- Technology that enables imitation of existing biotechnology inventions: includes techniques, drugs or agricultural products.[12]

One of the important issues in the transfer of technologies is the capacity of developing countries to best utilise them. For instance, biological diversity monitoring and conservation techniques are expensive and may form a relatively small part of the package of reforms needed to stem biodiversity loss. Evidence does not appear to show that the most advanced biodiversity techniques are required in many developing countries to meet their needs.[13] Some of the techniques that would be appropriate are non-proprietary and indigenous. So far there has been little evidence/investigation to identify specific biotechnology products that would be needed for sustainable development.[14] The need for capacity building is therefore evident.

What may be needed are longer term national biotechnology capacity building programmes which use technology transfer as a component.[15] A component of such a

[10] See Environment and TRIPS, WTO Committee on Trade and Environment, *WT/CTE/W/8*, p. 21.
[11] It does not entail the revelation of how to identify and produce a particular drug.
[12] See Coughlin, M., Comment: Using the Merck-INBio Agreement to Clarify the Convention on Biological Diversity , 31 *Columbia Journal of Transnational Law* (1993), p. 337.
[13] Downes, D., New Diplomacy for the Biodiversity Trade: Biodiversity, Biotechnology, and Intellectual Property in the Convention on Biological Diversity, 4 *Touro Journal of Transnational Law* (1993), p. 21-22.
[14] Ibid.
[15] Juma, C., Policy Options for Scientific and Technological Capacity Building, in Reid et al (eds.) *Biodiversity Prospecting*, World Resources Institute, 1993.

strategy could be the trading of access to genetic resources for improved human resources development and training, information system and techniques and processes, which add value to the resources. The development of such a strategy as a means for developing countries to encourage innovation, rather than trade resources is useful in this context.[16]

Articles 12, 17 and 18 of the CBD, promoting training, information exchange and technical cooperation are therefore equally important for developing countries. The most successful types of technology transfer will often combine several elements, but must reflect the capacity of the recipient to absorb and use the technologies. Many of the softer technologies can be transferred on a non-commercial basis.[17] These may include: expert advisory groups, personnel exchanges, education and information dissemination. The appropriateness of the technology may include criteria such as environmental soundness, conformity to the development goals of the developing country, harmonisation with resource endowments and safety issues.[18]

2.2 Conservation and Sustainable Use of Biological Diversity

Intellectual property and the TRIPs Agreement are also relevant to other aspects of the CBD. For instance, the possible impact of the TRIPs Agreement on providing incentives for the conservation and sustainable use, or the possible use of intellectual property rights in recognising the contribution of the traditional knowledge and practices of indigenous and local communities.

2.2.1 Conservation of Biological Diversity

Article 27.3(b) of the TRIPs Agreement provides:

> "Members may also exclude from patentability: plants and animals other than microorganisms, and essentially biological processes for the production of plants and animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by *an effective sui generis system*..."(emphasis added)

An effective *sui generis* system may be one means of addressing concerns that have been raised about the possible implication of intellectual property rights for practices such as farmer-exchanged and farmer-saved seeds which may be important in promoting conservation and development of biological diversity, as well as addressing equity concerns.[19]

There has been a great deal of debate about the exact meaning of the term *sui generis*, in the case of plant varieties.[20] The fact that some form of protection is required by the Article implies that a *sui generis* system may still entail some form of intellectual

[16] Ibid.
[17] Achanta, A., and P. Ghosh, Technology transfer and the Environment, in Sanchez and Juma (eds.) *Biodiplomacy* (1994), p.164
[18] Ibid.
[19] Numerous plant varieties derive from the seeds that Southern farmers have selected and sown, thereby nurturing and conserving agricultural diversity for thousand of years. These practices have been the backbone of food security, and the basis of millions of communities' livelihoods.
[20] *Sui generis* means special or unique.

property right which confers a legally enforceable right on the rights holder, either to exclude others from certain acts in relation to the protected plant variety or to obtain remuneration in respect of at least certain uses of the plant variety.[21]

It has been suggested that cultivated plants may be subject to a specialised form of protection, e.g. plant variety protection (PVP) as prescribed by the International Union for the Protection of New Varieties of Plants (UPOV).[22] However, Article 27.3(b) does not refer specifically to UPOV or PVP. This appears to give WTO members considerable flexibility in meeting their obligations, than had there been a specific reference to UPOV. This flexibility could enable countries to provide their farmers the space to develop agricultural practices which enhance agricultural diversity based on national models of *inter alia*, seed exchanges and savings, and a rights system based on principles of equity. The debate about the meaning of sui generis has also generated various suggestions on forms of alternative protection, such as community intellectual rights[23] or traditional resource rights[24], which aim to take into account both ecological concerns of conserving biological diversity and equity concerns, while recognising the role and contribution of local and indigenous communities.

The review of Article 27.3(b), currently taking place in the TRIPS Council, has revealed that the WTO membership is unclear as to what an *effective sui generis system* is or should be, leaving the matter completely open to interpretation. Some developed countries argue that the model provided by UPOV, to which 44 mainly industrialised countries subscribe, is the best *sui generis* system to date.[25] Developing countries have joined both UPOV 1978 and 1991.

The rare studies conducted in countries where plant variety protection has been in effect for decades, such as the United States, show that this kind of legal system has resulted in: little impact in terms of stimulating plant breeding; reduced information and germplasm flows from the private to the public sector; a decreased role for public plant breeding and increased seed prices for farmers.[26]

The scope of the Article 27.3(b) exception in respect of *"plants and animals other than microorganisms"* and *"essentially biological processes"* has not yet become apparent. This will obviously become clear through the practice of states. However, the trend has been to interpret this exclusion narrowly so as to allow patenting which applies to multiple varieties.

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[21] See Anuradha, R.V., *Between CBD and TRIPs: what IPRs mean for Local and Indigenous Communities*, monograph (on file with author).

[22] UPOV unites 37 countries, including several Latin American newcomers, under a common regime to protect the interest of plant breeders. It was created in 1961. The original Convention was revised in 1972, 1978 and 1991. Countries are either party to the 1978 or the 1991 Convention. Membership of the 1978 Convention is now closed.

[23] Nijar, G.S., *Developing a Rights Regime in defence of Biodiversity and Indigenous Knowledge*, Third World Network, 1996, Penang.

[24] See Posey, D., and G., Dutfield, *Beyond Intellectual Property*, 1996, IDRC, Ottawa.

[25] See Annex 1 for list of UPOV 1978 and 1991 countries.

[26] See Butler, L.J. and B.W. Marion, *The Impacts of Patent Protection on the US Seed Industry and Public Plant Breeding*, University of Wisconsin, 1985; Butler, L.J "Plant Breeders" Rights in the US: Update of a 1983 Study, in *Intellectual Property Rights and Agriculture in Developing countries*, J van Wijk and W Jaffe (eds.), University of Amsterdam, 1996.

The inclusion of microorganisms as life forms capable of being patented pursuant to Article 27.3(b) is a result of the developments in national case law. The practice of extending intellectual property rights to life forms started with a well-known case in the United States in 1988 when the Harvard University "onco mouse" (a genetically engineered mouse designed to be more susceptible to cancerous cells) was granted patent protection. Since that time, life form patenting has grown with over 200 new life forms presently being considered for patent protection in the US. Hybrid species are being developed, as are genetic manipulation experiments with human tissues. In this regard, it is significant that the plants and animals exemption from patents does not cover plant and animal parts or clones. This would appear to narrow the exception. Among developing countries there is a difference in the approach to patenting of life forms, between those with high levels of industrial seed production, but low levels of biodiversity, and those with high levels of biodiversity, but lower technological development. The former are more inclined to accept the IPR based systems that support technological value added but negate traditional and local community rights.

2.2.2 Recognition of Traditional Knowledge

Article 8(j) of the CBD requires parties:

> "as far as possible and as appropriate, and subject to [its] national legislation to 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 …encourage the equitable sharing of the benefits arising from the utilisation of such knowledge, innovation and practices."

The emphasis of the Article on knowledge and innovation therefore makes it relevant to intellectual property rights. Thus the relationship between intellectual property rights and the knowledge and innovations of local and indigenous communities within the terms of Article 8(j) is of prime importance to developing countries in particular.

Aside from the prior informed consent procedures in Article 15 of the Convention, the ability of developing countries to initiate and conclude negotiations on access and benefit sharing is a significant factor in making the Convention's objectives effective. Given the quick pace and complexity of the biotechnology sector, the ability of developing countries to enter into bilateral agreements, with multinational companies, which ensure adequate remuneration and fall in line with both their economic development and their biodiversity conservation priorities. Evidence appears to suggest that biotechnology companies no longer expect free access to resources, and now support the concept of compensation. At the same time, it is important for developing countries not to expect compensation which renders the research and development process unprofitable.

Nothing in the TRIPs Agreement would appear to either prevent or to promote the development of additional measures that provide for the sharing of benefits with countries and communities providing genetic resources or traditional knowledge, as long as those measures do not violate the TRIPs Agreement's minimum standards. In the negotiations on the Agreement, negotiators did not address the issue of whether

new forms of protection are needed for indigenous and local communities that go beyond the conventional intellectual property rights concepts. Therefore, intellectual property rights-like measures that provide control over knowledge that is non-novel or that does not involve an inventive step within the terms of patent law make likely be considered outside the scope of the requirements of the TRIPs Agreement. The implications are that while any WTO member is free to formulate such measures that would apply within its jurisdiction, other WTO members would not have an obligation to provide similar protection in their countries.

At the same time, the CBD itself did not create any new intellectual property rights for indigenous or traditional peoples, or place governments under obligation to do so. Therefore, the existing models in the WTO and the World Intellectual Property Organisation (WIPO) will be the basis on which any new intellectual property rights are developed. However, it has been argued by some that the intellectual property rights regimes in existence today are inadequate to support the role of local and indigenous peoples in the conservation and sustainable use of genetic resources envisaged by the CBD.[27] This may largely be due to the limited criteria for the recognition of an intellectual property right, in particular in relation to indigenous and community knowledge. Some factors limiting the scope of current intellectual property right systems are:

a) intellectual property rights are the result of creative or inventive endeavor, creating an original product;
b) there must be an identifiable creator or owner of the intellectual property since most laws do not recognise collective and community ownership;
c) intellectual property rights are of limited duration after which the work/product falls into the public domain.

There is therefore a need to provide incentives for biological diversity conservation by adjusting the intellectual property system to fully recognise the different means of adding value to the biotechnology sector. One way would be an equal recognition of the value of traditional conservation and propagation techniques as compared to industrial and technological contributions to biotechnology.[28] In this respect, it has been suggested that a move away from a rights based model to a remuneration-based model may be useful. Taking such a pragmatic approach may in any case accomplish both remunerative and rights oriented functions.[29] Underlying the approach is the belief that the provision of effective and adequate compensation for the preservation of genetic resources and the development through traditional and local techniques of new plants is an important means to reverse the loss of biodiversity by maintaining the viability of traditional communities.[30]

Possible mechanisms for additional protection of indigenous knowledge to support innovation and biological diversity conservation may include:

[27] Caillaux, J., Between two Fires: Intellectual property rights over biological resources and the Convention on Biological Diversity, *Journal of Environmental Policy and Law in Latin America and the Caribbean*, Vol.1, No.1 (1994), p. 22.
[28] Ibid.
[29] Correa, C., Sovereign and Property Rights over Plant Genetic Resources, Commission on Plant Genetic Resources, Background Paper No.2, Nov. 1994.
[30] Ibid.

a) using existing intellectual property rights
b) creating, through legislation or other means, new forms of intellectual property rights
c) funding mechanisms
d) equitable sharing of the benefits arising from the contributions, including elements using traditional knowledge, made by indigenous and local communities
e) codes of conduct
f) rights in relation to cultural products and expressions, including cultural property
g) greater reliance on the laws of unconscionable behaviour and unjust enrichment.

Obviously, the possible role of intellectual property rights in recognising the knowledge and practices of indigenous and local communities cannot be considered in isolation from the other mechanisms detailed above, since these may prove to be more appropriate forms of recognition. A combination of several mechanisms may be needed to recognise the contribution of indigenous and local communities in the conservation and development of biological diversity and to promote the fair and equitable sharing of the benefits arising our to the utilisation of their knowledge, innovations and practices. For example, more formalised arrangements governing access to genetic resources may provide an important avenue for recognising local communities' contributions, and ensuring an equitable sharing of benefits. Codes of Conduct could be complemented by or involve contractual arrangements such as material transfer arrangements, detailing the conditions for transfer and use of genetic resources.

Existing intellectual property rights would not protect traditional knowledge as such, against, e.g. unauthorised commercial exploitation. Contractual law may be an appropriate mechanism to provide some level of redress. For instance, indigenous communities could withhold their knowledge except under licensing contracts providing for confidentiality, appropriate use and the sharing of economic benefits with the originators of that knowledge. Some knowledge may be capable of protection as confidential information, e.g. herbal remedies used by traditional healers over generations. Such knowledge is usually unpatentable since it would not necessarily be "new", despite the considerable effort taken in years of observation and experimentation with naturally occurring species. Nevertheless, confidential information as a form of protection may be more useful than other forms of intellectual property rights. (For instance, the formula for Coca-Cola is protected by confidential information)

In some instances, traditional knowledge can have certain economic value. For example, traditional knowledge may be used by the biotechnology industry to select plants for laboratory analysis, in a way that greatly reduces the cost of developing new commercial products. So while the traditional knowledge itself may not be patentable, it may provide a significant asset for others to obtain patents for inventions based on that knowledge.

The TRIPs Agreement provides for the protection of undisclosed information,[31] however, the WTO has not discussed whether this provision of the TRIPs Agreement

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may be relevant to the protection of indigenous knowledge. Australia is carrying out work on the scope and development of actions on the basis of common law principles of confidential information. And the publication of sacred secrets and materials from an Aboriginal community was successfully prevented using the law of confidential information.[32]

It is important to note that no WTO member is prevented from developing additional intellectual property rights, which it considers appropriate mechanisms for addressing the concerns of indigenous and local communities. However, the TRIPs Agreement requires WTO members to observe the principles of national treatment and most favoured nation (Article 3 and 4). So a country could not recognise patents or inventions by its nationals without doing the same for similar inventions by foreign nationals; neither could it discriminate among inventions by nationals of different foreign countries.

2.3 Technology Adverse to the Environment

One of the concerns about modern biotechnology methods is the possibility that new biotechnology products could be released unhindered into the environment; the effect of uniform new varieties on unknown and unquantified biological diversity provided by traditional varieties is the key to this concern. Other concerns centre on the environmental effects of the increased use of agricultural chemicals.

The TRIPs Agreement allows members to restrict research or development or the use of technology on the grounds of protecting the environment. Article 27.2 provides that a WTO member may exclude from patentability, inventions whose use would seriously prejudice the environment. But exclusion from patentability is only possible if i) the commercial exploitation of the invention is prohibited by the law of the member in question, and ii) the exclusion is necessary to prevent serious prejudice to the environment. It is not enough that the national law of the member contains prohibitions on exploitation. In other words, products cannot be excluded from patentability simply because they have not yet been approved under normal health and safety regulatory procedures.

3. Areas of Synergy and Possible Conflict[33]

It is apparent from the forgoing discussion that intellectual property rights are important under both the TRIPs Agreement and the CBD, although they approach the issue from different perspectives. Both agreements have wide international membership and acceptance, which is a powerful motivation for developing a mutually supportive relationship between the two regimes. Already there are developments underway to establish procedures for consultation and cooperation

[32] See *Biological Diversity and Intellectual Property Rights : Issues and Considerations,* Submission by the Government of Australia, Conference of the parties, Third Meeting, Buenos Aires, Argentina, 4-15 Nov. 1996, *UNEP/CBD/COP/3/Inf.20*.

[33] This section is drawn largely from *The Convention on Biological Diversity and the Agreement on Trade Related Intellectual Property Rights: Relationships and Synergies*, Conference of the Parties to the Convention on Biological Diversity , Third Meeting, Buenos Aires, Argentina, 4-15 November 1996, *UNEP/CBD/COP/3/23*, 5 October 1996, paras. 34-43.

between the Secretariats of the two agreements. The CBD Secretariat has observer status in the WTO Committee on Trade and Environment.

Both the CBD and the TRIPs Agreement provide some degree of flexibility in national implementation of their provisions; therefore there is considerable scope for implementation of both agreements to proceed in a complementary manner. However, specific legal or policy mechanisms that would create such synergy have yet to be identified. Nevertheless, some areas of policy coherence have generally been noted.

3.1 Synergies

a) Mutually agreed upon terms for access to genetic resources could include intellectual property rights as part of the benefits to be shared among parties to an agreement on genetic resources. Such intellectual property rights could be defined under TRIPs-compatible IPR systems.

b) The CBD Secretariat and the TRIPs Council could develop procedures for exchanging relevant information. Article 16 of the CBD imposes IPR obligations on the parties. Implementation of these obligations would likely fall within the scope of the notification requirement under Article 63 of the TRIPs Agreement. Countries implementing measures with implications for both agreements (e.g. rules requiring patent applications to disclose the country of origin of biological material), might report them both to the TRIPs Council and the clearing house mechanism for scientific and technical cooperation established under Article 18(3) of the CBD. Additionally they may include the information in national reports required under Article 26 of the CBD.[34]

c) Another possibility is requiring or encouraging patent applications to disclose the country and community of origin for genetic resources and informal knowledge used to develop the invention. There is already some evidence that such disclosures are being made in some patent applications.[35]

Of course, despite the presence of flexibilities in the CBD and the TRIPs Agreement, there is always the possibility for some conflict.

3.2 Conflicts

a) National measures to promote access to technology transfer under Article 16 could raise MFN issues if Convention parties and non-parties are treated differently, or national treatment issues if foreign nationals receive less favourable treatment. Moreover, if owners of proprietary technology are compelled to license

[34] WIPO and WTO already have an agreement formalising arrangements for the exchange of information in particular, copies of IPR laws and regulations received by the two organisations. Agreement between WIPO and WTO, Geneva, 22 December 1995.

[35] A recent study reviewed over 500 patent applications in which the invention involved the use of biological materials, such as those derived from plants and animals. Most were in the pharmaceutical field, some in areas like cosmetics and pesticides. The applications reviewed came from a number of jurisdictions, including France, Germany, the UK, Spain, the US and the EU. Of the applications involving plants, the country of origin was invariably mentioned unless the plant was widely distributed or well known. See Sukhwani, A., *Intellectual Property and Biological Diversity : Issues related to Country of Origin*, Paper prepared for the Convention on Biological Diversity, 1996.

technologies on grounds other than those prescribed by the TRIPs Agreement, the likelihood of conflict would increase.

b) Article 22(1) of the CBD provides that the Convention's provisions "shall not affect [a party's] rights and obligations…deriving from any existing international agreement…except where the exercise of those rights and obligations would cause a serious damage or threat to biological diversity". However, it is not clear how the Article would apply in the case of conflicts with the TRIPs Agreement. The TRIPs Agreement itself contains no explicit reference to the CBD or any other environmental agreement.

c) There is no clear mechanism for the resolution of possible conflict between the agreements in either of the agreements' dispute settlement provisions. The TRIPs Agreement uses the general dispute settlement process in the WTO.[36] The CBD provides for negotiation, mediation, conciliation, arbitration or submission to the International Court of Justice.

4. Review of Art 27.3(b)

During 1999, WTO members have been reviewing Article 27.3(b). The review is taking place at a time when attempts being made by major biotechnology companies to patent biological materials taken from developing countries are being resisted. Furthermore, the development and release of genetically modified seeds and crops are causing concern in various quarters. The review is also seen as part of a wider process that will determine what choices countries will have over their access to, sustainable use of, trade in and benefits arising from the use of plants, animals and biological processes.[37] There is concern that the results may affect a nation's capacity to provide food and livelihood security for its citizens.

Despite the ongoing review, most developing countries should have TRIPs-compliant legislation in place by 1 January 2000. Least developed countries have until 1 January 2005. Furthermore, the entire TRIPs Agreement is to be reviewed in 2000.

The review has involved, *inter alia*, information gathering exercises and exchanges. Relevant international organisations such as the FAO, the CBD Secretariat and UPOV have been invited to provide information on their activities which are relevant to the TRIP Council's own activities.[38]

It is thought the review will impact on negotiations in other international fora, including:

- Subsequent trade negotiations in the WTO such as the full review of the TRIPs Agreement in 2000 and the negotiations on the Agreement on Agriculture;

[36] Article 64, TRIPs Agreement.
[37] See Mulvany, P., *TRIPs, Biodiversity and Commonwealth Countries: Capacity Building Priorities for the 1999 Review of TRIPs Article 27.3(b)*, Discussion Paper, Commonwealth Secretariat, 1998.
[38] Tansey, G., *Trade Intellectual Property, Food and Biodiversity: key issues and options for the 1999 review of Article 27.3(b) of the TRIPs Agreement*, Discussion Paper, Quaker Peace and Service, 1999.

- Negotiations on the implementation of the CBD, particularly the Biosafety Protocol;
- Negotiations in the FAO on the revision of the International Undertaking on Plant Genetic Resources for Food and Agriculture and its submission to the CBD as a possible Protocol.

The following have been suggested as possible options for the outcome of the review of Article 27.3(b)[39]:

- Leaving the wording of the sub-paragraph as it is, and simply reviewing progress on its implementation;
- Extending the exclusions to patentability to include all living organisms and the associated knowledge for their conservation and sustainable use
- Removing the obligation to provide plant variety protection or ensuring that measures adopted are carefully tailored to a country's own needs – the *sui generis* option
- Deletion of the whole sub-paragraph, thereby allowing for no exceptions to patenting of living organisms and their accompanying intellectual property.

There may however be further options[40]:

- Delaying the review and the legislative timetable until after the full TRIPs review has been completed;
- Completing the current review in parallel with the full TRIPs review and the negotiation on the Agreement on Agriculture over subsequent years;
- Deciding on the issues of conflict between the CBD and the TRIPs Agreement before completing the review;
- Requiring satisfactory completion of the negotiation of the revision of the IU and its adoption as a Protocol to the CBD before completing the review.

5. Future Research

The full relationship between the CBD and the TRIPs Agreement still remains to be sufficiently elaborated and tested through state practice. This project provides an opportunity to participants to conduct country specific studies on various issues within the CBD/TRIPs relationship which will enhance knowledge and stimulate further dialogue between the interested parties in the relationship, at national, regional and international levels.

Some areas of futher research include:

- Comparative studies of the experiences of benefit sharing arrangements across countries and regions
- Exploring the use of the provisions in the TRIPs agreement on geographical indications to support small scale production using local resources based on traditional technologies and knowhow

[39] Mulvany, p. 2-3.
[40] Ibid., p.3.

- Comparative studies on the relationship between the provision of effective intellectual property rights and the transfer of environmentally sound technology
- Comparative studies on the relationship between access to and transfer of technology and:
  a) the conservation of biological diversity
  b) the development of local innovation

- Any other area which the participants would value more research

ANNEX 1

UPOV Membership as of May, 1999:

UPOV 1978	**UPOV 1991**
Australia, Austria, Argentina, Bolivia,Brazil,Chile,China,Colombia, Czech Republic,Ecuador,Finland, Hungary,Japan,Kenya,Mexico,Norway, Panama,Paraguay,Poland, Portugal,Slovakia, Trinidad and Tobago, Ukraine	Belgium, Bulgaria, Canada, Denmark,France,Germany, Ireland,Israel,Italy,Moldova, Netherlands,New Zealand, Russia,South Africa,Spain, Sweden,Switzerland,U.K., U.S.

Under the terms of the **1978 Convention** there are two exceptions:
Farmers are allowed to save seed for their own use and breeders are allowed to freely use the PVP varieties to develop new ones.

These exceptions are restricted in **1991 Convention**. The reason is that companies engaged in genetic engineering are getting broad patent rights to genes and species.

ANNEX 2

EXAMPLES OF NON-UPOV *SUI GENERIS* INITIATIVES IN DEVELOPING COUNTRIES[41]

LATIN AMERICA & THE CARIBBEAN
Of the 40 countries or so in the region, 11 are members of UPOV (all party to the 1978 Convention): Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Panama, Paraguay, Trinidad & Tobago and Uruguay.

Nicaragua
The Nicaraguan government sent a draft plant variety protection (PVP) bill marked "urgent" to Parliament in May 1999. The bill includes UPOV 1991 provisions. A modified draft was subsequently developed in the Parliament's Environment Committee containing the following deviations from the UPOV model. By June 1999, a form of compromise draft was adopted in general but not in specific terms. Parliament is still continuing with its deliberations. The substantial deviations are:

1. Discoveries may not be protected.
2. A plant variety shall be eligible for protection if it differs from another variety in several characteristics.
3. The definition of breeder and breeding is wider in scope: It covers anyone making use of crop improvement techniques.
4. It sets Plant Variety Protection apart from intellectual property and therefore seeks to comply with UPOV 1978, which expressly prohibits double protection.
5. A variety shall be deemed distinct if it bears at least ten characteristics that set it apart from commonly known varieties.
6. This law is subject to the rights and obligations under the CBD.

Costa Rica
Costa Rica does not have a law on PVP yet but plans are underway for one to be adopted by the end of the year for the purpose of compliance with TRIPS. It is intended that Costa Rica's Plant Variety Protection Law will be subject to the country's implementation of the CBD, which was formalised through the enactment of Law no.7788 entitled "Biodiversity Law" in May 1998. Article 82 of the Biodiversity Law, affirms that communities are the holders of *sui generis* community intellectual rights which exist and are henceforth recognised and protected by the State owing to the mere existence of cultural practices or knowledge related to genetic resources and biochemicals. These rights shall not be affected by Plant Breeders' Rights, patents or any other form of intellectual property applied to biodiversity and associated knowledge.

[41] http://WWW.grain.org. See Beyond UPOV, Examples of developing countries preparing non-UPOV sui generis plant variety protection schemes for compliance with TRIPS. July 1999

AFRICA

OAPI
The Organisation Africaine de la Propriete Intellectuelle revised the Bangui Agreement, which governs their common intellectual property regime. The new Agreement establishes in annex 10, a common Plant Variety Protection system and foresees that the OAPI member states will join UPOV by depositing an instrument of accession to the 1991 Act. Cameroon, Gabon, Ivory Coast and Senegal are expected to ratify by the end of this year.

SADC
The Southern African Development Community has concluded that UPOV is mainly appropriate to protect the interests of exporters of horticultural and ornamental varieties, but not generally all other interests in Southern Africa. As a result, SADC is currently drafting a common legislative framework for *sui generis* rights that protects the gamut of plant biodiversity as well as traditional knowledge of the local communities, in cooperation with the OAU.[42]

Zambia
The Zambian government has made it clear that in order to fulfill its rights and obligations under the CBD, its *sui generis* Plant Variety Protection system must recognise and reward the innovation of indigenous people and local communities. In this respect, their law, which is being drawn up with full stakeholder participation, defines innovation to include "any inventive input done collectively, accretionally, inter-generationally and over a period of time, in relation to genetic resources".[43]

A number of observations have been generated by the public consultation, including that the Act placed too much emphasis on protecting the rights of individuals, mainly breeders and seed companies, and remained silent on collective community knowledge and intellect.

Zimbabwe
Zimbabwe has had a plant breeders' rights system since 1975 but it is partial and non-compliant with UPOV. Zimbabwe had been revising its law to comply with UPOV 1978 but missed the deadline for joining (24 April 1999). It fears that the 1991 UPOV model compromises the country's need to fulfil its rights and obligations under the CBD.

OAU

[42] Press Statement on the Regional Workshop in Southern Africa on the Implementation of Article 27.3(b) of WTO/TRIPS, co-organised by the Biotechnology Research Institute, Community Technology Development Trust and the International Plant Genetic Resources Institute in Harare on 22-24 March 1999. See *BIO-IPR*, 12 April 1999.
[43] Edward D. Zulu, Rosemary M.Makano and Anessie Banda, "National Experiences and Plans to implement a Sui Generis System of Protection in Zambia", paper presented at the UPOV-WIPO-WTO Joint Regional Workshop on the "Protection of Plant Varieties under article 27.3(b) of the TRIPS Agreement", Nairobi, 6-7 May 1999. See *BIO-IPR*, 25 May 1999.

The Organisation of African Unity is currently developing an "African model Legislation for the Recognition and Protection of the Rights of Local Communities, Farmers, and Breeders, and for the Regulation of access to Genetic Resources".[44]

As regards the Plant Breeder's Rights component, it deviates from the UPOV in various ways:

1. Protection should be available to any variety that is distinct, stable, sufficiently homogeneous or well-defined multiline.
2. Plant Breeders' Rights are subject to the national law's provisions on Farmer's rights.
3. Broad compulsory licensing provisions are included.
4. The plant breeder's right is limited to the production and sale of the material of the variety and does not impinge on the rights of farmers to reproduce seed or on the rights of innovators to conduct research.

ASIA
Only China is a member of UPOV (1978 Act)

India
The final version of India' draft Plant Variety Protection Act[45] now before the Parliament, deviates from UPOV 1991 in several ways:

1. Nothing contained in the Act shall affect a farmer's traditional right to save, use, exchange, share or sell his farm produce of a variety protected under the Act except where… sale for the purpose of reproduction under a commercial marketing arrangement.
2. It makes specific and detailed provision for communities to register collective rights.

While UPOV 1991 seeks to restrict the freedom that the farmers enjoy through its latest amendment, the proposed legislation in India has provided for farmers' privilege akin to the one available under UPOV 1978. This divergence from UPOV 1991 could be the single most important aspect as the proposed legislation is implemented.[46]

Thailand
The Draft before Parliament also deviates from the UPOV model.[47] Among other things, it extends protection up to 12, 17 or 27 years depending on the type of plant; farmers get broad rights to use protected material; it creates a Plant Variety Protection

[44] African Model Legislation for the Recognition and Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Genetic Resources", Draft , OAU, Addis Ababa, June 1999.

[45] Ministry of Agriculture & Cooperation, Government of India, "The Plant Varieties and Farmers' Rights Protection Bill, 1998", No.18-136/97/SD-IV, New Delhi .

[46] Seed Association of India. Plant Variety Protection: Pros and Cons, 1990, New Delhi.

[47] Draft Plant Varieties Protection Act, Thailand.

Fund aimed at supporting research or conservation and development of plant varieties and requires profit-sharing agreements in the case of general domestic and wild plant varieties.

Bangladesh

The Plant Variety Protection Act of Bangladesh drawn up and approved by the National Committee on Plant Genetic Resources, is now part of public debate.[48] It is substantially different from UPOV:

1. All varieties, which are developed in any national public research institute (universities, research centres, etc), shall be considered the property of the people of Bangladesh, i.e. common property.
2. Breeding alone is not sufficient to justify commercial privileges. The variety must have immediate, direct and substantial benefit to the people of Bangladesh.
3. Hybrids may only be protected if the parents are available as community varieties in the public domain.
4. Plant Variety Protection is not available to national or juristic persons of countries, which are not party to the CBD.
5. Where a community variety, indigenous plant variety or wild plant variety has been used in the development of a protected variety, 25% of the revenue accruing from its commercialisation shall be shared.
6. Communities' and Farmer's rights are substantially provided for.

Pakistan

In April 1999, The Pakistan government confirmed its intention to join UPOV as its compliance with TRIPS Article 27.3(b), on the basis of draft national legislation modeled closely on UPOV 1991. After several months of open debate, the Government announced in July that it would no longer seek accession to UPOV and invited non-governmental organisations to participate in redrafting the bill in line "with national interests".

[48] Plant Varieties Act of Bangladesh, text proposed by the National Committee on Plant Genetic Resources, Dhaka, 29 September 1998.