ISA Acervo ISA

INSTITUTO SOCIOAMBIENTAL
data ___/___/___
cod. L6 00056

The United Nations University

UNU / IAS

Institute of Advanced Studies

UNU/IAS Working Paper No. 17

Biodiversity-Related Aspects of Intellectual Property Rights (IPRs)

Eugênio da Costa e Silva

July 1996

Note: Eugênio da Costa e Silva is a Brazilian lawyer, a Ph.D. student at the Faculty of Law of the University of Edinburgh and a Ph.D. Fellow at the Institute of Advanced Studies of the United Nations University. He wishes to thank the "Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)" for the financial support to carry out his Ph.D. research.

BIODIVERSITY-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS (IPRs)

By Eugênio da Costa e Silva

1. THE SETTING UP OF NEW INTERNATIONAL REGULATIONS 1
2. ACCESS TO GENETIC RESOURCES AND RELATED ISSUES 5
2.1. A brief assessment of the application of the sovereign rights principle 6
2.2. Mutually agreed terms and the requirement of prior informed consent 8
2.3. Scientific research on genetic resources 11
2.3.1. The full participation of the provider 11
2.3.2. Fair and equitable share of the benefits 13
2.3.3 Measures to regulate biosafety 15
2.4. An overview of the legislative developments in Brazil 19
3. TECHNOLOGY TRANSFER AND IPRS IN THE CBD 26
3.1. Incentive to technology transfer with appropriate IPRs 28
3.2. Biotechnology, participation in research and sharing of benefits 32
3.3. Traditional practices and knowledge 34
3.3.1. A sui generis system and the TRRs concept 36
3.3.2. An overview of the legislative developments in Brazil 38
(a) Patentable subject-matter 41
(b) Non-patentable subject-matter 43
(c) Copyrights 44
4. A POSSIBLE OUTCOME OF THE WTO SYSTEM 46
CONCLUDING REMARKS 49
APPENDIX A 56
APPENDIX B 59

1. THE SETTING UP OF NEW INTERNATIONAL REGULATIONS

In the last decade, the debate on the protection of the environment has grown impressively. The progressive misuse of the environment has led to the destruction of natural resources, consequently threatening the "biological diversity"[1] that still remains in the world. Further, considering the industrial progress and the "needs" of modern society, dangerous consequences have been noticed in the climate and atmospheric conditions of the planet. As noted by Bergel, industrialised nations - on grounds of unlimited progress and free market principles - have been disrupting the balance between ecological systems. In fact, "the dominant paradigm of development is contrary to the inter-relationship between the various natural processes and the argument that human life is placed in an environment which does not exist to be destroyed"[2].

---

[1] See note 17, *infra*, for the definition of biological diversity.

[2] **Salvador Dario Bergel**, Desarrollo Sustentable y Medio Ambiente: La Perspectiva Latinoamericana, [1992] 41 *Revista del Derecho Industrial* 303-343, at 303. See, also, **Jorge A. Kors**, Nuevas Tecnologías y Derecho Ambiental, [1992] 41 *Revista del Derecho Industrial* 389-419, at 397, where he affirmed that there is a need to include an ecological dimension in the debate on industrial and technological development, aiming at maximising the quality of the environment when related to the negative repercussion of economic expansion.

Acervo UFSA

Within the UN system, concerns on environmental protection have been present since the early 1960s as a result of technical studies carried out by some UN organisations or specialised agencies in their specific field of activities. The growing importance of this issue, however, was formally recognised by the UN during the United Nations Conference on the Human Environment (UNCHE)[3], held at Stockholm from 5 to 16 June 1972.[4]

The UNCHE resulted in an Action Plan for the Human Environment[5], which rearranged all the recommendations approved by the conference, and a Declaration on the Human Environment[6], comprised of twenty six principles. Within this framework general principles were established, providing a basis for the necessary measures to protect the human environment and for an institutional framework to co-ordinate actions on environmental protection.

A Resolution on Institutional and Financial Arrangements[7] suggested the establishment of a programme, under UN auspices, to co-ordinate all environmental activities on national and international levels, to monitor the environment, to support environmental education programmes, and to attempt to create international laws, as well as to develop environmental guidelines and model laws to be used in the implementation of the Action Plan for the Human Environment. As a consequence, the United Nations Environment Programme (UNEP) was formally created by General Assembly Resolution 2997 (XXVII) of 15 December 1972[8].

Twenty years after the Stockholm conference, the United Nations Conference on Environment and Development (UNCED) was held from 3 to 14 June 1992 in Rio de Janeiro, Brazil. The UNCED approved the following instruments: the Rio Declaration on Environment and Development (the Rio Declaration)[9]; the Agenda 21[10]; a Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of all

---

[3]This conference was convened by General Assembly Resolution 2398 (XXIII) of 3 December 1968 (**Rüdiger Wolfrum & Christiane Philipp**, United Nations: Laws, Policies and Practice, London: Martinus Nijhoff Publishers (1995) V. 1, p. 488).

[4]A comprehensive chronological list of international arrangements in the field of environmental protection is available in **Edith Brown Weiss** (ed.), Environmental Change and International Law, Tokyo: United Nations University Press (1992), Appendix B, pp. 479-490.

[5]Published in 11 *International Legal Materials* 1421 (1972).

[6]Published in 11 *International Legal Materials* 1416 (1972).

[7]Published in 11 *International Legal Materials* 1466 (1972).

[8]UNEP is an integrated programme, not a specialised agency of the UN, although it enjoys a reasonable level of autonomy. It is comprised of the following bodies: the Governing Council, the Environment Secretariat, the Environment Co-ordination Board, and the Environment fund. See, for further information about the UNEP, **Rüdiger Wolfrum & Christiane Philipp**, United Nations: Laws, Policies and Practice, London: Martinus Nijhoff Publishers (1995), V. 2, pp. 1296-1304.

[9]Published in 31 *International Legal Materials* 874 (1992).

[10]Published in Earth Summit 1992, London: The Regency Press Corporation (1992).

Acervo ISA

Types of Forests[11]; the Framework Convention on Climate Change[12]; and the Convention on Biological Diversity (CBD)[13].[14]

Although other non-legally binding instruments which have arisen from the UNCED[15] contain principles and plans of actions relating with the conservation and the sustainable use[16] of biological diversity[17], the CBD will be used as a main reference in the present analysis.

The biological diversity of the planet is regarded as one of the most significant sources of products that may be developed in the future by multinational companies in the pharmaceutical and/or biotechnology fields[18]. Both economic sectors are planning their future based on the exploitation of the unknown resources that the world's biodiversity may provide. A high percentage of the products developed today in these areas come from the raw materials contained in the forests of developing countries. The CBD's approach to the use and exploitation of biological material is seen by the private sector as a critical threat to future plans. The uncontrolled use of these resources will be a significant threat to the environment and to the biological diversity that remains for present and future generations. These key economic sectors have, therefore, seen the environmental crisis, and the legal response thereto in the CBD, as a mechanism which might threaten future research into new products that use,

[11]Published in 31 *International Legal Materials* 881 (1992).
[12]Published in 31 *International Legal Materials* 849 (1992).
[13]Published in 31 *International Legal Materials* 818 (1992). The CBD has entered into force on 29 December 1993 (in *http://www.unep.ch/biodiv.html*) and, on 8 March 1996, has been ratified by 144 countries (in *http://www.unep.ch/bio/ratifica.html*).
[14]The full text of all the documents above-mentioned are also available in the Internet as follows: *gopher://infoserver.ciesin.org./11/human/domains/political-policy/intl/confs/UNCED/unced-finals*.
[15]Particularly the Rio Declaration and the Agenda 21.
[16]Article 2 of the CBD defines "sustainable use", for the purpose of the application of the Convention, as "... the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generation".
[17]Article 2 of the CBD defines biological diversity (or biodiversity) as "... the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems". Although the CBD did not attempt to define species within this context, it has provided a definition, also in Article 2, of "biological resources": "... includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity".
[18]**Darrell Posey**, Intellectual Property Rights and Just Compensation for Indigenous Knowledge, [1990] 4 *Anthropology Today* 13-16, at p. 15, estimates that the annual market for medicines derived from medicinal plants discovered from indigenous peoples is of 43 billion US dollars. Further, he reckons that "... less than 0,001% of profits from drugs that originated from traditional medicine have ever gone to the indigenous peoples who led researchers to them". See, for further estimates, **Stephen Brush**, Indigenous Knowledge of Biological Resources and Intellectual Property Rights: the Role of Anthropology, [1993] *American Anthropologist* 653-686, and UNEP Doc. N. UNEP/Bio.Div./Panels/Inf.2 (28 April 1993) Expert Panels Established to Follow-Up on the Convention on Biological Diversity - Report of Panel II: Evaluation of Potential Economic Implications of Conservation and Its Sustainable Use and Evaluation of Biological and Genetic Resources.

Archivo ISA

as a primary basis, genetic resources[19] which are found mostly in the territories of developing countries.

The use and exploitation of biological resources is undoubtedly one of the most controversial issues in the international debate. For example, during the signing of the Convention on Biological Diversity in 1992, the United States refused to accept "... the text's treatment of intellectual property rights ... technology transfer and biotechnology"[20]. Further, the Commission of the European Communities has expressed its concerns in relation to the interpretation given to some articles of the Convention, in particular Articles 15 (access to genetic resources), 16 (access to and transfer of technology), 19 (handling of biotechnology and distribution of its benefits) and 22 (relationship with other international conventions)[21]. It is possible to assume that - taking into account the reaction of the most important trading nations - when industrialised countries became concerned with the protection of the environment, their main interest was far from the protection of the environment itself. Economic and commercial interests have probably been of more importance, when included in this discussion, rather than the need to save the planet's biological diversity.

As highlighted by Lesser[22], "IPRs and biodiversity are conceptually unrelated, at least at the primary and secondary levels .... Where they are associated is through the Biodiversity Convention, and there in the public mind largely because then-US President Bush opposed signing in response to an interpretation unfavourable to IPRs".[23] Later, Lesser notices that the issues raised by the US focus primarily on modern biotechnology and, where the CBD establishes the right of national governments to control the access to genetic resources, in Article 15, it

> does not specifically refer to IPRs as is done in Article 16 (3). The connection may, however, be made by noting that IPRs would provide a possible mechanism for controlling the movement and use of genetic resources as authorised by this Article.[24]

---

[19]The CBD, in Article 2, defines "genetic resources" as "... any genetic material of actual or potential value", whether "'genetic material' means any material of plant, animal, microbial or other origin containing functional units of heredity".

[20]Declaration of the United States of America, as in 31 *International Legal Materials* 848 (1992).

[21]**Commission of the European Communities**, Draft Interpretative Declaration (on the occasion of the ratification of the Convention on Biological Diversity, (16 April 1993).

[22]**W. Lesser**, Institutional Mechanisms Supporting Trade in Genetic Materials: Issues under the Biodiversity Convention and GATT/TRIPS, Geneva: UNEP (1994), p. 22.

[23]The US eventually signed the CBD, under Clinton's administration, on 4 June 1993. See, for this information, **Joseph Straus**, The Rio Biodiversity Convention and Intellectual Property, [1993] 5 *IIC* 602-615, p. 608, para. 12.

[24]**W. Lesser**, note 22, *supra*, p. 23.

Acervo ISA

Concerns about environmental protection have raised several issues in connection with the exploitation of biodiversity, consequently changing the ecological and economic importance of the subject. The traditional concept of IPRs has been broadened substantially in accordance with the development of new technologies and the needs of modern society.[25] After the commitments achieved by the UNCED, namely the CBD, other aspects of intellectual property protection were raised.

The CBD's main objectives are three-fold: 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. These goals are to be achieved by appropriate access to genetic resources and by appropriate transfer of relevant technologies, which has given rise to the methodological division of this Working Paper. Access to genetic resources and access to and transfer of technology are however all inter-connected issues.[26]

2. ACCESS TO GENETIC RESOURCES AND RELATED ISSUES

For millennia genetic resources were regarded as "the common heritage of mankind"[27]. Although the CBD is the first legally-binding international instrument to admit that States have sovereign rights over their own genetic resources, the discussion on national jurisdiction to biological resources is not really a very contemporary one. UN General Assembly Resolution 1803 (XVII) of 1962[28] declared, for the first time, the permanent sovereignty of

---

[25]At the international level, several efforts have been taken to harmonise international intellectual property laws. The traditional international arrangements in this field are the Paris Convention for the Protection of Industrial Property (as revised at Brussels on 14 December 1900, at Washington on 2 June 1911, at the Hague, on 6 November 1925, at London on 2 June 1934, at Lisbon on 31 October 1958, and at Stockholm on 14 July 1967) and the Berne Convention for the Protection of Literary and Artistic Works (completed at Paris on 4 May 1896, and as revised at Berlin on 13 November 1908, completed at Berne on 20 March 1914, at Rome on 2 June 1928, at Brussels on 26 June 1948, and at Stockholm on 14 July 1967). Both conventions are administered by the World Intellectual Property Organization (WIPO) - created by the Convention Establishing the WIPO, signed at Stockholm, on 14 July 1967 (6 *International Legal Materials* 782 (1967)) - which has its headquarters in Geneva and is probably the most important forum for discussions on international intellectual property. Under the WIPO, the Paris and Berne Conventions are administered by a Union. The Chief Executive of the Union is the Director-General of WIPO.

[26]The objectives of the CBD, as well as the mechanisms described for attaining such objectives, are listed in Article 1.

[27]The expression "common heritage of mankind" has emerged from the UN's efforts to codify international law of the sea and of the outer space in the late 1960s. The concept includes the idea that some territories (such as the Antarctica) and some resources are of importance to all, and that "... they should be preserved in the common interest of all states, or explored and used in a way that allows all states to participate and enjoy their benefits" (**Rüdiger Wolfrum & Christiane Philipp**, note 3, *supra*, p. 149).

[28]*Apud* **Ian Brownlie** (ed.), Basic Documents in International Law, Oxford: Clarendon Press (1983), 3rd ed., pp. 231-234.

Acervo ISA

States over their natural wealth and resources and that national jurisdiction and legislation should apply for the control and the exploitation of these resources.

The Declaration on the Human Environment of 1972 also affirms, in Principle 21, that States have sovereign rights to exploit their own resources based on their own environmental policies. States are additionally liable to ensure that activities under their jurisdiction or control do not cause damage to areas beyond the limits of their national jurisdiction[29].

The provisions which have arisen from the text of the CBD have brought these issues on to a much more complex level of discussion, linking economic activities with sustainable use of natural resources by accepting the market value of the latter[30]. But the acceptance that genetic resources are within national jurisdiction does not appear to be exhaustive. There are several other concerns related to the conservation and sustainable use of these resources which were expressed by the CBD in connection with the exploitation of biological diversity.

The CBD recognises that genetic resources are within the sovereign rights of national States, which will have the authority to create legal mechanisms to control the use of these resources. The CBD, further to the application of this principle, affirms that access to genetic resources shall be facilitated, but such access should be with the prior informed consent of the country providing the genetic resources, which will also be entitled to a equitable and fair share of the benefits that may arise from the commercialisation of the resources. The country which provides the genetic resources shall also be entitled to participate in the scientific researches based on the genetic resources in question.

2.1. A brief assessment of the application of the sovereign rights principle

The CBD, in Article 15 (1), recognises that States have sovereign rights over their natural resources and that "... the authority to determine access to genetic resources rests with national governments and is subject to national legislation"[31]. There are several considerations which arise from the wording of Article 15 (1), CBD, which are to be taken into account in the context of the implementation of the general principle.

---

[29]Article 3 of the CBD literally repeats Principle 21 of the Declaration on the Human Environment.

[30]This link is made clear by the reading of the Preamble of the CBD which initially recognises "... the intrinsic value of biological diversity and of the ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values of biological diversity and its components". Further, while the CBD recognises States' sovereign rights over their biological resources it affirms that States are also "...responsible for conserving their biological diversity and for using their biological resources in a sustainable manner".

[31]*Cf* Principle 2 of the Rio Declaration.

Acervo ISA

It is not clear, in the light of Article 15 (1), CBD, whether the concept of sovereign rights precludes or reaffirms the concept of proprietorship in connection with access to genetic resources. In order to assess this apparent ambiguity, it is necessary to examine the wording of Article 15 (1), CBD, in more detail.

The concept of sovereignty emerged in the Middle Age from the notion that the sovereign had supreme power over his territory. This was regarded as necessary at that time to secure the power of a sovereign constantly threatened by civil war and by conflict with the Catholic Church. This concept has led to the notion of sovereign States, which has been interpreted in several ways through the centuries.[32]

Today, the concept of sovereignty of States is closely dependent upon the international legal order made applicable by the principles of international public law. Sovereign rights thus mean that a State is recognised by the international community as such, having legal personality, and that "[t]he legal competence of states and the rules for their protection depend on and assume the existence of a stable, physically delimited, homeland"[33]. It seems clear that the concept of sovereignty is mainly applicable to a specific territory where a particular State has exclusive jurisdiction[34]. Sovereign States are, therefore, responsible, under their own institutional/governmental framework, to rule upon the lives of their citizens and their public or private undertakings, to determine their legal obligations and the legal framework, and to exercise this power against the threat of other nations to their territory.

On the other hand, the concept of ownership, in this connection, seems to be closely related to the concept of sovereignty. The State is the proprietor of its territory establishing, through its constitutional framework, what is to be considered therein. Territorial sovereignty does not preclude the ownership, but merely reaffirms it[35].

Having said that, one must understand that the wording of the CBD, after giving emphasis to the sovereign rights concept in relation to access to genetic resources in the Preamble and Article 3, points out that States, in addition to the recognition of sovereign rights

---

[32]See, *e.g.*, **Celso D. de Albuquerque Mello**, Direito Internacional Econômico, Rio de Janeiro: Renovar (1993), p. 46, and **Malcom N. Shaw**, International Law, Cambridge/United Kingdom: Grotius Publications Limited (1991), 3rd ed., p. 25.

[33]**Ian Brownlie**, Principles of Public International Law, Oxford: Oxford University Press (1990), 4th ed., p. 108.

[34]As described by **Malcom N. Shaw**, note 32, *supra*, at p. 393, "[j]urisdiction concerns the power of the state to affect people, property and circumstances and reflects the basic principles of state sovereignty, equality of states and non-interference in domestic affairs. Jurisdiction is vital and indeed central feature of state sovereignty, for it is an exercise of authority which may alter or create or terminate legal relationships and obligations".

[35]Opposing to this argument, **Lyle Glowka, Françoise Burhenne-Guilmin & Hugh Synge** (in collaboration with Jeffrey A. McNeely and Lothar Gündling), A Guide to the Convention on Biological Diversity,

over their own natural resources, have the authority to determine by national law how these resources are to be exploited, in Article 15 (1).

It seems that the discussion of sovereignty in this context is vital for the debate and of paramount importance for developing countries which possess much of the biological diversity of the planet. If one begins to challenge the concept of sovereignty, as precluding ownership[36], this will involve a major change in the international legal framework by putting aside the development of the sovereign rights principle despite its well established historical and legal framework. Although it is possible to argue that the concept of sovereignty does not necessarily assume the State's ownership over genetic resources, this is not the question at this specific moment. Constitutional laws, indeed, may play a determinant part in this context by affirming the proprietorship of natural resources within national territory, but, as a matter of fact, the CBD in no way avoids the concept of States' proprietorship over genetic resources.

The CBD suggests mechanisms that will have to be considered by both developed and developing nations' legal practice when utilising genetic resources for scientific or commercial purposes. As a consequence, national law will have to provide detailed mechanisms to implement the principle of sovereign rights over genetic resources so that this could apply in practice. A more detailed analysis of measures to be considered by national law will be provided below.

2.2. Mutually agreed terms and the requirement of prior informed consent

Based on the application of the principle of sovereign rights, the CBD has also established that access to genetic resources shall be on mutually agreed terms and subject to "prior informed consent" (PIC)[37]. These are different, but complementary, measures which will be determined by national legislation in this field.

The expression "mutually agreed terms" as used by the CBD is not defined in the Convention but seems to imply the existence of two parties in a contractual relationship: the provider of genetic resources and the potential user of it. This relationship will be constructed by the consent of both parties and mutually agreed. The provider of genetic resources, the State, will have to define upon what terms this will apply, in combination with other aspects such as participation in research and development and the equitable and fair sharing of the

---

Gland/Switzerland and Cambridge/United Kingdom: IUCN (1994). p. 76, says that "... questions of ownership are not addressed by the text of the Convention, but are determined by national law".

[36]As **Lyle Glowka** *et al* , note 35, *supra*, has done.

Acervo ISA

benefits arising from the utilisation of genetic resources[38]. Glowka[39] understands that access agreements may become the most relevant mechanism to authorise parties to exploit genetic resources and to agree upon the terms of such exploitation. Therefore, either existing national contractual regulations or a more detailed form of legal mechanism will be created to provide the means of access agreements. A combination between the existing system regulating contract law and the system regulating access agreements is also foreseeable.

Some have suggested, for instance, "Material Transfer Agreements" (MTAs) as a mechanism that could possibly be used for regulating the relationship between the provider and the user seeking access to genetic resources. This type of agreement is commonly used by biotechnology industries and the academic community to facilitate the sharing of biological material aiming at mutual gain. At least two types of MTAs could be used for the purpose of accessing genetic resources: research-based and commercially-based agreements.[40]

It is possible to argue that such a contractual relationship, either through MTAs or through other mechanisms, between the provider and the user of genetic resources will contain at least the following clauses: (a) the type of genetic resources for which access is to be authorised and for what purpose (commercial or scientific/academic) it is granted; (b) in which geographical area, if any, such resources are allowed to be exploited; (c) research participation; (d) technology transfer and ownership (IPRs) of the results of research; (e) royalty fees for accessing genetic resources; (f) limits on third party transfer; (g) measures regulating the handling, transport, export and release of products arising from the research on genetic resources; (h) the duration of the access; and (i) dispute settlement.

The CBD additionally states that "[a]ccess to genetic resources shall be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by the Party"[41].

Although the concept of PIC is present only in one other international instrument[42], it seems to be an important mechanism for the sustainable use of genetic resources. The idea of

---

[37]CBD, Arts. 15 (4) and (5), respectively.
[38]Discussed further in Sub-section 2.3, *infra*.
[39]Note 35, *supra*, p. 80.
[40]MTAs, as a possible contractual tool for regulating access to genetic resources, are suggested by some authors and by the Conference of the Parties of the CBD. See, *e.g.*, **Walter Reid**, Biotechnology, Technological Change, and Regulation of Access to Genetic Resources, paper presented at the Global Biodiversity Forum '95, Jakarta, Indonesia, 4-5 November 1995, pp. 17-20; **Daniel Putterman**, Model Material Transfer Agreements for Equitable Biodiversity Prospecting, *mimeo* (1995); and UNEP Doc. N. UNEP/CBD/COP/2/13 (6 October 1995) Access to Genetic Resources and Benefit-Sharing: Legislation, Administrative and Policy Information, pp. 25-26.
[41]CBD, Art. 15 (5).

the introduction of the mechanism of PIC is closely related to the discretion of national legislation to regulate access to genetic resources. Although the CBD leaves discretion to the provider countries to decide whether to require prior informed consent or not, this seems to run counter to the objectives of the CBD itself. If there is no control for accessing genetic resources, or no prior consent authorising such access, the exploitation of genetic resources could be carried out without any further regulation, possibly causing damage to the environment, destroying genetic resources and, of course, being against the sustainable use of biological diversity. In my opinion, it is unlikely that national legislation will fail to include provisions on PIC when discussing access to genetic resources.

PIC will probably take place through a written certificate granting the third party in question an authorisation to exploit and use genetic resources under the terms and conditions of the agreement which has been agreed mutually before consent is granted. A government authority will probably have to be created (or an existing one will have to be empowered) to grant such certificates, and will have the additional tasks of analysing the conditions previously established by the agreement in question and of controlling compliance by the third party to the terms of the access agreement. Such a certificate will be probably based on the terms and conditions created by the agreement, and will be enforced by national laws of the country providing genetic resources. Probably, when establishing administrative mechanisms for granting or refusing access to genetic resources, national laws will also provide for some kind of administrative appeal against decisions denying access to genetic resources, and for penalties and sanctions for non-compliance with the terms of the access agreement or non-fulfilment of the requirement of having a written form of PIC before exploitation of genetic resources occurs.

Lastly, it is important to mention that for all that has been said above to take place, it is necessary that the country providing genetic resources has the capacity to analyse and negotiate all the information provided by the third party wishing to have access to genetic resources, as well as technical ability to assess whether or not such access will take place in an environmentally sound manner[43]. This technological capability may not be present in most of the countries which are providers of genetic resources, but can be built through technology transfer arrangements and through international co-operation among developing countries

[42]The Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposals, done at Basel in 1989 (**Lyle Glowka** *et al.*, note 35, *supra*, p. 80).

[43]**John Mugabe**, Governing Access to Genetic Resources: Emerging National Policy, Legal and Administrative Regimes, paper presented at the Global Biodiversity Forum '95, Jakarta, Indonesia, 4-5 November 1995, p. 3.

Acervo ISA

themselves. It also seems to be the task of the Conference of the Parties of the CBD to find mechanisms to be used in building up such capabilities.

2.3. Scientific research on genetic resources

As has been mentioned in the foregoing Sub-section, the CBD attempts to regulate the situation between the country providing genetic resources and the user. Genetic resources are recognised today as the main source of products for research in the pharmaceutical, biotechnological, and agricultural fields.

There are at least two types of research which will use genetic resources as a main basis and which shall be regulated by national legislation by virtue of Article 15 of the CBD. The country providing this genetic material will have to consider, firstly, if the resources in question will be used only for academic and research purposes, only for commercial purposes, or for both. This difference leads to distinct approaches which must be considered by national legislation and by access agreements.

The CBD requires that there be equitable sharing of the benefits of the use of genetic resources on a financial, scientific and technological basis. The sharing of these benefits shall moreover be in compliance with the other two objectives of the CBD, *i.e.* the conservation of biological diversity and the sustainable use of its components[44]. The sharing of the benefits is to be considered taking into account both how genetic resources are going to be used, if commercially or only for scientific purposes, and what type of benefits will be shared (financial, scientific or technological).

When countries providing genetic resources negotiate the supply of genetic resources to third parties, they will have to consider their participation in the scientific research that will be carried out, the sharing of the benefits arising from this research, and whether or not this research, or the result of it, may cause risk or damage to the environment or to human, plant or animal health.

2.3.1. The full participation of the provider

The CBD considers the level of technological development of developing countries which are the providers of genetic resources and suggests that scientific research based on genetic resources provided by a specific country should be with the participation of such country and

should take place in the provider country.[45] These provisions aim at encouraging appropriate transfer of technology and building the capacity of developing countries.

The wording of Article 15 (6), CBD, is general and not obligatory. The provision says that participation shall be encouraged in this manner. Although this seems to be addressed directly to developed nations' governmental agencies and private research companies, the letter of Article 15 (6), CBD, also appears to suggest that such mechanism should be encouraged by national legislation of the country providing the genetic resources and by access agreements.

These measures must be defined by national legislation and determined by the access agreements. The cost of participation in scientific research and the material for building capacity for provider countries shall be considered. Generally speaking, countries and/or undertakings utilising genetic resources for scientific research shall bear the costs of the participation of the country providing these resources.

In relation to the aspects of IPRs arising from research based on genetic resources, there are other important considerations. This seems to be a matter to be decided by the negotiations on the access agreements. Usually the participating country, as a contributor to the scientific research, should also be able to share the "ownership" of the IPRs which are a possible outcome of the scientific research in question. However, provider countries may consider giving up the IPRs of the outcome of scientific research if the user company or country invests considerable amounts in the transfer of relevant technology and on the human resources and capacity building of the country providing the genetic resources. A balance shall be permitted by national legislation and shall be considered in the setting up of national science and technology and industrial policies.

The issues about IPRs will also have to be considered in the context of the agreement itself. If the agreement is merely for scientific research with no commercial aim, it seems that the issues of IPRs could not be relevant if this scientific aim is explicitly referred to in the access agreement and no commercial end is envisaged. On the other hand, if the access agreement has the objective of directly or indirectly developing a product which will be commercialised, the issues of IPRs will have to be taken into account in more detail.

---

[44]CBD, Art. 1.

[45]CBD, Art. 15 (6). Similarly, the CBD suggest the participation of the country provider in scientific research based on genetic resources, in Articles 18 and 19 (1).

Acervo ISA

2.3.2. Fair and equitable share of the benefits

Article 15 (7), CBD, obliges Contracting Parties to take legislative, administrative or policy measures to share "... in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources". This shall be done on mutually agreed terms[46].

It is firstly necessary to mention that the wording of Article 15 (7), CBD, is addressed to both developed and developing nations, implying a two-way relationship. These measures (legislative, administrative or policy) will have to be complemented by each other's understanding of the results of research and development of genetic resources, and the research or commercial value of the genetic resources provided will have to be considered in a case-by-case basis.

Article 15 (7), CBD, makes a clear distinction between two benefits that may arise from scientific research based on genetic resources: scientific benefits, or research and development results; and the commercial or other benefits as an outcome of the research based on the genetic resources provided.

It is difficult to predict all types of benefit that might arise from the use of genetic resources, either as a result of pure scientific research or by the further commercialisation of these results, and how these benefits should be shared. Thus, national legislation will have to be flexible in considering the wide range of benefits that may be shared.

In relation to the sharing of scientific benefits, for instance, there are a few questions to be considered. One should bear in mind that the results of research and development may lead to the creation of products and/or technologies which may be deemed strategic for both parties, the country providing the genetic resources and the user who access has been granted to. In this situation, the sharing of the benefits may be based on technology transfer and support of the development of human resources. The provider country may, for instance, request the user of genetic resources to bear the costs of the participation of scientists in the research and development activities based on the genetic resources in question. The provider country may also request that the research and development activities take place in its territory and that the equipment and all infra-structure necessary to carry on the research be left in the country provider.

[46] *Cf.* Sub-section 2.2, *supra*.

The user of genetic resources may also suggest some conditions for sharing the benefit of the results of scientific research. He may, for instance, request to be the holder of the appropriate IPRs on the results of the research, and to be in a more favourable position to have access to other genetic resources in the provider country. He may also wish to have exclusive rights over those genetic resources for a specific period of time.

In considering the sharing of benefits arising from the commercial use of genetic resources, other aspects must be analysed. It is firstly necessary to mention that, when commercial activities are linked with research based on genetic resources, monetary benefits will play the most determinant part. Monetary benefits will take several forms in practice. The country providing the genetic resources may require advance payment for collecting genetic resources, payments for samples collected, minimum royalty fees for the future development of commercially valuable products, or a combination of all these. National legislation will also have to provide for mechanisms which recognise the value of indigenous and local knowledge in research on genetic resources. All these monetary benefits may be used as an additional fund to promote the sustainable use of genetic resources and, therefore, to protect biological diversity.

It is also important to note that Article 15 (7), CBD, makes reference to Articles 16 and 19 of the Convention. The main purpose of this cross-reference is to provide further support for technology transfer from the developed to the developing world (Article 16), and to expand the participation of the country providing the genetic resources in biotechnological research and in the benefits arising from biotechnological research which makes use of genetic resources (Article 19)[47]. It also has the objective of enhancing the appropriate and effective protection of IPRs related to research on genetic resources (Article 16).

Article 15 (7) also refers to Articles 20 and 21 of the CBD, which deals with the financial mechanisms to support biodiversity conservation. It is possible that the Convention aims at suggesting that "... the agreed full incremental cost of sharing research and development results and other benefits could be financed through the Convention's financial mechanism, if the Conference of the Parties decides that such activities are potentially eligible for funding (...)"[48].

---

[47] **Lyle Glowka** *et al.*, note 35, p. 82.

[48] *Ibid.*, p. 83. The "financial mechanism" of the CBD is provided by Article 21 and supplemented by Article 20. Article 21, CBD, calls for the establishment of a mechanism funded by the Contracting Parties (particularly developed countries) to provide financial resources to developing countries under the framework of the Conference of the Parties of the CBD. Such mechanism should also consider the existing financial mechanisms to provide financial resources for the conservation and sustainable use of biological diversity. In addition, Article

Acervo ISA

2.3.3. Measures to regulate biosafety

Research based on genetic resources is likely to have as a final result products which are modified somehow by either traditional or modern biotechnology[49]. The modifications of the structure of living matters may have adverse effects on the environment and human, plant or animal health. It seems that, by its nature, modern biotechnology which genetically modifies living organisms by transferring genes between species, genera, and phyla, may be more likely to have adverse effects when deliberately released. This is also enhanced by the limited knowledge that modern science has on the future effects that products resulting from biotechnological research may have on the environment, human, plant or animal health.

As the CBD is designed to protect biodiversity by several means, including the use of biotechnological research techniques based on genetic resources, the issue of "biosafety"[50] is present, directly or indirectly, in several provisions. By virtue of Articles 8 (g) and 19 (3) and (4), the CBD directly addresses the subject on two levels: national and multilateral. In several other provisions, the CBD addresses the subject of biosafety mechanisms indirectly or as a means of implementing the main goal of conserving and using genetic resources in a

---

20 determines a commitment for all Contracting Parties to the CBD to fund the protection of biological diversity, also calling for additional funds from developed nations. It also takes full account of the specific needs of least developed countries in relation to funding and technology transfer.

[49]For thousands of years, man has used "traditional biotechnology", which includes *inter alia* the basic fermentation techniques, methods of selective breeding and cross-breeding of plants and animals (mostly cattle) and the production of serum and vaccines for human or animal health. The evolution of human knowledge, in general, and the developments of new technologies have brought research to very sophisticated levels. Therefore, "modern biotechnology" was made possible with the advance of knowledge regarding genetic and molecular structures. Its concepts include techniques of genetic engineering and other technologies derived from cellular and molecular biology, and the production of transgenic plants or animals (**Cícero Gontijo, Fernando Antonio Lyrio Silva, Francisco Eugênio Machado Arcanjo & Ronaldo Bayma Archer da Silva**, Contribuição à Compreensão do PLC 115, de 1993, Brasília: Assessoria Legislativa do Senado Federal, *mimeo*, 22 September 1993, p. 25, and **Willian Antonio Cerantola**, Estratégias Tecnológicas das Empresas de Biotecnologia no Brasil, [1992] 2 *Revista de Administração* 5-14, p. 7).

[50]Since the first studies on infections acquired within the laboratories where biological research was conducted, in the 1960s, the definition of "biosafety" was developed. The 1960s saw a great advance in biotechnological research enhanced by the development of new technologies in genetic engineering methods. In the mid-1970s the World Health Organization (WHO) published a manual on biosafety in which this concept was widened by the inclusion of questions related with the prevention of risks of various type, including physical, radioactive, chemical and biological risks. Developed countries, in particular European countries, started to issue regulations on the control of biosafety and, developing countries such as Brazil, with less biotechnological research capacity, regulated this issue for the first time in 1995 (**Carlos Médici Morel**, Biossegurança: Uma Nova Ciência?, *Anais da 47a. Reunião Anual da Sociedade Brasileira para o Progresso da Ciência*, V. 1 (July 1995), pp. 25-26). For further information on the existing instruments or guidelines dealing with biosafety measures see UNEP Doc. N. UNEP/Bio.Div./Panels/Inf.4 (28 April 1993) Expert Panels Established to Follow-Up on the Convention on Biological Diversity - Report of Panel IV: Consideration of the Need for and Modalities of a Protocol Setting Out Appropriate Procedures Including, in Particular, Advance Informed Agreement in the Field of the Safe Transfer, Handling and Use of Any Living Modified Organism Resulting from Biotechnology that may Have Adverse Effect on the Conservation and Sustainable Use of Biological Diversity, Annex II.

Acervo ISA

sustainable way[51]. This Paragraph analyses only the provisions which address the issues on biosafety in a direct sense.

Article 8 (g) of the CBD calls for the establishment of regulations to "... control the risks associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking also into account the risks to human health". The CBD by the wording of this provision has attempted to broaden the traditionally applied concept of "genetically modified organisms" (GMOs) by using the term "living modified organisms" (LMOs). During the negotiations of the CBD, it seems that the prevailing notion was that the risks of release of GMOs were present more widely in the context of biodiversity conservation and that, in some circumstances, traditionally developed or bred organisms could also pose risks to the environment and to the sustainable use of biodiversity[52].

The rationale of the obligation imposed by Article 8 (g), CBD, seems to be directly linked with national mechanisms for the control of the release of biotechnological research results, which should take place in a precautionary manner, based on the assessment of the risks and the subsequent management of the release of these products. It is, however, important to bear in mind that this obligation is addressed only to sovereign countries which are allowed to extend the application of such regulatory measures based on their own national legal framework. The CBD has, thus, approached the subject firstly on the national level to recognise, further, the need of a multilateral mechanism to control the release and handling of products that are the result of biotechnological research.

In Article 19 (3), therefore, the CBD has claimed that Contracting Parties should consider the need of a protocol to the Convention "... setting out appropriate procedures, including, in particular, advanced informed agreement, in the field of the safe transfer, handling and use of any living modified organism resulting from biotechnology that may have adverse effect on the conservation and sustainable use of biological diversity". By analysing the wording of Article 19 (3), CBD, one should consider firstly that the negotiators accepted the need of domestic measures, in the light of Article 8 (g), CBD, but recognised that national law would be aided by the establishment of international standards in this regard. The CBD

[51] *Ibid.*, UNEP Doc. N. UNEP/Bio.Div./Panels/Inf.4, states that it was agreed that other provisions of the CBD were also relevant to the discussion on the modalities and needs of a protocol on biosafety, such as Articles 6 (b); 7 (c); 8 (h); 14 (1)(a), (c) and (d); 17 (1); and 18 (3).
[52] **Lyle Glowka** *et al.*, note 35, *supra*, p. 45.

Acervo ISA

has also, by suggesting an assessment of the need for a protocol, accepted that the control of the release and handling of LMOs is necessarily a matter of concern to all, and the recognition of measures to regulate such actions should have a multilateral approach in order to be effectively applied in a harmonised way world-wide. The release, without control, of a product resulting from biotechnological research in any area of the planet could have adverse effects on the biodiversity in any other place, which would run counter to the objectives of the CBD.

In this sense, one may argue that national measures in this matter could be undermined by the establishment of multilateral measures for biosafety. It appears that the objective of the negotiators was nevertheless in the opposite sense, that the CBD recognised the need of national measures which would be aided and in the future harmonised by the establishment of guidelines created by the protocol.

Article 19 (3), CBD, aiming at the conservation and sustainable use of biological diversity, has also included a term which shall be analysed further: "advanced informed agreement". It is possible that the negotiators of the CBD intended, with this expression, to create a set of procedures, incorporated in the principle that States have sovereign rights to control the transfer, handling and use of LMOs, including the right to refuse the importation of LMOs. Advanced informed agreement sounds similar to the mechanism of PIC discussed above in Sub-section 2.2. It is probably a mechanism which grants States rights to refuse the importation of LMOs which do not fulfill the requirements established by national legislation or, in this case, by the protocol on biosafety under the CBD[53].

It is also important to note that the CBD does not necessarily claim that a protocol will be established. It merely calls for an assessment of the needs and modalities of such a protocol. In this way, the first meeting of the Conference of the Parties to the CBD, held in Nassau, Bahamas, from 28 November to 9 December 1994, established an "Open-ended Ad Hoc Group of Experts on Biosafety" (Biosafety Ad Hoc Group) with the mandate of considering the needs and modalities of such a protocol and assessing the existing knowledge, experience and legislation in this field. The Conference of the Parties to the CBD decided also to establish

[53]The importer of LMOs will probably have to provide basic information in relation to the organism that is intended to be imported into national territories, such as: the intended use, including the scale of use; the site for the intended use; information relating to the organisms, such as their common names, characteristics, where they are indigenous or commonly used; information on prior related releases; information concerning national risks assessments; information regarding the conditions of the release, for example, the quantity and time of release, the natural conditions of the geographical area where it is supposed to be released, and the characteristics of the flora, fauna and the environment that could be affected by such release; an analysis of the national socio-economic implications and impacts of the release; the type of transportation that will be used to transfer the organism, including the packaging and labelling characteristics; and information regarding the safe handling and use of the organisms (UNEP Doc. N. UNEP/Bio.Div./Panels/Inf.4, note 50, *supra*, Annex IV).

Acervo ISA

a panel of fifteen government-nominated experts to prepare a background document for the Biosafety Ad Hoc Group. The government-nominated experts group met in Cairo from 1 to 5 May 1995 and the Biosafety Ad Hoc Group met in Madrid, from 24 to 28 July 1995. The Biosafety Ad Hoc Group clearly concluded that there is a need for a protocol by virtue of Article 19 (3) of the CBD.[54]

It is also clear that the CBD, in addition to the call for an assessment of the needs of a biosafety protocol, further concluded that some bilateral-type of obligation on the import and export of LMOs was necessary. Article 19 (4), CBD, thus creates a bilateral obligation to provide information about LMOs before actual transfer of them takes place. Article 19 (4), CBD, establishes that "[e]ach Contracting Party shall, ... provide any available information about the use and safety regulations required by the Contracting Party in handling such organisms, as well as any available information on the potential adverse impact of the specific organisms concerned to the Contracting Party into which those organisms are to be introduced". This implies two types of obligation. The first obligation is the one which requires the exporting Contracting Party to provide information on the regulatory measures that it utilises for the safety handling of LMOs. In addition, exporting Contracting Parties could provide available guidelines and policies in this regard. This type of obligation is of a general character.

The second obligation is related to the supply of any information regarding possible adverse impacts of the LMOs which will be imported. The wording of Article 19 (4), CBD, *i.e.* "... any available information on the potential adverse impact ..." is very broad and seems to imply that the information in question could be concerned with adverse impact on biodiversity, as well as on human or animal health. In addition, this second obligation does not appear to require exporting Contracting Parties and private or public undertakings to generate information, but only to provide the information that is currently available[55].

Current negotiations on a protocol on biosafety lead one to think that such a protocol would contain at least the following provisions: (1) transfer of LMOs would take place after a minimum set of information is provided; (2) the supply of information must consider, primarily, the overall characteristics of the organisms, the potential receiving environment, and the interaction between these components; (3) regulation of biosafety should be based on a case-by-case and step-by-step approach, assessing whether or not there is enough experience

[54]See, generally, UNEP Doc. N UNEP/CBD/COP/2/7 (3 August 1995), Report of the Open-ended Ad Hoc Group of Experts on Biosafety.

Acervo ISA

and documentation available for the release of the organisms; (4) risk assessment and risk management should take place prior to the release of the LMOs; (5) assessment of the socio-economic impact of the release of organisms has to be provided; and (6) a clearing-house mechanism should be created to provide an effective link between national authorities, to support interaction among national authorities, to provide technical and scientific advice to national authorities, to establish relevant database on the release of LMOs, and to serve as the international body for overseeing the advanced informed agreement procedure.

Although that is not clear within the context of the negotiations of the CBD, a future biosafety protocol would need to contain clauses on liability and compensation in case the release of LMOs in the environment causes damage or risks to the conservation of biological diversity, human or animal health or life.[56]

2.4. An overview of the legislative developments in Brazil

As early as 1988, the Brazilian Constitution recognised the need to support environmental protection as a means of providing better standards of living for its population. The general constitutional principle, created by Article 225, *caput*, establishes that "[e]veryone has the right to an ecologically balanced environment, which is a public good for the people's use and is essential for a healthy life". Additionally, Article 225, *caput*, Brazilian Constitution, affirms that both the government and the community "... have a duty to defend and to preserve the environment for present and future generations".

By establishing such a principle, the Brazilian Constitution acknowledges the value of environmental protection as a means of protecting the public interest in a higher quality of life for its population which is to be considered as beyond the discussion about economic development, focusing primarily on social development and duties.[57]

Several measures to be taken by governmental authorities are listed in Article 225 (1), Brazilian Constitution. Among others, the government must preserve the country's genetic patrimony and supervise "... the entities dedicated to research and manipulation of genetic material"[58]. Moreover, Article 225 (4), Brazilian Constitution, certifies that "[t]he Brazilian Amazon Forest, the Atlantic Woods, the Serra do Mar, the Pantanal of Mato Grosso, and the

---

[55]**Lyle Glowka** *et al.*, note 35, *supra*, pp. 98-99.
[56]See, generally, information provided by UNEP Doc. N. UNEP/Bio.Div./Panels/Inf. 4, note 50, *supra*, pp.17-23.
[57]See, generally, **José Afonso da Silva**, Curso de Direito Constitucional Positivo, São Paulo: Editora Revista dos Tribunais (1991), 7th ed., pp. 708-710.
[58]Brazilian Constitution, Art. 225 (1) (II).

Acervo ISA

Coastal Zone are the national patrimony, and they shall be utilized, ... under conditions assuring preservation of the environment, including use of genetic resources".

Broadly speaking, the Brazilian constitutional principles establish the general guidelines for biodiversity protection and access to genetic resources. It is important to bear in mind that all Brazilian ecosystems, in their totality, are part of the patrimony of the country and their use shall be in accordance with the regulations implementing the constitutional principles. Regulatory mechanisms, however, must be created to interpret and control the use of the Brazilian environment in a way which leads to its preservation for present and future generations.

Considering its constitutional principles and the outcome of the UNCED, namely the CBD and the Agenda 21, the Brazilian federal government created in December 1994 the National Program for the Conservation and Sustainable Use of Biological Diversity (PRONABIO), under the institutional framework of the Ministry for the Environment and the Amazon Region, with the task of suggesting policy guidelines, legislative measures and institutional mechanisms to control the use of Brazilian biodiversity and the exploitation of its resources[59]. In spite of these institutional efforts, no regulatory proposals were suggested by the Brazilian federal government to Parliament. Current legislative developments within the Brazilian Parliament are the initiative of Members of Parliament themselves. At the moment there are two legislative Bills in the Brazilian Parliament dealing with access to genetic resources: PL N. 2.057, of 23 October 1991, on the Statute of Indigenous Societies, and PLS N. 306, of 9 November 1995[60], on instruments to control access to genetic resources. This Sub-section intends to highlight only the measures proposed by PLS 306/95. Further discussion on PL N. 2.057, of 23 October 1991, takes place in Section 3, Sub-section 3.3, Paragraph 3.3.2, *infra*.

In the justification to PLS 306/95, Senator Marina Silva explicitly affirms that the intention of this legislative Bill is to "... create a concrete space for discussion and decision-making about one of the crucial aspects of the biodiversity problem, which is access to genetic resources, ..."[61]. In doing so, Senator Marina Silva calls for the opening up of discussion on

[59]For this information see, **Ministry of Science and Technology**, SUSBIO: Sustainable Use of Biodiversity - A Strategy for the Use of Biodiversity Leading to Sustainable Development - Model Proposal for Brazil, *mimeo*, August 1994, p. 8.

[60]Hereinafter the "PLS 306/95".The acronym PLS stands for "Projeto de Lei do Senado", or legislative Bill which originated in the Federal Senate. PLS 306/95 was suggested by Senator Marina Silva, on 9 November 1995. Senator Marina Silva was awarded the Goldman Environmental Prize of 1996. This prize is regarded by many as the Nobel Prize for environmental issues (Time International, 29 April 1996, V. 147, N. 18).

[61]PLS 306/95, Justification, p. 6.

Acervo ISA

biodiversity prospecting between society, scientists, governmental and non-governmental organisations, Members of Parliament, and local and indigenous communities, in order to create a legal framework which is compatible with the sustainable use of biological diversity and with necessary Brazilian presence in the international debate[62].

PLS 306/95 is, therefore, divided into seven chapters, setting up general principles for the conservation and use of biological diversity, institutional mechanisms, regulatory measures to access genetic resources, the protection of traditional knowledge and the development and transfer of technology, and administrative penalties.

In its first chapter, entitled General Provisions, general principles to guide access to genetic resources are established. The government is therefore empowered to preserve the diversity, integrity and sustainable use of the "country's genetic patrimony"[63], as well as to monitor the work carried out by public and private entities dealing with research into and manipulation of genetic material[64]. This public task has to be conducted in the light of the following principles: (1) sovereignty and inalienability of the rights over the biological diversity and over the existing genetic resources in the national territory[65]; (2) participation of local communities and indigenous peoples in the decisions that have as their subject-matter genetic resources in the areas that they occupy[66]; (3) national participation in social and economic benefits arising from the use of genetic resources, particularly to benefit the local and indigenous communities involved[67]; (4) to give priority access to genetic resources for those who research them in the national territory[68]; (5) to promote and support the development of technologies in the country, giving emphasis to strengthening the national technological capacity[69]; (6) to provide protection and incentive for cultural diversity, particularly cultural diversity related to traditional knowledge and practices in connection with the conservation and sustainable use of biological and genetic diversity[70]; (7) to guarantee biosafety and the country's environmental and food-supply strategies[71]; and (8) to recognise

[62] *Ibid.*
[63] Which includes, by virtue of Article 3, PLS 306/95, all biological and genetic and maritime resources from the continental coast, and from Brazilian islands which are within the Brazilian territory, as well as to migrating species that are in the national territory because of natural causes.
[64] PLS 306/95, Art. 1, *caput*.
[65] *Ibid.*, Art. 1 (I).
[66] *Ibid.*, Art. 1 (II).
[67] *Ibid.*, Art. 1 (III).
[68] *Ibid.*, Art. 1 (IV).
[69] *Ibid.*, Art. 1 (V).
[70] *Ibid.*, Art. 1 (VI).
[71] *Ibid*, Art. 1 (VII).

knowledge associated with biodiversity, as a means of ensuring its protection and remuneration[72].[73]

Within this framework of principles, it is possible to identify three major groups of guidelines. Firstly, PLS 306/95 suggests the reaffirmation of the principle created by Article 15 (1), CBD, on the national sovereignty over genetic resources. Additionally, the first principle listed by Article 1, PLS 306/95, emphasises the application of the sovereign rights principle by also stating that the rights over biodiversity are inalienable.

Secondly, this legislative Bill recognises, broadly, the application of the traditional knowledge and practices of local and indigenous communities by affirming that they shall participate in the decision-making process over genetic process in the territory they occupy, that social and economic benefits which arise from the exploitation of genetic resources shall be particularly shared by them when they are somehow involved, and by recognising their cultural diversity associated with the sustainable use of genetic and biological resources[74]. By accepting the need to guarantee individual and collective rights over knowledge related with biodiversity, recognising not only its protection but also its remuneration, PLS 306/95 also emphasises the need to protect the traditional knowledge and practices of local and indigenous communities as a means of accepting their constitutional rights[75].

The third characteristic of these principles is related to procedural aspects for the setting up of national strategies and policies in relation to the exploitation and use of biological and genetic diversity. By doing so, PLS 306/95 has recognised the two first group of principles which have been mentioned and also highlights the need for national participation in the economic and social benefits arising from the use of genetic resources. It also provides recognition of the necessity to have research on genetic resources taking place in the national territory, by giving priority to genetic resources to those who will carry on research in the national territory, and also by supporting the development of new technologies, giving emphasis to the development of national technologies, and providing principles on biosafety and national strategies related to environmental and food-supply issues.

---

[72] *Ibid.*, Art. 1 (VIII).

[73] It is also worth mentioning that the provisions of PLS 306/95 shall apply to all natural or legal persons, national or international, which extract, use, store, commercialise or transfer genetic resources within the national territory (PLS 306/95, Art. 2). This law does not apply, however, to parts or genetic components of human beings and to the inter-exchange of biological resources among indigenous communities, by their own means of communication, for their own ends and based on their customary practice (*Ibid.*, Art. 4).

[74] *Cf.*, PLS 306/95, Arts. 1 (II), (III) and (VI), respectively.

[75] *Cf* PLS 306/95, Art. 1 (VIII).

Acervo ISA

Institutionally, PLS 306/95 approaches the subject by proposing the creation of a committee composed of representatives of the federal and state governments, the Federal District, the scientific community, non-governmental organisations and private entities. Such a committee would be empowered to co-ordinate, evaluate and assure the development of activities aiming at the conservation of the national genetic patrimony.[76] There are also several institutional tasks suggested by PLS 306/95, such as: (a) to produce a report in two years after the publication of this law regarding the level of threaten to biodiversity and concerning the potential impacts over sustainable development strategies of its destruction, such report to be up-dated once every five years; (b) to set up technical and scientific guidelines aiming at the establishment of priorities for the conservation of biodiversity; (c) to create a list of endangered genetic resources; (d) to create mechanisms for controlling and disseminating information on the national biodiversity; (e) to develop strategies and policies focusing on the conservation of biological diversity and on the sustainable use of it; (f) to control and prevent the introduction of alien species in the national territory; (g) to create mechanisms to consider the sustainable use or loss of biological resources as part of national accounting procedures; and (h) to identify priorities in the field of human resources related to the conservation and sustainable use of biodiversity[77].

The procedural aspects of access to genetic resources are set out by Chapter III of PLS 306/95. Article 6, *caput*, PLS 306/95, proposes to establish, firstly, a PIC mechanism for works aiming at the collection of biodiversity resources. Consent will be granted or refused after the following information is provided by the natural or legal person willing to collect resources: (a) detailed and specific information about the resource for which access is requested, including its actual or potential use, its sustainability and eventual risks that may occur as a result of the access; (b) detailed description of the methods, techniques, collection system and instruments to be used; (c) precise definition of the geographical area where collection of genetic resources will take place; and (d) indication of the place where the material collected will be taken and its probable posterior use[78]. In the case where access is requested for either collection or research over resources located in indigenous or local communities' territories, PLS 306/95 calls for the establishment of regulations in this regard

[76]PLS 306/95, Art. 5 (I).
[77]See, generally, PLS 306/95, Arts. 5 (II) to XII.
[78]PLS 306/95, Arts. 6 (I) to (IV).

Arquivo ISA

which will, at least, assure the hearing of the populations in question and the participation of at least one member of the community in the collection and research[79].

The respective national authority will then decide whether or not to grant authorisation for the required access[80]. If it decides to grant authorisation, it will be accompanied by the following obligations, listed as a minimum basis: (a) that the entity which has been granted access will be bound by national rules, particularly those related to sanitary control, biosafety, customs and environmental protection; (b) that the Brazilian federal government will have access, without restrictions, to all knowledge produced and to all information resulting from the research in question; (c) that Brazil will be given priority treatment to utilise the products which are the result of genetic resources; (d) that national participation in the economic, social and environmental results of the products and processes arising from the research based on genetic resources will take place; and (e) that those to whom access has been granted will deposit a sample of the genetic resource in question in a Brazilian institution[81]. The Brazilian authority in charge of access to genetic resources is empowered, together with the Brazilian technical-scientific institution assigned to follow the collection and the research[82], to make sure that the obligations set out in the authorisation are met[83]. The national authority may also request that the entity which is carrying out research based on and collection of genetic resources, should provide a study on the impact assessment as a result of the research or collection in question[84], as well as requiring financial compensation to the federal government for access to take place[85].

Article 17, *caput*, PLS 306/95, also suggests that the rights of local and indigenous communities should be recognised and protected, and that just compensation should be granted to these communities by using the mechanisms of intellectual property protection and

---

[79] *Ibid.*, Art 6, Sole paragraph.

[80] Authorisation to access genetic resources does not imply that exportation of genetic resources is authorised (PLS 306/95, Art. 12). PLS 306/95 also determines that the transfer of alien genetic resources into the national territory is subject to authorisation of the competent authority (*Ibid*, Art. 16). It is also worth mentioning that if genetic resources are collected or researched without formal authorisation, rights over collection and research will not be recognised by Brazilian national legislation, including IPRs (*Ibid.*, Art. 15).

[81] *Ibid.*, Art. 8. All research and collection of genetic resources in the national territory will be followed by a Brazilian scientific-technical institution with the scientific capacity in the area subject-matter of research, which will be assigned by the competent authority and will be deemed liable for the fulfilling of the obligations set out in the authorisation (*Ibid.*, Art. 7).

[82] *Cf.* PLS 306/95, Art. 7.

[83] PLS 306/95, Art. 9, *caput*.

[84] *Ibid.*, Art. 9, Sole paragraph.

[85] *Ibid.*, Art. 10. The financial resources acquired from researchers on genetic resources, for access to be granted, will be deposited in the National Fund for the Environment (*Ibid.*, Art. 10, Sole Paragraph).

Acervo ISA

others. It also recognises that, when it is not possible to identify individuals as holders of rights, collective rights over intellectual property protection will be used as a legal tool[86].

Traditional communities are also empowered to refuse access to genetic resources in their territory or in other area outside their territory. In the latter case, it will have to be proved that access to genetic resources in areas outside their territory will threaten the integrity of their natural and cultural patrimony[87].

PLS 306/95 also calls for two further measures to be taken in connection with the IPRs of local and indigenous communities. Firstly, it states that individual IPRs related to biological or genetic resources will not be recognised - registered either in Brazil or abroad - if they utilise the collective knowledge of traditional communities or if they are acquired without the authorisation for access or to export[88]. Secondly, PLS 306/95 suggests, in Article 22, that the government should review all patent or intellectual property rights based on Brazilian genetic resources which have been registered abroad, so that compensation may be claimed or a declaration of nullity may be obtained.

With regard to the transfer and development of technologies, PLS 306/95 affirms that the government shall promote and support the development of national sustainable technologies for use and advancement of species and varieties, giving priority to the traditional uses and practices of local and indigenous communities within the national territory, according to their own aspirations[89]. Alongside the support and promotion of the development of national technologies, the federal government may allow the utilisation of foreign biotechnology, as far as such use is in accordance with this law and national regulations on biosafety. The exporter of the technology in question must accept all responsibility for any damage caused to the environment, health and local cultures, in the present or in the future[90].

Article 25, PLS 306/95, calls for the creation of mechanisms to guarantee and facilitate access to and transfer of technologies which are relevant for the conservation and sustainable

---

[86] *Ibid.*, Art. 17, Sole paragraph. By virtue of Article 18, PLS 306/95, the collective rights of traditional communities is a recognition of the rights traditionally acquired by, including industrial property rights, copyrights, breeders' rights, trade secret and others. These collective rights have to be implemented within one year counting from the date of publication of this law, under the following guidelines: (a) identification of the type of IPRs to be used in each case; (b) determination of the requirements and procedures for these rights to be recognised; and (c) creation of a registry system, procedures and rights and obligations of the right holders (*Ibid.*, Art. 19).

[87] *Ibid.*, Art. 20.

[88] *Ibid.*, Art 21.

[89] *Ibid*, Art. 23. For the application of this principle a survey and evaluation of traditional and local biotechnology shall be carried out by the government (*Ibid.*, Art. 23, Sole paragraph).

[90] *Ibid.*, Art. 24.

Acervo ISA

use of biodiversity to national researchers[91]. In the case of a transfer of relevant technologies which are capable of intellectual property protection, the government shall create conditions to guarantee that such transfer of and access to the technology in question will be in accordance with the adequate protection of IPRs[92].

Lastly, PLS 306/95 requires the federal government to establish a system of administrative penalties for those who infringes the rules on access to genetic resources. Such system should include, *inter alia*, the arrest of samples, materials and equipment utilised in the unlawful action, fines, and abrogation of the authorisation to access genetic resources[93]. These sanctions should not preclude the application of other civil or penal sanctions[94].

3. TECHNOLOGY TRANSFER AND IPRS IN THE CBD

The CBD regards technology transfer as a vital approach towards biodiversity conservation and sustainability. This is expressed by almost the entire text of the Convention and particularly emphasised by the CBD's Preamble:

> Acknowledging that the provision of new and additional financial resources and appropriate access to relevant technologies can be expected to make a substantial difference in the world's ability to address the loss of biological diversity,
>
> Acknowledging further that special provision is required to meet the needs of developing countries, including the provision of new and additional financial resources and appropriate access to relevant technologies, ...

The CBD has thus addressed all States, whether developed or developing economies, recognising that technology transfer is one of the major step towards biodiversity conservation. It has further accepted that a technological gap between developed and developing nations is evident by acknowledging that developing nations require special provision on access to technologies. Signatory States to the CBD have therefore called for a broader form of assistance which includes scientific and technical co-operation.

Also in its Preamble, the CBD has recognised "... the close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, ..." and further suggested that it is desired to share equitably the benefits arising

[91] *Ibid.*, Art. 25.
[92] *Ibid.*, Art. 26.
[93] *Ibid.*, Art. 27.

Acervo ISA

from the use of traditional knowledge and practices of these communities. This leads one to understands that traditional knowledge and practices represent traditional technologies which are relevant for the conservation and sustainable use of biological resources.

Obviously, the implementation of the wording of the CBD's Preamble has given rise to more detailed provisions on this matter, which have been further considered in the text of the CBD and will be analysed in even more detail in the context of national rules aiming at implementing the biodiversity principles. This understanding leads naturally to discussions about the use of mechanisms to protect IPRs appropriately and effectively.

This link between traditional and modern technologies and intellectual property protection is probably the major issue of the CBD and has been subject to a controversial debate. The wording of the CBD is not detailed and leaves much discretion to national legislation. This appears to have posed a threat to the plans of major multinational companies, particularly in the biotechnological field, which have a great interest in the exploitation of genetic resources as a raw material for the research and development of new products.

A possible solution for building up scientific and technical capacities related to biodiversity conservation and sustainable use is by scientific and technical co-operation. By virtue of Article 18, CBD, this should take place by the development of national policies, training of personnel and exchange of experts, and by the promotion of joint research programmes and joint ventures for the development of technologies. The system suggested by Article 18 (3), CBD, to promote scientific and technical co-operation is the establishment of a clearing-house mechanism which would provide an information exchange service, serving as an instrument for the development of local, national and global policies, supporting the establishment of national institutional capacities, assisting countries to develop partnerships, and assisting the Executive Secretariat of the CBD by integrating and disseminating scientific, technological and technical information. In its first phase of operation, the clearing-house mechanism would give emphasis to the development of national capabilities, the facilitation of technology transfer , and the promotion of partnerships. It would thus operate as an accessible electronic data network, a decentralised network of national and regional centres, based as far as possible on existing institutions, using existing databases, information, services and networking capabilities. The Executive Secretariat of the CBD would be the international focal point of such a mechanism and responsible for gathering, organising and disseminating

[94] *Ibid.*, Art 27, Sole Paragraph.

Arquivo ISA

information of interest to the Contracting Parties and to the sustainable use of biological diversity.[95]

3.1. Incentive to technology transfer with appropriate IPRs

An important step towards the implementation of the CBD's provisions on technology transfer is to ensure that Contracting Parties will have access to relevant information. It is, nevertheless, necessary to bear in mind that the intention of the CBD is not only to promote the exchange of information about specific technology, but also to promote and encourage the transfer of complete systems of technology such as know-how, goods and services, and organisational and managerial skills. This obviously includes both "hard" technologies, such as plant, equipment and computers, and "soft" technologies, such as know-how, skills, training and maintenance.[96]

Article 16 of the CBD attempts to create mechanisms to promote transfer of technology in a general way. This provision is probably the most controversial in the whole biodiversity debate and has raised several arguments from the US government, which has been strongly lobbied by its biotechnology industries. The ambiguous and imprecise wording of Article 16, CBD, reflects the complexity of the discussion in this field, which was determined as a result of the struggle between the interests of developing countries, which considered technology transfer to be a crucial element to the CBD, and the interests of developed countries strongly opposing the inclusion of technology transfer mechanisms to favour developing nations[97].

Taking into account that technology includes biotechnology[98], and that technology transfer among Contracting Parties is a vital element for the conservation and sustainable use of biodiversity, Article 16 (1), CBD, claims that Contracting Parties shall "... provide and/or facilitate access for and transfer to other Contracting Parties of technologies that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause damage to the environment".

It is firstly necessary to note that the wording of Article 16 (1), CBD, makes a suggestion rather than imposes an obligation. Contracting Parties shall "provide and/or

---

[95]UNEP Doc. N. UNEP/CBD/COP/2/6 (29 September 1995) Establishment of the Clearing-House Mechanism to Promote and Facilitate Technical and Scientific Co-operation.

[96]UNEP Doc. N. UNEP/Bio.Div./Panels/Inf.3 (28 April 1993) Expert Panels Established to Follow-Up on the Convention on Biological Diversity - Technology Transfer and Financial Issues: Issues and Options from Panel III, p. 1, para. 1.2.

[97]**Lyle Glowka** *et al.*, note 35, *supra*, p. 84.

Acervo ISA

facilitate" access to and transfer of technology. This provision does not necessarily impose an obligation on Contracting Parties to provide technology to other Contracting Parties, but proposes that mechanisms facilitating technology transfer should exist.

Also, while Article 16 (1), CBD, lists three types of technology for the purpose of technology transfer (technologies relevant to the conservation of biodiversity, technologies relevant to the sustainable use of biodiversity, and technologies that make use of genetic resources), it emphasises that such technologies shall not cause significant damage to the environment.

Access to and transfer of technology to developing countries, by virtue of Article 16 (2), CBD, "... shall be provided and/or facilitated under fair and most favourable terms, including on concessional and preferential terms where mutually agreed, and, where necessary, in accordance with the financial mechanisms established by Articles 20 and 21". Such access and transfer shall be in accordance and consistent with "... the adequate and effective protection of intellectual property rights". This provision shall be consistent with Articles 16 (3), (4) and (5), CBD.

Article 16 (2), CBD, is divided in three parts. The first part aims at creating more favourable conditions for developing countries access to and transfer of technologies. The second part requires access and transfer to be consistent with the protection of IPRs. The third part connects this paragraph with paragraphs 3, 4 and 5 of Article 16.

The first part of Article 16 (2), CBD, clearly recognises the lack of technological development of developing countries. Again, developed countries are not obliged to transfer and give most favourable terms of access to technology to developing economies, but technology access and transfer shall be "provided and/or facilitated" fairly and under most favourable terms. Developed countries, as holders of modern technologies, are thus not obliged to give such preferential treatment to developing economies. This probably suggests that such conditions will be put into practice once access to genetic resources is regulated under national legislation and a bargain type of relationship will take place. Developing countries will then authorise access to genetic resources that are present in their territory in exchange for access to and transfer of technologies. This technology transfer will obviously be mutually agreed between both parties.

The first part of Article 16 (2), CBD, also links access to genetic resources with the financial mechanisms of Articles 20 and 21, CBD. This necessarily implies that the

[98] *Cf.* Art. 2, CBD.

Archivo UNISA

institutional framework of the CBD may be used to provide funds for facilitating access to and transfer of technologies to developing countries, aiding both parties to overcome the legal and economic difficulties included in the technology transfer.[99]

In the second part, Article 16 (2), CBD, requires that when technology which is the subject of transfer to developing countries is protected by IPRs, such protection shall be made effective and in accordance with the international mechanism of intellectual property protection. In this regard, it is necessary to mention that there are at least two situations in which IPRs are going to be dealt with. Firstly, the effective protection of technology which has been entirely developed by a natural or legal person or by a governmental institution, and which is transferred to a particular developing country, shall take place once such adequate and effective protection of IPRs over that technology is guaranteed. This is obvious, and transfer will not take place if such guarantee is not given. A second circumstance that raises more questions is that relating to a particular technology which has been developed by a natural or legal person, or governmental institution, based on genetic resources which are present in the national territory of the developing country in question. If authorisation was given by the latter, the terms of the authorisation of access to genetic resources will certainly contain clauses regulating IPRs as a result of research on genetic resources. However, if a natural or legal person, or governmental institution, has carried out research on a particular genetic material present in the territory of a developing country without the authorisation of the latter, IPRs over the result of such research will not arise. The developing country in question will certainly not recognise intellectual property protection for such technology and will probably claim the nullity of IPRs on a national basis. For developing countries to claim the nullity of IPRs on an international basis, however, further multilateral mechanisms should be agreed to grant all countries with some necessary tools allowing them to claim international nullity of IPRs which are the result of research on genetic resources that were carried out without the authorisation of the provider country.

This leads to the third part of Article 16 (2), CBD, which calls for consistency of this provision with paragraphs 3, 4 and 5, of Article 16, CBD. Article 16 (3), CBD, requires Contracting Parties to take

> ... legislative, administrative or policy measures, as appropriate, with the aim that Contracting Parties, in particular those that are developing countries, which provide genetic resources are provided access to and transfer of technology

[99] **Lyle Glowka** *et al.*, note 35, *supra*, p. 86.

Acervo ISA

> which makes use of those resources, on mutually agreed terms, including technology protected by patents and other intellectual property rights, where necessary, through the provisions of Articles 20 and 21 and in accordance with international law and consistent with paragraphs 4 and 5 below.

Paragraph 3, therefore, addresses specifically the issues on technology transfer in connection with access to genetic resources. That is why it has been mentioned in the foregoing paragraph that the issues on IPRs will have to be consistent with the national measures - legislative, administrative or policy measures - regulating access to genetic resources and transfer of technology. It is also noteworthy that Article 16 (3), CBD, does not require measures only in developing countries in whose territory genetic resources are present. All Contracting Parties shall take measures in this regard, which highlights that the CBD has recognised that a two-party relationship will always occur in this regard and that measures shall exist on both sides. The CBD has thus recognised that all Contracting Parties are potential providers and users of genetic resources and, "..., at least in theory, potentially entitled to receive technology making use of genetic resources"[100]. Article 16 (3), CBD, has in addition connected technology making use of genetic resources with the financial mechanism of the CBD, *i.e.* Articles 20 and 21, and required "mutually agreed terms"[101] to be the basis of transfer of technology based on genetic resources.

Legislative, administrative or policy measures are also required by the CBD, in Article 16 (4), "... with the aim that the private sector facilitates access to, joint development and transfer of technology referred to in paragraph 1 above for the benefit of both governmental institutions and the private sector of developing countries ...". By saying this the CBD has accepted the obvious: holders of modern technology, and particularly biotechnology, are mostly in the private sector of developed countries. The commitment reached by Article 16 (4), CBD, implies that the private sector which owns technology[102] will consider "access to, joint development and transfer of technology" if there are national measures which encourage such actions. These measures are particularly relevant when arising in developing countries, but the wording of this paragraph suggests that measures are necessary in all Contracting Parties, whether exporters of technology or providers of genetic resources. It seems, therefore, that some degree of co-ordination is necessary to make such a provision prevail, with

[100] *Ibid.*, p. 90.
[101] *Cf.* Section 2, Sub-section 2.2, *supra*.

Arquivo ISA

encouragement from developed countries which need genetic resources as a raw material for research and development and the necessary obligations created by national legislation of developing countries which need to develop their technological capacity in order to conserve biodiversity. At the end of the day, the letter of Article 16 (4), CBD, proposes measures which are of interest for both providers and users of genetic resources.

Article 16 (5), CBD, finally makes an incisive statement towards the protection of IPRs, by recognising that patents and other IPRs may have influence on the implementation of the CBD and by inviting Contracting Parties to co-operate in order to ensure that IPRs are supportive of and do not run counter to the objectives of the Convention. As mentioned by Lyle Glowka[103], this paragraph suggests that Contracting Parties to the CBD have not concluded whether IPRs have a positive or a negative impact over biodiversity conservation. Co-operation among Contracting Parties is therefore suggested as a means of agreeing upon the necessary measures on intellectual property protection which are supportive of and do not run counter to the goals of sustainable use and conservation of biological diversity, and equitable and fair sharing of the benefits arising from the use of biodiversity. Such co-operation is indeed necessary and unavoidable if a balance between economic and environmental interests is to be reached. The US government, however, has suggested that the wording of Article 16 (5), CBD, leads one to interpret the Convention as giving "... Contracting Parties authority to restrict or ignore intellectual property rights"[104]. This does not seem to be the case. Article 16 (5), CBD, clearly affirms that such co-operation shall be subject to national legislation and international law. The latter has as a basis the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) which proposes a minimum basis of protection in accordance with US interests. Of course, if IPRs would somehow run counter to the objectives of the CBD, Contracting Parties may consider not granting protection for inventions which are not environmentally friendly

3.2. Biotechnology, participation in research and sharing of benefits

Although Article 19, CBD, does not refer explicitly to the protection of intellectual property, it does contain obligations about the participation of countries providing genetic resources in

[102]The technology referred to here is threefold: technology relevant for conversation, technology relevant for sustainable use, and technology which makes use of genetic resources. This is a consequence of the reference made to Article 16 (1), CBD.
[103]Note 35, *supra*, p. 91.
[104]**Joseph Straus**, note 23, *supra*, p. 607.

Acervo ISA

biotechnological research and the sharing of results and benefits of such research, paying particular attention to developing countries.

Article 19 (1), CBD, requests each Contracting Party to "... take legislative, administrative or policy measures, as appropriate, to provide for the effective participation in biotechnological research activities by those Contracting Parties, especially developing countries, which provide genetic resources for such research". It also requires that biotechnological research using genetic resources should, where feasible, take place in the provider country.

There are two characteristics of Article 19 (1), CBD, to be looked at in more detail. By suggesting the participation of Contracting Parties which provide genetic resources in the biotechnological research using those resources, the CBD aims at encouraging the building up of human capacity in the provider country. This leads to several positive consequences for these countries, such as the development of a community of scientists trained particularly in relation to national genetic resources which as a consequence may lead to the training of other researchers of that particular country by those who have participated in the biotechnological research. This all may lead to the creation of the countries' own technological capabilities and, as a consequence, to the development of biotechnological products for the local, national or global markets. The letter of Article 19 (1), CBD, is extremely direct when it requires "effective" participation of the countries providing genetic resources in the biotechnological research. By contrast with the wording of Article 15 (6), CBD, which requires Contracting Parties to encourage the participation of the countries providing genetic resources, Article 19 (1), CBD, makes a strong claim for such participation.

The second characteristic of Article 19 (1), CBD, is that biotechnological research should, where feasible, take place in the territory of the country providing the genetic resources. This suggests that the CBD has accepted that when research takes place in the territory of the provider country, particularly when such country is a developing one, it may involve transfer of "hard" technologies such as laboratory equipment necessary for biotechnological research. When the research is concluded, this equipment may, depending on the terms of the access agreement, stay in the provider country, helping the latter to develop its own capacities and train other researchers by using such equipment. Also, the participation of researchers from the provider country may be in larger numbers if it takes places in the territory of this country.

Article 19 (2), CBD, also requires all Contracting Parties to take measures "... to promote and advance priority access on a fair and equitable basis by Contracting Parties, especially developing countries, to the results and benefits arising from biotechnologies based upon genetic resources provided by those Contracting Parties". This access must be on mutually agreed terms.

This provision acknowledges, by accepting that benefits exist, that genetic resources have a commercial, economic and scientific value, entitling the Contracting Parties providing such resources to have priority access to the results and benefits, on a fair and equitable basis and on mutually agreed terms.

The expression "priority access" is not defined by the Convention but seems to imply a preferential treatment for those countries providing genetic resources in the sharing of the results and benefits of biotechnological research. Neither "Results" nor "benefits" are defined by the CBD. It seems that this is to be defined by national legislation or access agreements. "Benefits", however, seems to be a broad concept and may be applied to a variety of consequences of biotechnological research. Some commercial benefit may arise from products developed by biotechnological research. These products (the results) will certainly be commercialised. National legislation or access agreements will thus provide for the payment of royalties to the provider country as a means of benefit-sharing. Also, scientific results may be of interest to developing countries which are the providers of genetic resources and mechanisms are to be created by national law or access agreements to guarantee effectively the participation of such country in the benefits. Scientific benefits are broad and could include the training of personnel, access to technology (both hard and soft) and the maintenance of laboratory equipment. The vague wording of the CBD, however, leaves discretion to national legislation and access agreements to define how these terms are to be implemented and applied.

3.3. Traditional practices and knowledge

The traditional concept of IPRs has been broadened substantially in accordance with the developments of new technologies and needs of modern society.[105] After the commitments achieved by the UNCED, namely the CBD, another aspect of intellectual property protection was raised. The CBD, in its Preamble recognises that it is desirable that the "... benefits arising

[105] *Cf.* note 25, *supra.*

Acervo ISA

from the use of traditional knowledge, innovations and practices ..." of indigenous and local communities should be shared equitably.

Later on, Article 8 (j), CBD, establishes a broader intellectual property principle, when says that national laws shall, as far as possible and as appropriate,

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

It is firstly necessary to understand that the CBD clearly accepts that the knowledge, innovations and practices of local and indigenous communities are relevant to the conservation and sustainable use of biological diversity[106]. Two other important points on the application of this international principle, however, must be considered. Firstly, it is necessary to say that the CBD claims that traditional knowledge, innovations and practices of local and indigenous communities have a commercial value, once it is accepted that benefits arise from the utilisation of such traditions, and that these benefits are to be shared. Also, the CBD determines a link between sustainable development and commercial value within the traditional concept of IPRs. The CBD even utilises the vocabulary typically used for the definition of the proprietor of an intellectual property right when it entitles local and indigenous communities to be the holders of their knowledge, innovations and practices. In my opinion, it is possible to interpret the wording of the CBD as including the traditional practices and knowledge of local and indigenous communities within the current system of national and/or international intellectual property laws. After all, the international community has considered such problems and further has included its understanding of this matter in the text of the CBD. The discussion in this field is widening in a legal sense and further commitments and principles may be created in the near future.

[106]The importance of traditional knowledge for the conservation and sustainable use of biological diversity is supported by the CBD in two other provisions. The Preamble affirms that "... traditional knowledge, innovations and practices [are] relevant to the conservation of biological diversity and to the sustainable use of its components". Moreover, Article 17 (2), listing the type of information that may be relevant, for exchange purpose, to the conservation and sustainable use of biodiversity, includes "... indigenous and traditional knowledge as such and in combination with the technologies referred to in Article 16, paragraph 1".

Arquivo ISA

3.3 1. A sui generis system and the TRRs concept

The "Western" concept of proprietorship and commercial value has been applied to protect tangible and intangible manifestations of human society. The legal instrument traditionally used for this purpose is IPRs. Phillips and Firth[107] have suggested that the traditional concept of IPRs could be defined in two ways: (a) in a colloquial sense, IPRs include everything which emerges from the exercise of the human brain; and (b) in a legal sense, IPRs are understood as "... the legal rights which may be asserted in respect of the product of the human intellect".

The application of these legal rights, however, is costly and complex in technical terms. The development of technologies has led to a broader approach towards intellectual property protection, developing new legal mechanisms, concepts and principles which could include the technological development of contemporary society. Until recently, however, the traditional knowledge, innovations and practices of local and indigenous communities were not considered to be capable of legal protection. But the CBD has formally accepted such a concept, raising doubts concerning the legal instrument that could be used to implement the principle created by Article 8 (j), CBD.

As the lifestyle of local and indigenous communities has relevant qualities and assets for genetic resources prospecting, the issues of whether intellectual property rights include traditional practices, innovations and knowledge was raised. Industries which deal primarily with modern technology, particularly biotechnology industries, have a growing interest in traditional knowledge and practices[108] and this has, even more effectively, raised concerns about how to include traditional lifestyles under legal protection, to secure benefit-sharing, conservation and sustainable development of biological diversity.

Several international gatherings on this subject have taken place among scientists, indigenous and local communities themselves, ecologists and ethnobiologists, and a conclusion is that IPRs will not assure protection for the variety of rights included in the lifestyle of traditional societies.

Aware of these difficulties and of the need to discuss further a legal mechanism that could be used to protect the rights of indigenous and local communities, a Working Group on

---

[107] **Jeremy Phillips & Alison Firth**, Introduction to Intellectual Property Law, London, Dublin and Edinburgh: Butterworth & Co (Publishers) Ltd. (1990), 2nd ed., p. 3.

[108] **Stephen R. King**, The Source of Our Cures, [1991] *Cultural Survival Quarterly* 19-22. at p. 19, estimates that "[r]oughly 74 per cent of the 121 plant-derived compounds currently used in the global pharmacopoeia have been discovered through research based on ethnobotanical information on the use of plants by indigenous people".

Acervo ISA

Traditional Intellectual, Cultural and Scientific Resource Rights (or the Working Group on Traditional Resources Rights)[109] has developed a concept that could be used for the protection of all these rights of indigenous and local communities in a single instrument, with *sui generis* characteristics, and entitled "Traditional Resource Rights" (TRRs).

Posey and Dutfield[110] define TRRs as such:

> ... the term "traditional resource rights" (TRRs) was adopted to reflect the necessity of rethinking the limited and limiting concept of IPRs. The term "traditional" refers to the cherished practices, beliefs, customs, knowledge, and cultural heritage of indigenous and local communities who live in close association with the Earth; "resource" is used in its broadest sense to mean all knowledge and technology, aesthetic and spiritual qualities, tangible and intangible sources that, together, are deemed by local communities to be necessary to ensure healthy and fulfilling lifestyles for present and future generations; and "rights" refers to the basic inalienable guarantee to all human beings and the collective entities in which they choose to participate of the necessities to achieve and maintain the dignity and well-being of themselves, their predecessors, and their descendants.[111]

The concept of TRRs has thus emerged to define the variety of rights that may protect the rights of local and indigenous communities, aiming, at the same time, at the conservation and sustainable use of biological diversity, and respect for the lifestyles and basic human rights of these societies. TRRs, therefore, includes plants, animals, and other objects that may have material, sacred, ceremonial, or aesthetic value to indigenous communities. So far, the concept of TRRs has defined eighteen binding and non-binding principles of international law that may be utilised to form the basis of the concept. Among others, one will find the principle of human rights, IPRs and neighbouring rights, the right to self-determination, the right to privacy and prior informed consent, rights to protection of cultural property, folklore and cultural heritage, recognition of customary law and practice, and farmers' rights[112].

---

[109]In 1989, the International Society for Ethnobiology's "Declaration of Belem" called for the development of effective strategies to stimulate the responsible use of traditional knowledge and "biogenetic" resources to benefit indigenous and local communities, while securing self-determination for these peoples. As a result, a "Working Group on Intellectual Property Rights" was established. After, the Working Group was renamed "The Working Group on Traditional Intellectual, Cultural and Scientific Resource Rights" to reflect the broadened scope of the subject.

[110]**Darrell Posey & Graham Dutfield,** Beyond Intellectual Property Rights: Towards Traditional Resource Rights for Indigenous and Local Communities, Gland/Switzerland and Ottawa: WWF-International & IDRC (forthcoming).

[111]*Ibid.*, Introduction, in *http://www.idrc.ca/books/799.html*.

[112]For a comprehensive list of the "bundle of rights" that are included in the TRRs concept, see Appendix A, *supra*.

From the application of all these rights together, a *sui generis* system could be created and the application of intellectual property principles would be included within a broad concept and therefore adapted to the specific circumstance of indigenous and local communities. It appears, however, that the execution of such a concept, as a means of implementing Article 8 (j) of the CBD, by national legislation would only limit the possible enforcement and application of these rights. A multilateral agreement in this regard seems to be the most effective way to protect the traditional rights and practices of local and indigenous communities. Multilateral negotiations, would however have to consider the views of indigenous and local communities and their own concepts towards an international agreement in this field.

3.3.2. An overview of the legislative developments in Brazil

Although provisions on the protection of indigenous rights have been in the Brazilian legal framework for more than three centuries[113], they have rarely been effective in practical terms.

At the beginning of the 1970s Law N. 6001 , of 19 December 1973 (Law 6001/73), was created to set up a basic principle of indigenous rights and institutional mechanisms for the application and enforcement of these rights. Among other principles, Law 6001/73 determined that all laws of Brazil apply to indigenous communities and individuals as it is applied to all Brazilians, but their traditions, customs, practices and particular conditions shall be respected[114]. However, taking into account the juridical understanding of the application of indigenous rights at that time, such respect to the indigenous' customs, practices and traditional lifestyles did not take place effectively.[115]

Following the above mentioned period, the Brazilian Parliament, gathered as a "constitutional convention", promulgated a new Brazilian Federal Constitution on 5 October 1988, opening the way for the country's redemocratisation. The 1988 Brazilian Constitution exposes the legislature's great effort to set up constitutional principles which could effectively protect indigenous peoples' rights and interests.

---

[113]**José Afonso da Silva**, note 57, *supra*, at p. 719, advises that already in the colonial period the rights of indigenous communities over the land they have traditionally occupied has been a mechanism of Brazilian/Portuguese colonial legal framework: Charter of 1 April 1680, followed and confirmed by Law of 6 June 1755.

[114]Law 6001/73, Arts. 1, Sole paragraph and 2 (VI).

[115]Article 6 of the Brazilian Civil Code (Law N. 3071, of 1 January 1916, and amendments, published in **Juarez de Oliveira** (organiser) Código Civil, São Paulo: Editora Saraiva (1987) 37th ed.) states that the silvicolous were

Acervo ISA

Article 231, *caput*, Brazilian Constitution, affirms that "[t]he social organization, customs, languages, creeds and traditions of Indians are recognized, as well as their original rights to the land they traditionally occupy"[116]. Further, it establishes that the lands that indigenous communities have traditionally occupied "... are destined for their permanent possession, and they shall be entitled to the exclusive usufruct of the riches of the soil, rivers and lakes existing thereon"[117].

Firstly, it is necessary to recall that the Constitution refused to use the expression "indigenous nations", based on the controversial premise that the expression "nation" has a strict understanding that a nation is an independent country with sovereign rights[118]. Secondly, it is remarkable that indigenous communities were recognised as such, with the debate going beyond the question on land rights, embracing also rights related to their creeds, customs, traditions and practices. Implementing legislation shall thus regulate the collective rights owned by indigenous communities taking into consideration that constitutional provisions defined two basic rights over those lands: the right of permanent possession and the right of usufruct.

The permanent possession of the lands that indigenous communities have traditionally occupied is necessarily a broad concept. It should not be understood only as the *ius possessionis*, but also as the *ius possidendi*, because this exposes also the right to possess the *res* with a legitimate legal character of contiguous utilisation.[119]

The exclusive usufruct of the wealth of the soil, rivers and lakes existing thereon represents a civil law concept that grants a person (the usufructuary) the right to enjoy the fruit or profits of property that is owned by another and the duty to maintain the substance of the property.[120]

In addition, all acts aiming at the occupation, dominion and possession of the lands traditionally occupied by indigenous communities, "... or at the exploitation of the natural

---

"relatively uncapable" of exercising some judicial acts (at Art. 6 (III)) and that they were subject to a tutelage regime (Art. 6, Sole paragraph).

[116]"Lands traditionally occupied by Indians are those on which they live on a permanent basis, those used for their productive activities, those indispensable for the preservation of environmental resources necessary for their well-being and those necessary for their physical and cultural reproduction, according to their uses, customs and traditions" (Brazilian Constitution, Art. 231 (1)).

[117]Brazilian Constitution, Art. 231 (2).

[118]**José Afonso da Silva**, note 57, *supra*, p. 715.

[119]*Ibid.*, at p. 720.

[120]The lands that are occupied by indigenous peoples are the property of the Brazilian State, pursuant to Article 20, XI, Brazilian Constitution.

wealth of the soil, rivers and lakes existing thereon, are null and void, producing no legal effects ..."[121].

Finally, the Brazilian Constitution has provided that Indians, their communities and their organisations have the right to sue and to defend their rights and interests, with the Public Ministry intervening in all stages of the procedure[122]. The Public Ministry is a permanent institution, constitutionally considered essential for the functioning of the judicial system, with the duty of defending the legal order, democracy and social and individual rights[123]. The Public Ministry, among other functions, has the "institutional function" of defending the rights and interests of indigenous populations[124].

Though not very clear, it is possible to interpret Brazilian constitutional provisions as protecting the intangible rights of indigenous communities and individuals. Nevertheless, the details of this interpretation shall be worked out by national authorities and by national courts, aided by the provisions arising from secondary legislation in this matter. Thus, case law may play an essential role in the development of judicial concepts designed to protect indigenous intangible rights and, as a consequence, to regulate one of the tools for prospecting biological resources.

The Brazilian Parliament has been negotiating further developments of the rules governing the rights of indigenous communities. Four years ago, on 23 October 1991, five Brazilian Members of Parliament proposed a Bill, PL N. 2.057, of 23 October 1991 (PL 2057/91)[125], which aims to update national legislation regulating indigenous rights[126]. PL 2057/91 suggests several novel and important provisions concerning the protection of indigenous rights and, in particular, those regarding their intellectual rights. These provisions are the subject of the following discussion.

---

[121]Brazilian Constitution, Art. 231 (6).
[122]*Ibid.*, Art. 232.
[123]*Ibid.*, Art. 127, *caput*.
[124]*Ibid.*, Art. 129 (V).
[125]PL is the acronym for "Projeto de Lei" or, legislative Bill, in English. Five other legislative Bills were attached to PL 2057/91 - PL 4916/90, PL 2451/91, PL 2160/91, PL 2619/92 and PL 4442/94 - and, with the exception of the latter, all suggested mechanisms to protect traditional knowledge, innovations and practices. A Special Committee has been created to analyse the subject and to decide upon amendments or modifications to the proposed texts. Hereinafter, when this paper refers to PL 2057/91, it means the version approved by the Special Committee on 15 June 1994, and which has considered the attached proposals. PL 2057/91 will be sent to the Federal Senate for consideration. It will then return to the Chamber of Deputies which will decide upon probable amendments made at the Federal Senate. Only after the Chamber of Deputies approves or modifies the version sent back by the Federal Senate, the Bill goes to the President for sanction.
[126]The legislation currently into force in Brazil is Law 6001/73. When PL 2057/91 becomes legally applicable (Article 174 of PL 2057/91 says that it will enter in force at the date of publication in the Brazilian Official Journal), Law 6001/73 will be automatically revoked (PL 2057/91, Art. 175).

Acervo ISA

PL 2057/91 initially addresses some procedural questions and states that the indigenous communities have legal personality and that their legal existence does not depend upon any type of registration or any act of government[127]. Further, it recognises all civil, political, social and labour rights, as well as the fundamental rights and guarantees of the Brazilian Constitution[128]. PL 2057/91 further lists, in Article 14, what constitutes indigenous assets, including author's rights[129] and industrial property rights[130].

Title II, Chapter II, PL 2057/91, suggests legal tools designed to protect traditional practices and knowledge, undoubtedly aiming at the implementation of the provisions of the CBD which has been referred throughout the present analysis. It also determines criminal and civil responsibilities, provisions on enforcement, juridical application of these rights and substantive aspects of industrial property protection.

It also proposes a new concept for the application and patentability of indigenous industrial property rights, when it establishes a principle for the protectability of indigenous traditional knowledge which is not capable of patent protection.

(a) Patentable subject-matter

In the first place, PL 2057/91 determines that indigenous communities have the fundamental right to maintain the confidentiality of the traditional knowledge they possess. This will apply, in particular, to knowledge about the characteristics and properties of ecosystems and natural habitats, living species, plants or animals, micro-organisms, pharmaceuticals and natural essences, or any biological or genetic processes.[131] Further, Article 18 (1) suggests, on a minimum basis, that the rights above-listed include the right to refuse, without any justification, access to their traditional knowledge. They may also refuse to authorise the disclosure or utilisation of their traditional knowledge, for scientific, commercial or industrial purposes. As a matter fact, any violation of the fundamental right established by Article 18, *caput*, will be subject to criminal[132] and civil[133] responsibilities[134].

---

[127]PL 2057/91, Art. 8. **Andrée Lawrey**, Contemporary Efforts to Guarantee Indigenous Rights Under International Law, [1990] 4 *Vanderbilt Journal of Transnational Law* 703-777, at p. 714, stresses that the positivist approach to international law has traditionally denied legal personality to indigenous communities.

[128]*Ibid.*, Art. 9. Note that, amongst the fundamental guarantees and rights, as established by Brazilian Constitution, there are author's rights (Art. 5 (XXVII)) and industrial property rights (Art. 5 (XXIX)).

[129]*Ibid.*, Art. 14 (IV).

[130]*Ibid.*, Art. 14 (V).

[131]*Ibid.*, Art. 18, *caput*.

[132]Title VII, PL 2057/91, sets up general principle of penal law and lists the crimes against the Indians and the respective penalties. Articles 157 and 158 are of particular interest to the present analysis. Article 157 considers it

Arquivo ISA

Note that, before considering further the issues on industrial property protection of indigenous knowledge, Article 18, PL 2057/91, established a new principle in the field of industrial property protection, explicitly recognising that their knowledge is particularly important in the pharmaceutical and biotechnological fields.

Further, it is established that indigenous communities, or any of their members, have the right to apply for a patent of invention, utility model, industrial model or industrial design which has been developed utilising their traditional collective knowledge[135]. The patent will be always granted under the name of the respective indigenous community and, as a consequence, will be considered null and void if granted individually[136].

It is also established by PL 2057/91 that the access, utilisation and application of indigenous traditional rights in scientific research aiming at industrial or commercial ends will be allowed only with the previous written consent of the indigenous community[137]. The consent in question shall have the form of a written contract[138], drafted with the legal assistance of the Public Ministry, in which the specific contractual conditions will be determined, including a just and equitable share of the industrial or commercial benefits of the results of the research[139]. All the information that has been provided by the indigenous communities during the negotiations of the contract, which includes indigenous knowledge, will be considered confidential and will require previous authorisation from the community to be transmitted to someone else[140].

Also, the current version of PL 2057/91 considers that the indigenous communities will be deemed automatically co-proprietors of any invention, utility model, industrial model or industrial design which has utilised, directly or indirectly, their traditional knowledge or models.[141] Taking that into account, anyone who applies for a patent based on traditional

---

a crime to utilise, commercially or industrially, genetic or biological resources, in the indigenous peoples lands, without the previous written consent of the indigenous society which owns that land. Article 158 considers it a crime to utilise, commercially or industrially, directly or not, traditional indigenous knowledge, patentable or not, without the previous written consent of the indigenous society which has the permanent possession of the traditional knowledge in question.

[133]Civil responsibilities will be governed by Brazilian Civil Code, note 115, *supra*, and includes any moral and/or material damages against indigenous societies.

[134]PL 2057/91, Art. 18 (2).

[135]*Ibid.*, Art. 19, *caput*.

[136]*Ibid.*, Art. 19 (1).

[137]*Ibid.*, Art. 20, *caput*. *Cf.* Art. 157.

[138]*Cf.* PL 2057/91, Art. 46, which states that any type of contract between an indigenous community and a foreign person, entity or undertaking will be supervised by the Brazilian government who will defend, coraterally, the interests and rights of the respective communities in the national and international forum.

[139]PL 2057/91, Art. 20 (1).

[140]*Ibid.*, Art. 20 (3).

[141]*Ibid.*, Art. 21, *caput*.

Acervo ISA

knowledge or model must mention which indigenous community shall be included as co-proprietor of the patent[142].

This part of PL 2057/91 also refers to several procedural and administrative rules which shall be briefly considered. Firstly, it is important to bear in mind that all acts aiming at the commercial or industrial use of indigenous knowledge or model will be deemed null and void if there is no written authorisation of the indigenous community in question and/or if the co-proprietorship of the patent is not considered in the contract[143]. Secondly, the fees related to the patent application and maintenance of the rights do not apply to indigenous communities[144], but in the case of a co-proprietorship, the other patent owner, if not an indigenous community, will be liable to pay the full amount of the fees[145]. Also, most of the requirements in question do not apply to pure scientific research which has no aim of profit[146].

It is important to remark also that the indigenous communities may request, administratively or judicially, the declaration of nullity of a patent or model, which has been based on indigenous traditional knowledge or model, contrary to the provisions of this law[147]. Brazilian administrative or judicial[148] authorities will have exclusive jurisdiction to resolve any dispute related to judicial acts regarding the intellectual property rights of indigenous communities[149].

(b) Non-patentable subject-matter

A single provision of PL 2057/91 is the one which proposes more effective understanding of industrial property issues in connection with indigenous knowledge, practices and innovations. As has been briefly mentioned before, indigenous traditional knowledge and models do not quite fulfil the requirements of patentability, in particular those related to the state of the art and its consequent legal novelty. It is possible that administrative and juridical interpretation of existing laws could apply patent principles taking into account the particular characteristics of indigenous traditional knowledge and practices.

---

[142] *Ibid.*, Art. 21 (1).
[143] *Ibid.*, Arts. 19 (1), 20 (4), 21 (1) and 22, Sole paragraph.
[144] *Ibid.*, Art 19 (2).
[145] *Ibid.*, Art. 23.
[146] *Ibid*., Art. 29.
[147] *Ibid.*, Art. 22, *caput*.
[148] According to Article 109 (XI) of the Brazilian Constitution, the Federal Justice has exclusive jurisdiction to decide upon any dispute on indigenous rights. PL 2057/91, in Article 25, Sole Paragraph, and Article 56, repeats the constitutional provision giving exclusive jurisdiction to the Federal Justice to decide upon such disputes.
[149] PL 2057/91, Art. 25, *caput*.

Acervo ISA

PL 2057/91 has therefore proposed in Article 28 that the protection determined by Chapter II, Title II, PL 2057/91, includes traditional indigenous knowledge about characteristics or properties of ecosystems, natural habitats, living species, plants or animals, micro-organisms, pharmaceuticals and natural essences, or any biological or genetic process or application, which is not capable of patent protection. In simple words, the national legislature has defined the broad application of indigenous rights. It has, nevertheless, forgotten to define which legal mechanism will be provided for the protection of non-patentable subject-matter. It is a matter that will certainly be considered in more detail after the law is interpreted by administrative authorities[150].

It seems that the national legislature decided to create a legal mechanism to include the broad application of indigenous knowledge under legal protection. This new industrial property principle will probably lead national patent offices to create administrative jurisprudence on the analysis of the conditions of a patent application which includes the utilisation of indigenous knowledge. Consequently, national judges will be bound to consider the broad application of indigenous communities' intellectual property principles when deciding upon disputes.

(c) Copyrights

The issues of copyright protection over the intellectual productions or spiritual creations of indigenous communities is also discussed extensively by PL 2057/91. Indigenous communities are therefore considered the owners of the moral and economic rights over intellectual productions and spiritual creations which have been produced collectively and performed somehow[151]. It is noteworthy that PL 2057/91 considers the protection of both the economic[152] and the moral[153] rights over these intellectual productions.

---

[150]In the case of Brazil, the authority with the functions of analysing and granting patents, as well as deciding upon administrative appeals, is the National Institute of Industrial Property (INPI), created by Law N. 5.648, of 11 December 1970.

[151]PL 2057/91, Art. 31, *caput*. Further, Articles 31 (I) to (VII) lists exhaustively examples of intellectual property rights of indigenous communities, and in Article 31 (VII) it emphasises that any other intellectual production or spiritual creations of indigenous communities are protected, even if they have been transmitted orally, independent of its origin in time. In the case of intellectual production or spiritual creations which have been developed individually, the provisions of Law N. 5.988, of 14 December 1973, which regulates authors' rights, will apply.

[152]The economic rights are those which entitle the author to authorise reproduction, translation or adaptation of his work, as well as its public performance, against the appropriate payment of royalties.

[153]Article 6*bis* (1), Berne Convention, defines moral rights as those which entitle the author to claim authorship of his work and to object to modifications or mutilations of his work which would be prejudicial to his honour or reputation. It further emphasises that moral rights continue to exist even after the author has transferred his

Acervo ISA

Thus, any form of reproduction, utilisation or communication to the public, directly or indirectly, by any means, of indigenous collective creations is allowed only with the express written authorisation of the community in question[154]. This authorisation will have the form of a written contract, done with the legal assistance of the Public Ministry, and in which will be included the authorisation to divulge the intellectual production which is the subject-matter of the contract, as well as the just and equitable payment to the community in question[155] and the other terms of the contract[156].[157]

PL 2057/91 also considers that the reproduction, application, publication or communication to the public - by any form, process or means - of indigenous intellectual creations, for the purposes of education, information, scientific studies or charity, without profit ends, will not be considered to be against the provisions established by PL 2057/91[158].

Some institutional mechanisms for the protection of indigenous intellectual production are also created by PL 2057/91. Firstly, it is established that the federal organ responsible for indigenous matters will provide free service for the registration of the intellectual productions or creations of indigenous communities[159]. The indigenous federal organ will also have other tasks such as the arbitration of disputes over indigenous intellectual property rights[160] and all the administrative structures for the protection of authors' rights of indigenous communities, including a funding mechanism[161].

---

economic rights. Conversely, Article 9 (1), TRIPS Agreement, says that "... Members shall not have rights or obligations under this [TRIPS] Agreement in respect of the rights conferred under Article 6*bis* of that [Berne] convention or of the rights derived therefrom".

[154]PL 2057/91, Art. 38, *caput*. *Cf.* Art. 37 which says that indigenous communities have all the rights to use their intellectual and/or spiritual creations themselves, and also the right to authorise their utilisation by third parties.

[155]*Ibid.*, Art. 38 (1).

[156]*Ibid.*, Art. 38 (2). If the contract does not mention the duration of its obligations, it will be deemed null.

[157]Note also that it is recognised that indigenous communities have the right to manage the financial resources received for their authors' rights (PL 2057/91, Art. 38 (3)).

[158]PL 2057/91, Art. 40 (I). Also, the quotations of indigenous productions in books, articles, periodicals or other type of academic analysis are allowed, pursuant to Article 40 (II). In any case, the name of the community, author of the work, has to be acknowledged and a copy of the work has to be sent to the community (*Ibid.*, Art. 40, Sole paragraph).

[159]*Ibid.*, Art. 34, *caput*. Note, however, that this registration is not compulsory for the purposes of validity and application of the indigenous' rights provided by PL 2057/91 (*Ibid.*, Art. 34 (4)).

[160]*Ibid.*, Art. 34 (1) (V).

[161]*Ibid.*, Art. 34 (1) (VII), and Arts. 34 (2) (I) and (II).

Acervo AISA

4. A POSSIBLE OUTCOME OF THE WTO SYSTEM

The results of the Uruguay Round of negotiations of General Agreement on Tariffs and Trade (GATT)[162] are also relevant to the present discussion. The conclusions of the Uruguay Round have re-modelled the international trade system and agreed upon the most comprehensive set of regulations on intellectual property protection.

The Ministerial Meeting of the GATT in Marrakesh, held on 14 April 1994, adopted a Decision on Trade and Environment[163] which calls for the establishment of a Committee on Trade and Environment (CTE) open to all Members of the WTO. The CTE shall initially address "... the relationship between the provisions of the multilateral trading system and trade measures for environmental purposes, including those pursuant to multilateral environmental agreements"[164], *inter alia*, and "... will consider ... the relevant provisions of the Agreement on Trade-Related Aspects of Intellectual Property Rights as an integral part of its work, ..."[165].

As a consequence, the analysis of the relevant provisions of the TRIPS Agreement, together with the analysis of the relationship between the WTO and multilateral environmental agreements, might lead the CTE to discuss the provisions of the CBD which deals with access to genetic resources, access to and transfer of technology, biotechnology, and the protection of the rights of local and indigenous communities.[166] In fact, it seems that the CTE has already started to consider several issues in the context of environmental protection and its relationship

---

[162]The origins of the GATT date back to 24 March 1948, when fifty two States signed, in Cuba, the Havana Charter aiming at setting up rules to regulate and encourage the liberalisation of international trade, and wishing to create an International Trade Organization (ITO). Ironically enough, the initiative to establish such an organisation was taken by the United States and the most important reason for the ITO's failure was that the US Congress did not approve the so-called "ITO Charter". The GATT is itself an international agreement that, because of the historical evens which occurred during the attempt at establishing the ITO, had the status of an international binding agreement, and the functions of a multilateral trade organisation. See, generally, **John H. Jackson**, The World Trading System: Law and Policy of International Economic Relations, Massachusetts: The MIT Press (1989).

[163]**GATT**, The Results of the Uruguay Round of Multilateral Trade Negotiations: The Legal Texts, Geneva: GATT Secretariat (1994), pp. 469-471.

[164]*Ibid.*, p. 470.

[165]*Ibid.*, p. 471. From the announcement of the first drafts of the Final Act up to 1994 Decision on Trade and Environment, note 163, *supra*, discussions of environmental issues were generally unsatisfactory. However, at the end of the Uruguay Round of negotiations there was an agreement on the terms of reference for the development of a work programme on the links between trade, environment and sustainable development. See, *e.g.*, **Charlie Arden-Clarke**, The GATT Report on Trade and Environment - A Critique by the World Wide Fund for Nature, Gland/Switzerland: WWF (1992), **Foundation for Environmental Law and Development (FIELD)**, The Multilateral Trade Organization: a Legal and Environmental Assessment, Gland/Switzerland: WWF Research Report, September 1992, and **Piritta Sorsa**, GATT and Environment, [1992] 1 *The World Economy* 115-133.

[166]A link between IPRs and the liberalisation of trade may be viewed more clearly in the institutional framework of the WTO provided below, in Appendix B.

Acervo ISA

with the TRIPS Agreement[167]. Although this discussion is still at a very early stage within the WTO framework, the CTE is already taking a step in the direction of clearing the doubts on the relationship between the provisions of the TRIPS Agreement and the principles created by the CBD.

Within the TRIPS Agreement there are some provisions that are likely to conflict with the principles of the CBD. It is worth noting that the TRIPS Agreement aims to provide a minimum basis for the harmonisation of national intellectual property laws which will lead to stronger protection of IPRs through a governmental authorisation to the right holder to exploit, under exclusive terms, the rights conferred to him. The CBD accepts that IPRs are part of technology transfer agreements and of the actions aiming at the exploitation of biological diversity. The CBD, however, is concerned primarily with technologies which may be developed to support the conservation and sustainable use of biological resources. Property rights systems shall not run counter to the objectives of the CBD.

Probably most of the provisions of the TRIPS Agreement are of interest in the present analysis. This Section shall, nevertheless, consider, in particular, two areas which may lead to some solutions or conflicts between the two international arrangements.

Article 27 of the TRIPS Agreement provides that Members of the WTO Agreement shall grant protection to all inventions, in all fields of technology, which are new, which involve an inventive step, and which are capable of industrial application[168]. Members of the WTO Agreement are nevertheless authorised to exclude from patent protection inventions which are against public order, morality, human, animal or plant life or health, or those inventions which are likely to cause serious prejudice to the environment[169].

The TRIPS Agreement considers the issues on environmental protection in very broad terms. How far this provision would authorise Members to take further action towards environmental protection, even by denying patent protection for some inventions on "environmental" grounds, is still a matter left for future interpretation.

Article 27 (3) (b) of the TRIPS Agreement also allows Members of the WTO Agreement to exclude from patent protection plants and animals and essentially biological

---

[167]**Michael Flitner**, Review of National Actions on Access to Genetic Resources and IPRs in Several Developing Countries, Gland/Switzerland: WWF (1995), affirms that during a meeting in June 1995 the CTE addressed for the first time the issues on IPRs and biodiversity, and that some delegations expressed worries in relation with the patentability of life forms.

[168]TRIPS Agreement, Art. 27 (1).

[169]*Ibid.*, Art. 27 (2).

processes for the production of plants and animals. Members are, nevertheless, required to protect micro-organisms, non-biological and microbiological processes and plant varieties[170].

In this regard, a few points must be made. Firstly, the wording of the TRIPS Agreement in relation with the protection of biotechnological products or processes is very vague in substance. It is not yet clear how this will be enforced by the dispute settlement mechanism of the WTO. It is also not clear if the developed economies will accept that developing countries' use, on grounds of "environmental" protection, of the exception provided by Article 27 (2), TRIPS Agreement, to refuse the granting of patent rights to biotechnological invention, even if the invention is a micro-organism, a non-biological or a microbiological process. In addition, it is not clear what the negotiators of the TRIPS Agreement meant by a non-biological process for the production of plants or animals. How a plant or animal could be produced by a process that is not partly or entirely a biological process is still to be determined and does not seem to be very feasible.

Secondly, the provisions of the TRIPS Agreement, although not expressly mentioned, are to a large degree based on the wording of the 1978 revision of the UPOV Convention. Developing countries may benefit more from the 1978 version of the UPOV Convention which accepts a rather flexible approach to protection. While the 1991 version of the Convention states in Article 2 that "[e]ach Contracting Party shall grant and protect breeders' rights", the same provision in the 1978 text accepts that Contracting Parties may recognise the right of a breeder either by the plant breeders' rights system, by patents, or by a combination of both systems[171].

Finally, it is important to remark that it was decided that Article 27 (3) (b) should be reviewed in four years after the date of entry into force of the WTO Agreement. In the future, it is possible that issues concerning the "biodiversity-related aspects of intellectual property rights" will become more important within the context of the TRIPS Agreement and perhaps it will be the task of the CTE to enhance this importance. It is definitely necessary that further consideration is given in this regard by Members of the WTO Agreement, to avoid future conflicts between the principles and norms of the CBD and those of the TRIPS Agreement, and to promote sustainable development of biological resources.

---

[170]Plant varieties are to be protected either by patents, by an effective *sui generis* system or by any combination thereof.

[171]According with **James Cameron & Zen Makuch**, The UN Biodiversity Convention and the WTO TRIPS Agreement: Recommendations to Avoid Conflict and Promote Sustainable Development, Gland/Switzerland: WWF (1995), p. 12, to accede to the 1978 version of the UPOV Convention States should had done so by the end of 1995.

Acervo ISA

In addition to the provisions on patent protection, the TRIPS Agreement governs the protection of undisclosed information which, in my opinion, may be used as a legal tool to protect traditional knowledge of local and indigenous communities. Despite juridical and doctrinal doubts whether trade secrets are intangible property or "subjective rights" and, therefore, if they are protectable under the current system of intellectual property laws[172], Article 39 (2), TRIPS Agreement, rules that Members of the WTO Agreement shall give the possibility to anyone (either natural or legal person) "... of preventing information lawfully within their control from being disclosed to, acquired by, or used by other without their [owners'] consent in a manner contrary to honest commercial practices ...". The conditions to be fulfilled before protection may be granted are the following: (a) the existence of information which is secret; (b) the information has commercial value because it is secret; and (c) all reasonable steps have been taken to keep such information secret. In the absence of any provision regulating the term of protection of undisclosed information, it is possible to conclude that the TRIPS Agreement grants protection for valuable undisclosed information for an unlimited period, if the conditions above-listed are met.

This seems to be of great importance in protecting knowledge that has been developed and which has endured throughout the centuries. However, some substantive requirements of the law apparently cannot be met by indigenous societies. In the case of a patent, for instance, the conditions of novelty and inventive activity, as traditionally established in connection with the prior art concept, are unlikely to be fulfilled by indigenous knowledge and practices. Also, in relation to trade secrets it is possible to argue that protection of information as a secret is no longer available in a legal sense in so far as indigenous communities and individuals have been exchanging information about their environment on a large scale. Case law may broaden the interpretation of legal concepts and recognise, within the traditional intellectual property system, indigenous intangible rights.

CONCLUDING REMARKS

The present analysis has described the "modern" approach towards the protection of IPRs as in connection with biodiversity conservation. Probably one of the greatest challenges that the international community is facing at the turn of the century is to determine a balance between

[172]See, *e.g.*, **Stanislaw J. Soltysinski**, Are Trade Secrets Property?, [1986] 17 *International Review of Industrial Property and Copyright Law* 331-356, and **Sheldon Burshtein**, Confidential Information is not Property in Canada, [1988] 11 *Industrial Property* 55-58.

Acervo ISA

the common interest of biodiversity conservation and the private interest related to the activities of industries which use biodiversity resources as a main source of materials. This balance is not easily reached and the legal mechanisms agreed so far do not cover the subject exhaustively. The international community, however, has agreed upon very important principles which have undoubtedly influenced the debate about the sustainable use and conservation of biodiversity.

It is obvious, from the present discussion, that the CBD did not attempt to set up very strict and detailed norms. The text of the CBD must be seen rather as a list of binding principles to guide national legislative initiatives. These principles aim at the conservation of biological diversity, the sustainable use of its components and the fair and equitable share of the benefits arising from the utilisation of genetic resources. The goal of fair and equitable share of the use and exploitation of genetic resources is, for the purposes of the present analysis, the most important one, in so far as the CBD recognises the intrinsic economic, commercial and scientific value of biodiversity resources, providing thus a link between international and national trade and biodiversity conservation.

I tend to think that the established international economic order should be re-thought. The present system is unfair. Of course, there will always be the rich and the poor. Recently, however, the gap has grown too wide and the situation is becoming unbearable. In 1992, the UNCED appears to have concluded that the primary sources of the destruction of the planet's environment are firstly, the industries of the First World, secondly, the poverty of the Third World and, thirdly, the deforestation which is occurring in the impoverished South. Not surprisingly, the discussions have dealt primarily with the last of these sources.

The valuable biological resources held by the poor countries might be used as an essential bargaining tool to restrict the practices of the rich countries. Moreover, these resources can be used to further the economic and technological development of the poor countries. If the trading world continues to use the traditional concepts of the established international economic order which maintain the current system of international power, the planet's environment will be put in jeopardy. Thus, although it is claimed that the protection of the environment is the most important priority, this would not in fact be the case. Trade must take into account the priorities of the poor as well as the investments and needs of the rich. Profits must be used to move towards a more just, equitable and stable society with a higher shared welfare. The implementation of the provisions of the CBD must take into account not

Acervo ISA

only practical, economic and commercial aspects, but also the social and technological needs of developing countries and the ethical and moral rights of indigenous and local communities.

It is necessary, therefore, to give emphasis to the fact that the implementation of the concept of sovereign rights over genetic resources, in this context, is an strategic issue. As has been mentioned, national legislation have exclusive jurisdiction for regulating access to genetic resources and this includes the discretion to determine national proprietorship over biological. The mere affirmation of the sovereign rights principle, however, is not enough. Technology transfer, as recognised by several provisions of the CBD, is an essential mechanism to enhance the protection and the sustainable use of the biodiversity of the planet. Thus the application of the sovereign rights principle must be looked at in broad terms. National legislation shall draw up guidelines which are sustainable for the purpose of biodiversity conservation and that accept the importance of modern technology, as well as of the traditional practices of local and indigenous communities.

The evolution of the principles and substantive law for the conversation of biological diversity - including access to genetic resources, transfer of technology and the protection of indigenous rights - is not really a matter of controversy. National legislative measures seem necessary, but they must go beyond environmental policy considerations. National science and technology policies must take into account measures necessary to protect the environment in its broadest sense. Access to genetic resources presents a unique possibility of bargaining against the capitalist world. If biological resources will be exploited - and they will be by indigenous communities, national governments or foreign undertakings - regulatory measures are indeed necessary.

Legislative initiatives should be welcomed, but they are not necessarily the easiest - or the shortest - way to achieve the goals established by the CBD. Edesio Fernandes[173], discussing the implementation of environmental international principles into the Brazilian legal framework, pointed out that,

> As a matter of fact, it is not a case of enacting more laws: on the contrary, even if it is true that some laws need to be improved and updated, the point is to guarantee the proper use of the potential offered by the existing legislation.

And that is the specific circumstance that has been discussed in this Working Paper. While there is no adequate legislation to apply and enforce intangible indigenous rights and to

Acervo ISA

regulate access to genetic resources, this matter could be analysed by national administrative and judicial authorities, bringing together existing ordinary and constitutional laws, international rules which are already part of the national legal framework and forthcoming principles arising from the legislative debate. National authorities are bound by the instruments mentioned above and will have to decide upon it when analysing the conditions of an intellectual property application (national industrial property offices) and when judging a particular dispute concerning either access to genetic resources or indigenous rights (national courts). Juridical understanding of the matter will be then construed, and further interpretative approach to forthcoming legislation could be enriched.

The foregoing introductory remarks are necessary to present further conclusions arising from the issues analysed in this Working Paper. As has been mentioned, compared with the government itself the Brazilian Parliament has shown a higher degree of legislative initiative in relation with biodiversity conservation matters. The government has failed to address the subject in a legislative form which has led to a lack of co-ordinated actions aiming at implementation of the CBD. This may create an inappropriate interpretation of the principles established by the CBD and by the Brazilian Federal Constitution. A clear example of this situation is that a legislative Bill, originating in the Chamber of Deputies (PL 2057/91), discusses the issues on the protection of traditional knowledge and practices of indigenous communities while another legislative Bill, originating in the Federal Senate (PLS 306/95), proposes norms to regulate access to genetic resources, dealing also with the issues on the protection of traditional knowledge and practices. Government and both Houses of Parliament should work in harmony to draw up the necessary legal measures to implement the principles of biodiversity conservation.

PLS 306/95, in particular, should be subject to some modifications. Firstly, Article 1 (III), PLS 306/96, determines that the country shall participate in the economic and social benefits arising from the exploitation of genetic resources, but it does not give emphasis to the participation in the scientific benefits as a necessary mechanism to determine national measures on the implementation of the fair and equitable sharing of the benefits arising from the exploitation of national genetic resources. Scientific benefits are, indeed, a crucial principle to be included together with the economic, commercial and social benefits.

---

[173] **Edesio Fernandes**, Law, Politics and Environmental Protection in Brazil, [1992] 1 *Journal of Environmental Law* 41-55, at p. 43.

Acervo ISA

Moreover, the committee created by Article 5 of PLS 306/95 fails to include representatives of local and indigenous communities as part of the composition of such institutional mechanism created to monitor biodiversity conservation and sustainability. All biodiversity-related matters must consider an effective participation of indigenous and local communities in the decision-making process and during the development of strategies. This is a basic condition to consider an appropriate implementation of the CBD, in so far as research on genetic resources may have, directly or indirectly, influence in the lifestyle and cultural habits of local and indigenous populations.

PL 2057/91 and PLS 306/95 are in general terms compatible with the CBD. The CBD leaves a great degree of discretion to national legislation and does not discuss further how each of its principles should be interpreted by national law. It is important to consider, in this context, that national laws have great opportunities to develop further legal mechanisms which are compatible with their economic, social and technological needs. The implementation of the CBD by national legislation should be a result of a national debate with the participation of all parties involved, including Parliament, the scientific community, local and indigenous communities, non-governmental and governmental organisations, universities, as well as private and public undertakings. Within this discussion a national strategy towards biodiversity sustainability and conservation should be drawn up.

The issues relating to the implementation of the Convention on Biological Diversity are clearly complex and broad. There is a need to determine how national laws and policies will deal with these modern aspects of IPRs. The implementation of common provisions in this field, however, must be looked at from a more pragmatic viewpoint. Environmental considerations of the policy-making process has to be part of the whole system of science and technology and industrial policies. An IPRs framework must, therefore, consider the particular characteristics of access to genetic resources, technology transfer agreements, biotechnology and the protection of traditional knowledge and practices. All these areas, as has been described in the present analysis, are completely inter-connected and they must be harmonised as such.

To discuss the harmonisation of the "biodiversity-related aspects of intellectual property rights" one must firstly consider some policy measures which are part of the overall context. At national level, a system must be created to determine a decentralised approach towards biodiversity conservation and sustainable use. More decision-making powers shall be

given to local and indigenous communities, while financial and legal assistance shall be provided by national governments.

Complementarily, a more effective interaction between all "stakeholders" should be encouraged by a common regulation aiming at monitoring and preserving biodiversity. The concept of the expression "stakeholders" in this context has to be broadly defined by a common legislation as well. "Stakeholders" are local and indigenous communities, public interest, scientific and academic communities, private sector and governmental and non-governmental agencies. This is indeed a broad definition of the concept. The difficulty presented here is not related to the definition of the concept itself, but with the establishment of the role of each "stakeholder" in the process of biodiversity conservation. This role has to be determined by policy guidelines on environmental conservation, considering, obviously, science and technology and industrial policies as part of the process in its entirety. Legal instruments will only determine the degree of application of the guidelines provided by policy measures.

Policy measures must also consider the development of administrative and institutional guidelines. At this stage of the establishment of mechanisms for biodiversity conservation, it seems that the functions of some administrative organs are overlapping other governmental and non-governmental organs' functions. This overlap does not only leads to unnecessary repetition of work, but also to gaps which are not fulfilled by either organs.

Moreover, there are key elements which should be also considered to determine the level of technology transfer from developed countries to the region. These elements should be used as the basis of national or regional regulations in this field: (a) training and access to information; (b) development of technological capacity in biodiversity prospecting through technology transfer agreements; (c) development of regional negotiating power in biodiversity prospecting, which would consider the balance between environmental, economic and scientific benefits; (d) encouragement of access to technology which is environmentally friendly through co-ordinated strategies on "North/South" relations; and (e) encouragement of innovations in public or private national or regional industries, by supporting their participation in the process of biodiversity prospecting.

On the international level, it is possible to draw up further actions towards international recognition and acceptance of the sovereign rights principle over genetic resources and of the value of traditional practices and knowledge. Co-ordination in the actions of developing countries which are the holders of bio-genetic resources are necessary to work towards the

inclusion of multilateral acceptance of biodiversity principles. Within the WTO system, particularly, co-ordinated actions should move towards the inclusion of strong provisions on the recognition of the sovereignty of national regulations on access to genetic resources. The forthcoming revision of Article 27 (3) (b) of the TRIPS Agreement should contain provisions which guarantee the multilateral acceptance of the need for the creation of a *sui generis* system for the protection of traditional knowledge and practices of local and indigenous communities as well. Co-ordinated actions in this manner could be also negotiated under the auspices of the WIPO.

Acervo ISA

APPENDIX A

LEGAL COMPONENTS OF THE TRRs CONCEPT

Prepared by the "Working Group on Traditional Resource Rights"
Oxford Centre for the Environment, Ethics & Society
Mansfield College
University of Oxford
Oxford OX1 3TF
Tel/Fax: 01865-284665
Email: wgtrr.ocees@mansfield.oxford.ac.uk

BUNDLE OF RIGHTS	SUPPORTING AGREEMENTS: Legally binding	SUPPORTING AGREEMENTS: Non-legally binding
Human rights	*ICESCR, ICCPR, CDW, CERD, CG, CRC, NLs*	*UDHR, DDRIP, VDPA*
Right to self-determination	*ILO 169, ICESCR, ICCPR*	*DDRIP, VDPA*
Collective rights	*ILO 169, ICESCR, ICCPR*	*DDRIP, VDPA*
Land and territorial rights	*ILO 169, NLs*	*DDRIP*
Right to religious freedom	*ICCPR, NLs*	*UDHR*
Right to development	*ICESCR, ICCPR, ILO 169*	*DDHRE, DDRIP, DHRD, VDPA*
Right to privacy	*ICCPR, NLs*	*UDHR*
Prior informed consent	*CBD, NLs*	*DDRIP*
Environmental integrity	*CBD*	*RD, DDHRE*
Intellectual property rights	*CBD, WIPO, GATT, UPOV, NLs*	
Neighbouring rights	*RC, NLs*	
Right to enter into legal agreements, such as contracts and covenants	*NLs*	
Cultural property rights	*UNESCO-CCP, NLs*	
Right to protection of folklore	*NLs*	*UNESCO-WIPO, UNESCO-F*
Right to protection of cultural heritage	*UNESCO-WHC, NLs*	*UNESCO-PICC*
Recognition of cultural landscapes	*UNESCO-WHC*	
Recognition of customary law and practice	*ILO 169, NLs*	*DDRIP*
Farmers' rights		*FAO-IUPGR*

Acervo ISA

International Agreements Supporting the TRR Concept

Legally binding agreements in force

CBD	Convention on Biological Diversity (1992)
CDW	Convention on the Elimination of all Forms of Discrimination Against Women (1979)
CERD	Convention on the Elimination of all Forms of Racial Discrimination (1966)
CG	Convention on the Prevention and Punishment of the Crime of Genocide (1948)
CRC	Convention on the Rights of the Child
GATT	Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations (1994)
ICESCR	UN international Covenant on Economic, Social and Cultural Rights (1966)
ICCPR	UN International Covenant on Civil and Political Rights (1966)
ILO 169	International Labour Organisation Convention 169: Convention Concerning Indigenous and Tribal Peoples in Independent Countries (1989)
NLs	National laws
RC	Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organisations (1961)
UNESCO-WHC	UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (1972)
UNESCO-CCP	UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property (1970)
UPOV	International Convention for the Protection of New Varieties of Plants (1961, revised in 1972, 1978 and 1991)
WIPO	The World Intellectual Property Organisation, which administers international IPRs agreements, such as:

The International (Paris) Convention for the Protection of Industrial Property (1883, revised most recently in 1967)

The International (Berne) Convention for the Protection of Literary and Artistic Works (1886, revised most recently in 1971)

The Madrid Agreement Concerning the International Registration of Trademarks (1891, revised most recently in 1967)

The Lisbon Agreement for the Protection of Appelations of Origin and their International Registration (1958, revised most recently in 1967)

The Patent Cooperation Treaty (1970)

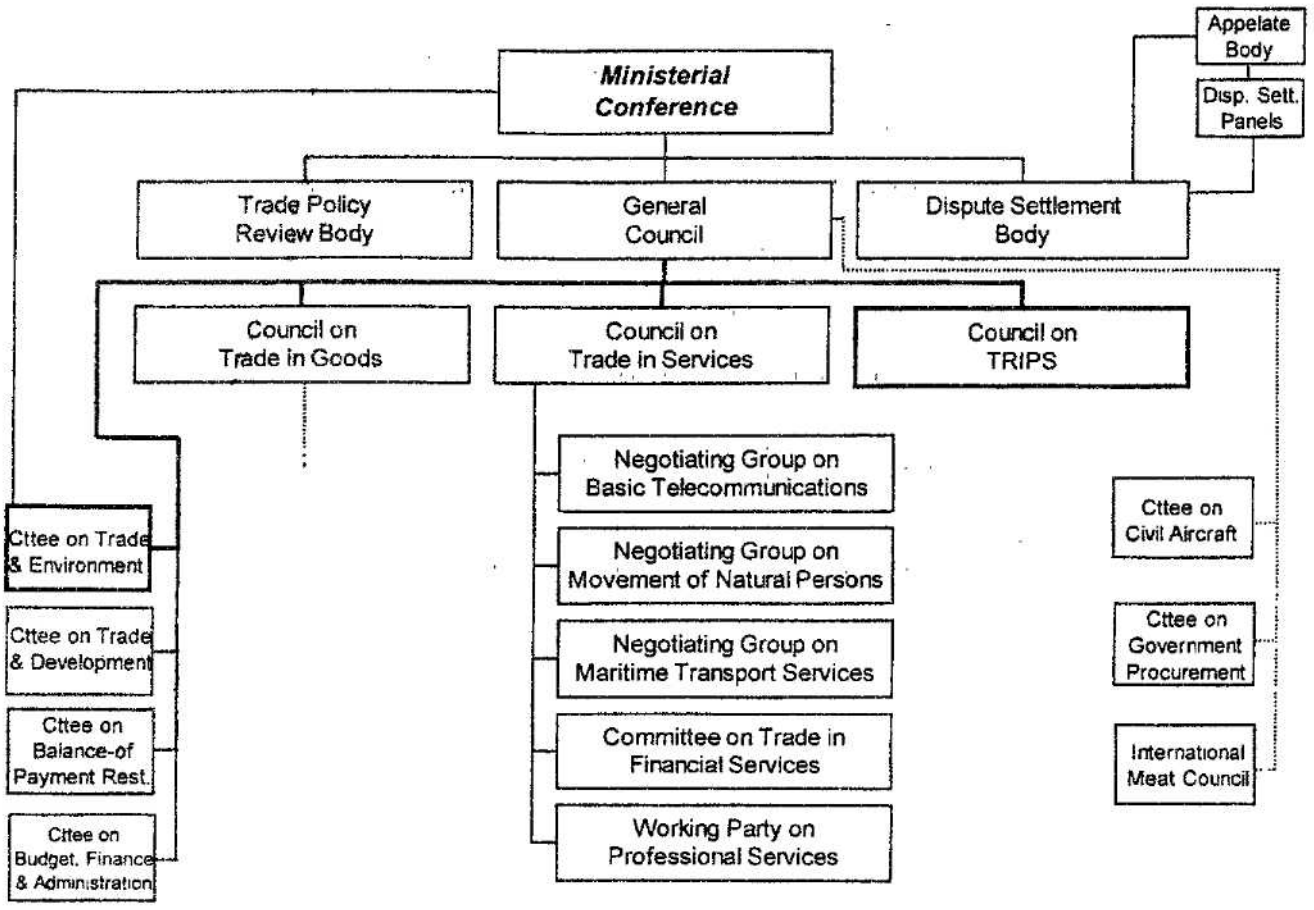
Non-legally binding agreements

DDHRE	UN Draft Declaration of Principles on Human Rights and the Environment (1994)
DDRIP	UN Draft Declaration on the Rights of Indigenous Peoples (formally adopted by the UN Working Group on Indigenous Populations in July 1994)
DHRD	UN Declaration on the Human Right to Development
FAO-IUPGR	FAO International Undertaking on Plant Genetic Resources (1987 version)
RD	Rio Declaration (1992)
UDHR	Universal Declaration of Human Rights (1948)
UNESCO-F	UNESCO Recommendations on the Safeguarding of Traditional Culture and Folklore (1989)
UNESCO-PICC	UNESCO Declaration on the Principles of International Cultural Cooperation (1966)
UNESCO-WIPO	UNESCO-WIPO Model Provisions for National Laws on Protection of Expressions of Folklore Against Illicit Exploitation and Other Prejudicial Actions (1985)
VDPA	UN Vienna Declaration and Programme of Action (1993)

Acervo ISA

APPENDIX B

WTO's INSTITUTIONAL FRAMEWORK



Source: WTO Focus, N. 1, January/February 1995, p. 5