# ACCESS TO PLANT GENETIC RESOURCES UNDER THE CONVENTION ON BIOLOGICAL DIVERSITY

**Paper by the Commonwealth Secretariat**

## Introduction

1. For the purposes of this paper, genetic resources mean genetic material of actual or potential value. Plant genetic material is to be understood as any plant material containing genetic information which is capable of self reproduction or of being reproduced in a biological system containing functional units of heredity which may be utilised for practical applications.

2. The importance of plant genetic resources is now widely recognised especially, but certainly not exclusively, for their potential in biotechnology and industrial applications (e.g. in the production of new plant varieties and new pharmaceutical products). It is also widely accepted that biological and genetic diversity in general have an important role to play in the daily livelihood of indigenous and local communities worldwide, as an immediate source to satisfy basic health and food needs, as well as to maintain and strengthen their cultural and spiritual beliefs.

## The 1992 Convention on Biological Diversity

3. The objectives of the Convention on Biological Diversity 1992 (CBD) as set out in Article 1 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 utilisation of genetic resources.

4. The CBD provisions on access are set out in Article 15. It recognises the sovereign right of states over their natural resources and empowers them to determine access to their biological resources in accordance with their national legislation.[1] Such access shall also be subject to prior informed consent (PIC) of the state providing such resources.[2] It also requires that access to such resources shall be on mutually agreed terms.[3] However, while these provisions accord with the principle of customary law which recognises a state's exclusive right to regulate ownership of property within its territory, article 15(2) places an obligation on every contracting party to endeavour to create conditions to facilitate access to genetic resources for environmentally sound uses and to refrain from imposing restrictions that run counter to the objectives of the CBD.

5. Benefit sharing is also particularly important in the context of article 8(j) of the CBD which refers to the use of the knowledge, innovations and practices of indigenous and local communities with the approval and involvement of these communities.

6. While this provision offers a potentially valuable opportunity to developing countries and local communities in those countries to control access to their resources and to derive benefits from their utilisation, a large number of developing countries, most of them CBD contracting parties have yet to take concrete steps to implement this provision.

7. A central and still contentious issue in international debates regarding the CBD relates to alternatives and options through which contracting parties can effectively and equitably share in the benefits which derive from access to and use of their genetic resources.[4]

---

1 Article 15(1) of the CBD

2 Article 15(5) of the CBD

3 Article 15(4) of the CBD

4 The inclusion of Article 15 in the CBD is not without its political undercurrent. Access-related issues were some of the thorniest in the negotiation of the CBD. Prior to the negotiation of the CBD, the principle of free access to genetic resources was integrated into the non-binding 1983 International Undertaking on Plant Genetic Resources of the United Nations Food and Agriculture Organization (FAO). This concept is based on the assumption that genetic resources are the common heritage of humankind to which access must not be restricted. The gene-rich countries of the South rejected this argument and subjected their participation in the negotiations conditionally on the inclusion in the CBD of obligations and measures on three types of access: access to genetic resources, access to relevant

8. The underlying principle behind the CBD's provisions regarding equitable sharing of benefits from the use of genetic resources is based on a general understanding that the industrialised countries of the North which were "biodiversity poor" but economically powerful, have over decades and still continue to do so, used abundant freely available biodiversity and genetic resources from developing countries in the South which are "biodiversity rich" with no compensation for their access and subsequent use, especially in industrial processes.

9. Thus the CBD defines a new relationship between users and the providers of genetic resources, where a more equitable system is now provided which redefines the benefit flows from the use of genetic resources.

**The Relationship between Genetic Plant Resources and Intellectual Property Rights**

10. The impact of intellectual property rights (IPRs) on the objectives of the CBD is a complex and controversial issue.

11. IPRs raise socio-economic and ethical issues which have been the subject of ongoing discussions within the Conference of the Parties (COP) to the CBD. IPRs may be of relevance to at least three issues addressed under the CBD.

(i) Access to and transfer of technology, including biotechnology.

(ii) Benefit sharing, in relation to the use of genetic resources.

(iii) The protection of traditional knowledge, innovations and practices of indigenous and local communities relating to the conservation and sustainable use of biological diversity.

The main types of IPRs of relevance to this paper are:

- **patents**: patents grant a time-limited monopoly to the right holder to control the use, production and dissemination of a new product or process, for a specified period of time (generally 20 years);

- **plant breeders rights (PBRs)**: these are available for new plant varieties which are, novel, distinct, uniform, and stable.

12. PBRs are generally granted for a period of 20 - 30 years. They were developed within the framework of the International Convention for the Protection of New Varieties of Plants (known as UPOV)[5] to reward innovation in the development of new plant varieties at a time when patents were not available for living organisms. PBRs are an area specialised, or *sui generis* system of IPRs.

- **Trade secrets:** These protect confidential information, and allow the owner to stop unauthorised disclosure of the protected information.

13. In order to determine the practical impact of IPRs, the CBD COP has called upon governments, international and regional organisations to conduct case studies of the impact of IPRs and the knowledge, innovations and practices of indigenous and local communities.

---

technology including biotechnology and access to providing states to benefit ultimately gained from the use of genetic materials in the development of biotechnology.

They contended that it would be unfair to them if industrialised countries could freely access their genetic resources, then patent the products and consequently sell these patented products back to the country where the material was collected. They therefore insisted on having national sovereignty on their genetic resources. Since the coming into force of the CBD, there has been an ongoing process in the FAO to revise the 1983 International Undertaking on Plant Genetic Resources in harmonisation with the provisions of the CBD.

---

5 The International Convention for the Protection of New Varieties of Plants (UPOV) sets out standards for the protection of plant breeders rights, or plant variety rights. UPOV was adopted in 1961 to encourage innovation in plant breeding by providing exclusive rights for plant breeders in plant varieties which they have developed. UPOV has since been revised three times, the last revision was in 1991. The 1991 amendments which entered into force in April 1998, broaden the scope of protection marking the shift towards more patent like protection.

**Access To and Transfer of Technology**

14. The provisions of the CBD which deal with technology transfer are Articles 16 and 19. While these provisions attempt to address the relationship between technology transfer obligations and IPRs, however, they do it in a way which is ambiguous, and which has not yet been clarified by the COP. Articles 16 and 19 cover:

- technology relevant to the conservation and sustainable use of biological diversity;
- technology which makes use of its genetic resources.

15. No limitation is imposed on the type of technology. Indeed the CBD specifically includes biotechnology. The CBD encourages the effective participation in biotechnological research activities of the providers of genetic resources. The intention here is to build, through participation in biotechnological research, the capacity of a party which is a provider of genetic resources. For this purpose, parties to the CBD are required to create a legislative, administrative or policy framework, through which such effective participation can take place.[6] The CBD also promotes the sharing with the provider of the genetic resources.

16. Article 16 provides that where relevant technology is subject to an IPR such as a patent, the transfer must be on terms which recognise and are consistent with the adequate and effective protection of the property right. However, Article 16 goes on to provide that Parties are to co-operate to ensure that IPRs are supportive of and do not run counter to the objectives of the Convention. The practical effects of the apparent ambiguities in Article 16 are still unclear.

**Benefit Sharing and the Use of Genetic Resources**

17. In their current form, IPRs, including patents and PBRs, confer exclusive rights to the holder and do not require the holder to share any benefit derived from the exercise of the right, even where a third party may have contributed to the development of the product in question. By contrast, Article 15 of the CBD requires the sharing of benefits between users and providers of genetic resources.

[6] Article 19 of the CBD

18. But patents granted in respect of products derived from genetic resources do not require the holder to share any benefit with countries of origin, or with communities responsible for conserving the resources from which the product has been produced. Nor do they require the holder to share benefits with communities or individuals whose knowledge may have assisted in the development of the product.

**The Protection of Traditional Knowledge, Innovations and Practices of Indigenous and Local Communities**

19. Many indigenous and local communities possess special or traditional knowledge about biological diversity including plant genetic resources. Traditional knowledge can be defined as knowledge based on accumulated experience or continuous stage. Often such knowledge has not been committed to writing, but passed on from generation to generation by oral teaching or demonstration. Traditional knowledge encompasses information and know-how on a wide variety of matters, including natural resources management, traditional medicine, crafts and artistic designs.

20. Traditional knowledge and practices potentially provide a crucial lead for bio-prospectors[7] in search of new useful genetic

[7] Bio-prospectors are those engaged in "bio-prospecting." This refers to the collection, extraction and screening of samples of biological resources for potential use in pharmaceutical, agricultural and industrial applications. In a few cases, partnership agreements between the source country and the users of the biological resources have been negotiated, either for research purposes or for use in product development. Such agreements, known as access agreements or Material Transfer Agreements (MTAs) set out the terms under which any transfer of biological resources is to take place, including the making of provisions for the source country to share in any benefits derived from the utilisation of the resource. An example of a bio-prospecting arrangement is the agreement between the University of the South Pacific(USP), and the Strathclyde Institute of Drug Research(SIDR)in Scotland, to provide samples of biological resources collected from the Verata Tikina community in Fiji.

resources. In many cases, the use of traditional knowledge has been shown to increase quite significantly the probability of finding genetic resources of potential application in product development.[8]

21. Where, however, pharmaceutical companies go on to develop and commercialise products using the genetic resource concerned, based upon local knowledge and pre-existing uses, it has so far been rare
for the indigenous or local community from which the knowledge was obtained to derive any benefits from the use of that resource.[9]

22. To the extent that the application is not "novel" it is questionable whether such applications can qualify for patent protection at all. Article 8(j) of the CBD supports the rights and interests of indigenous and local communities to control access to resources and to share in benefits arising out of the use of those resources. It also provides a basis for indigenous and local communities to assert their own IPRs in relation to existing uses of biodiversity.

[8] Kava(*Piper mythesticum)* is used as a drink for ceremonial and social purposes in a number of
SouthPacific countries, namely, Fiji, Samoa, Tonga, and Vanuatu. Various foreign companies have patented the theraputic uses of kava. It is widely used in Germany where a high quality extract was pioneered by German researchers, both in root and herb form. More recently a French cosmetic company has patented the use of kava to reduce hair loss and stimulate hair growth.

[9] Mamala( *Homolanthus acuminatus)* samples of this small endemic tree which are found in Samoa,and which are an important component of Samoan ethnopharmacology were collected and knowledge was acquired from Samoan traditional healers by various American institutions. The Mamala has shown signs of having some impact on the HIV/AIDS virus. The patent held by these American institutions on the anti-viral composition of the Mamala does not indicate any terms of any consent or benefit sharing arrangements with the Samoan Government, local communities or the healers for the collection and the use of the resource and the use of knowledge.

**Can IPRs Protect Traditional Knowledge and Innovations?**

23. Traditional IPRs such as patents, are not presently capable of providing protection for applications of traditional knowledge and innovations, as patents provide exclusive rights and are granted to individuals or legal entities, rather than communities. Patents also protect the commercial use of inventions, and to be granted a patent an applicant would need to show novelty.

24. The shortcomings in existing IPR and PBR regimes and the need to protect the traditional knowledge of indigenous and local communities in the light of the increasing use of their knowledge by multinational corporations, have led to a number of alternatives, either specialised or *sui generis* IPR type regimes to protect the knowledge and innovations of indigenous and local communities.

- **Community IPRs** - This proposal would render the local community the lawful and sole custodians and stewards of all innovations. Community IPRs include any collective and cumulative knowledge of any use, properties, values and processes of plant varieties. Anyone seeking to us any innovation for commercial purposes would be required to make payments to the local community. The proposal would allow communities to register innovations with a Registry of Innovation to assist in protecting their interests.[10]

- **Community Rights Registers** - This approach would require the registration of the knowledge and techniques of local communities relating to biological resources, however information on the registers would be made available only with the consent of the community

[10] This model has been proposed by the Third World Network as an interim *sui generis* regime for the protection of plant varieties in accordance with the WTO Agreement on Trade Related Aspects of Intellectual Property Rights(TRIPs) 1995, and the Convention on Biological Diversity.

concerned, which could refuse access or set conditions.[11]

- **1985 WIPO/UNESCO Model Provisions on the Expressions of Folklore** - It has been suggested that these might form the basis of a *sui generis* system.[12] In particular, the Model Provisions allow communities (rather than just individuals) to be recognised as innovators; they recognise that community innovations may be ongoing or evolutionary; and therefore provide for ongoing protection, rather than grant IPRs which are of limited duration.

- **Geographical Indications** - The TRIPs agreement addresses the protection of geographical indications which are defined as indications which identify a good as originating in the territory of a member, or a region or locality in that territory, where given quality, reputation or other characteristics of the good is essentially attributable to its geographic origin. TRIPs requires WTO members to provide legal means to prevent misleading indications of geographic origin.

  It has been suggested that this might provide a model for a *sui generis* system for indigenous and local communities to control use of traditional knowledge and to control exploitation of products based on that knowledge.[13]

- **Traditional Resource Rights** - The term Traditional Resource Rights (TRRs) has been introduced to encompass many different types of rights relating to the traditional or customary use of resources by indigenous people and local farming communities. The term reflects an attempt to build upon the concept of IPR protection without restricting it to the concept of property, while recognising that traditional resources - tangible and intangible - are also covered under several other international agreements.

  This proposal suggests that there already exist in international agreements (such as human rights) elements which could form the basis of a *sui generis* regime for the protection of traditional knowledge and resources.[14] While there are some difficulties with the application of IPRs to TRRs, however, IPR legislation should not interfere with emerging principles of TRRs.

**The Relationship between the CBD and TRIPs**

---

[11] These rights have been proposed by some non-governmental organisations in India. Part of the rationale for having these registers is that they might assist individuals and communities in demonstrating their prior knowledge and use of resources, and therefore assist them in obtaining a share of benefits arising from its use. On the other hand, some fear that the registers risk placing information on knowledge of resources in the public domain, and therefore careful design is necessary.

[12] A sui generis system is a kind of its own. Article 27(3)(b) of the TRIPs agreement requires parties to protect new plant varieties either through patents, or a *sui generis* system or a combination thereof.

[13] Downes, 1997, and document UNEP/CBD/COP/3/22.

[14] See Posey and Dutfield 1996. Beyond Intellectual Property Rights: Towards Traditional Resource Rights for Indigenous Peoples and Local Communities. TRRs as a package of rights primarily aim at the protection of the traditional or customary use of tangible and intangible resources by indigenous people and local farming communities. Some of these rights have yet barely materialised in binding regulations, even though the necessity to strengthen them is widely recognised. There is also the difficulty of defining holders of TRRs. A further problem with TRRs is that some of the common legal terms and concepts - like property and tenure - cannot always be easily applied to social situations and relations existing among indigenous peoples or traditional farming communities. For indigenous people, property frequently has intangible and spiritual manifestations and any attempts at individual control, privatisation or creation of a commodity of these is incomprehensible or at least highly problematic.

25. The relationship between TRIPs and the CBD is still unclear, and there is a continuing debate as to whether these important legal instruments are in conflict with each other.[15] While the TRIPs Agreement neither explicitly addresses the issue of plant genetic resources nor mentions the issue of conservation of resources, it does provide under Article 27(3)(b) that new plant varieties must be protected either through patents, or a *sui generis* system or a combination thereof. It is argued that because of Article 27(3)(b) biodiversity falls firmly under the legal regime of TRIPs[16]

26. Article 27(3)(b) has been the subject of recent reviews by the TRIPs committee which took place in December 1998 and February 1999. No substantive changes were made as a result of these reviews, however, the expectation is that a further review of Article 27(3)(b) will be held in conjunction with the general review of the TRIPs agreement which is scheduled for the year 2000.

27. The CBD states that patents and IPRs may have an influence on the implementation of the Convention. Article 16(5) explicitly requires contracting parties to ensure that patents and IPRs are supportive of or do not run counter to the objectives of the Convention. On the other hand, according to Article 16(2) of the CBD, in the case of a transfer of technology which is subject to patents and other IPRs, access to and transfer of technology shall only be provided on terms "which recognize and are consistent with the adequate and effective protection of intellectual property rights."

28. However, the application of this requirement to recognise IPRs shall be consistent with the former statement, that IPRs shall be supportive of and not run counter to the objectives of the CBD.

29. The real question is whether WTO member states may invoke the objectives of the CBD in order to justify any measures which may be contrary to the TRIPs agreement. This is a question of conflict of laws for which neither the TRIPs not the CBD provides any special rules. It has been argued that in the case of a conflict between two countries being members of both treaties, the CBD would as the more specific treaty take priority over the more general TRIPs agreement.[17] On the other hand, it is possible that a WTO panel may take the view that the TRIPs agreement being the latter of the two treaties should take priority over the CBD.

30. Clearly there is an impact of IPRs on the question of ownership and use of plant genetic resources, however, while the CBD tries to address this relationship it appears that it has left the issue open and ambiguous. It is now left to the COP of the CBD to resolve this issue.

**Regional and National Approaches to Access**

31. Since the entry into force of the CBD, a number of access regimes have been developed at the regional and national levels. An example of a regional legislative initiative is that adopted by the Andean Pact member countries of Bolivia, Colombia, Equador, Peru and Venezuela on 17 July 1996. An example of national access legislation, the first of its kind, is the Philippines Executive Order No. 247 - Prescribing Guidelines and Establishing a Regulatory Framework for the Prospecting of Biological and Genetic Resources, by their by-products and derivatives for scientific and commercial purposes. Other countries have begun to implement Article 15 of the CBD and have done this a number of ways, including:

- **introducing specific legislation on access and benefit sharing;**
- **including access provisions within general environmental framework laws;**

---

[15] The conflict between the CBD and TRIPs appears to stem from the view that the CBD is founded on the principle that local communities generate benefits from and are dependent on biodiversity and should continue to benefit from it, while the WTO administers a global trading system, much of which is founded on the private monopoly rights of transnational corporations over biodiversity.

For further details see: Global Trade and Biodiversity in Conflict, Issue 1, April 1998, Genetic Resources Action International.

[16] Ibid

[17] Cameron and Makush, 1995: The UN Biodiversity Convention and the WTO TRIPs Agreement.

- **including in access provisions within legislation designed to implement a much broader set of objectives (e.g sustainable development, nature conservation and biodiversity);**

- **modifying existing sectoral laws in order to incorporate access provisions;**

- **modifying sectoral laws in order to incorporate access provisions;**

- **dealing with access and benefit sharing through individual contracts between providers and collectors.**

32. By far the most common approach to date has been the latter i.e. negotiating contractual bio-prospecting arrangements. These spell out the terms that will apply to specific samples of biological material. Appropriately drawn up contracts can meet many of the requirements on access and benefit-sharing provided for under the CBD. One example of a bio-prospecting arrangement is that between the USP, the SIDR and the Verata Community in Fiji.

**Conclusion**

33. While the provisions of the CBD offer a potentially valuable opportunity to developing countries and local communities in those countries to control access to their resources and to derive benefits from their utilisation, many member countries have not developed access legislation to regulate access to their genetic plant resources. Some member countries have already been approached by foreign companies and researchers seeking to carry out prospecting activities in search of genetic resources of potential commercial, e.g. pharmaceutical, application, but have no specific policies or procedures in place for responding to these approaches.

34. The issue of access to plant genetic resources as indicated above is a controversial issue which is still the subject of ongoing negotiations within the CBD COP and its institutions, and also within the relevant WTO bodies.

35. Member countries must avail themselves of the opportunity to take part in these negotiations. The relationship between the CBD and the TRIPs agreement is also an important issue. Member countries must endeavour to continue working towards a system of equitable sharing of benefits, which would recognise those responsible for innovation, and reward traditional knowledge provided by local communities. However, such access regimes must also create conditions which will facilitate access to genetic resources for environmentally sound uses, and not impose restrictions that run counter to the objectives of the CBD.

**Recommendations**

36. Member countries are urged to consider implementing the access provisions of the CBD and to develop effective access regimes either through regional or national approaches to ensure that there are adequate mechanisms in place, which will enable them to deal with approaches from corporations and institutions seeking access to their plant genetic resources, and also to ensure that their governments and local communities share from the benefits which are derived from it.

37. Member countries may wish to recommend that the Secretariat continue its work in this important field, and to facilitate assistance to member countries in implementing the provisions of the CBD, particularly in the development of a legal and policy framework on access to plant genetic resources.

April 1999