BENEFIT SHARING IN ACCORDANCE WITH THE CONVENTION ON BIOLOGICAL DIVERSITY

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ABSTRACT

Key words: Biological Diversity - Convention on Biological Diversity (CBD) – Environment - Access and Benefit Sharing - Sustainable Use -Traditional Knowledge - Technology Transfer - National Environmental Management: Biodiversity Act (BDA) - South Africa

The Convention on Biological Diversity (CBD) significantly enhanced the scope and potential effectiveness of the international legal regime for the conservation of biological diversity world wide together with the sustainable use of its components. It goes beyond the conservation of biological conservation *per se* and comprehends such diverse issues as sustainable use of biological resources, access to genetic resources, the sharing of benefits derived from the use of genetic material and technology, including biotechnology.

The CBD has three objectives, which are the conservation of biological diversity, secondly the sustainable use of its components and thirdly the fair and equitable sharing of benefits arising out of the utilisation of genetic resources. The third objective includes the sharing of benefits by means of appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over such resources and technologies as well as appropriate funding. As part of the process of achieving these goals, the CBD establishes a new international framework for access to genetic resources and the sharing of benefits from their use.

In addition to its conservation measures, the CBD is also an economic treaty in the sense that it develops and regulates the ongoing exchange of genetic resources and, in particular, the emerging trade in biotechnology. During the negotiations of the CBD the concept of the trade in biotechnology dominated much of the discussions surrounding the Convention. This was the cause of deep differences between the technologically rich north and the biodiversity rich south.

It was and still is apparent that developed countries, or corporate companies in these countries, exploit natural recourses only found in developing countries, without sharing the resulting proceeds. It is shown that uneven distribution of natural, technological and economic resources occur in relationships between the northern hemisphere and its southern counterpart. It is a well-known fact that the northern hemisphere is financially and technologically superior to its southern counterpart.

Intellectual property rights ("IPR"), with specific reference to patent law, enables developed countries and/or companies in those countries to exploit this economic discrepancy. Developed countries accordingly acquire biological recourses and exploit them with resulting benefits thereby circumventing the sharing of such benefits through IPR systems. Benefits are thereby withheld from developing countries that provide such genetic recourses. The author will mainly focus on the question that arises as to how the CBD addresses benefit sharing in the light of the differences between the northern developed- and southern developing countries.

South Africa will be studied as an example of a developing country that incorporated the provisions of the CBD in its national legislation as it promulgated the National Environmental Management: Biodiversity Act (BDA), which embodies the guidelines and principles for bioprospecting and benefit sharing, captured in the CBD and the Cartagena Protocol. The provisions contained in the BDA will be used as a practical example of the application of the CBD in the municipal law of developing countries.

OPSOMMING

Sleutelwoorde: Biologiese Diversiteit - Konvensie aangaande Biologiese Diversiteit (KBD) – Omgewing - Toegang tot en Verdeling van Voordele-Volhoubare Gebruik - Tradisionele Kennis - Tegnologie Oordrag - Nasionale Omgewingsbestuur: Wet op Biodiversiteit (WOB) - Suid-Afrika

Die Konvensie aangaande Biologiese Diversiteit (KBD) het die omvang en potensiële effektiwiteit van die internasionale regsorde vir die bewaring van biologiese diversiteit regoor die wêreld vergroot en verbeter. Fokus is terselfdertyd ook geplaas op die volhoubare gebruik van biologiese hulpbronne. Die KBD strek verder as die blote bewaring van biologiese hulpbronne *per se* en handel oor diverse aangeleenthede wat onder andere die volhoubare benutting van biologiese hulpbronne, toegang tot genetiese hulpbronne, die verdeling van voordele verkry uit die verbruik van genetiese materiaal en tegnologie asook biotegnologie, insluit.

Die KBD bevat drie doelwitte. Eerstens die bewaring van biologiese diversiteit, vervolgens die volhoubare gebruik van die verskillende komponente van biologiese diversiteit en derdens die regverdige en gelyke verdeling van voordele wat spruit uit die benutting van genetiese hulpbronne. Die laaste doelwit sluit die verdeling van voordele in wat by wyse van toepaslike toegang tot genetiese hulpbronne geskied. Die toepaslike oordrag van relevante tegnologie met die inagname van alle regte tot sodanige tegnologie tesame met toepaslike befondsing, word ook hierby ingesluit. Die KBD skep 'n nuwe internasionale raamwerk vir toegang tot genetiese hulpbronne en die verdeling van voordele wat uit die gebruik daarvan voortspruit. Al voorgenoemde vorm deel van die proses om die doelwitte soos daarin vervat te bereik.

Aanvullend tot die vereistes wat gestel word aangaande bewaring, kan die KBD ook omskryf word as 'n ekonomiese konvensie in die sin dat dit die voortdurende uitruil van genetiese hulpbronne, en in besonder die groeiende handel in biotegnologie, ontwikkel en reguleer. Gedurende die

onderhandelings van die KBD het die konsep van handel in biotegnologie die die meeste aandag geniet. Dit was vanweë die diepliggende verskille tussen die tegnologiese Noorde en die biodiverse Suide.

Dit was in die verlede en is steeds duidelik dat ontwikkelde lande of korporatiewe maatskappye in sulke lande natuurlike hulpbronne wat te vinde is in ontwikkelende lande, ontgin sonder om die voordele wat daaruit voortspruit, te deel. Dit is bewese dat daar 'n oneweredige verdeling van natuurlike, tegnologiese en ekonomiese hulpbronne is tussen die noordelike en suidelike halfronde. Die noordelike halfrond is finansieel en tegnologies meer gevorderd as die suidelike halfrond. Intellektuele goedere regte (IGR), met spesifieke verwysing na patentregte, stel ontwikkelde lande en / of maatskappye in daardie lande in staat om hierdie ekonomiese gaping uit te buit. Ontwikkelde lande verkry derhalwe die biologiese hulpbronne, eksploiteer dit en bly in gebreke om die voordele wat daaruit voortspruit te deel. Deur middel van IGR-sisteme word voordele weerhou van 'n menigte ontwikkelende lande wat genetiese hulbronne verskaf.

Hierdie studie fokus op die vraag wat ontstaan, synde hoe die KBD hierdie verdeling van voordele aanspreek in die lig van die verskille tussen ontwikkelde- en ontwikkelende lande. Suid-Afrika sal bestudeer word as 'n voorbeeld van 'n ontwikkelende land wat die voorskrifte van die KBD in nasionale wetgewing opgeneem het. Die Nasionale Omgewingsbestuur: Wet op Biodiversiteit (WOB) wat die riglyne en beginsels van bioprospektering sowel as die verdeling van voordele, soos vervat in die KBD en die Cartagena Protokol, beliggaam is in Suid-Afrikaanse wetgewing vervat. Die bepalings en voorskrifte soos vervat in die WOB sal gebruik word as 'n praktiese voorbeeld vir die toepassing van die KBD in die plaaslike regsraamwerk van ontwikkelende lande.

LIST OF ABBREVIATIONS

ABS	Access and Benefit Sharing
BDA	Biodiversity Act
CBD	Convention on Biological Diversity
COP	Conference of Parties
DEAT	The Department of Environmental Affairs and Tourism
Ecology L.Q.	Ecology Law Quarterly
IPR	Intellectual Property Rights
JILP	Journal on International Law and Policy
JPTOS	Journal of the Patent and Trademark Office Society
MAT	Mutually Agreed Terms
MqJICEL	Macquarie Journal of International and Comparative Environmental Law
MTA	Material Transfer Agreements
NBSAP	National Biodiversity Strategy Action Plan
NEMA	National Environmental Management Act
PCT	Patent Cooperation Treaty
PLT	Patent Law Treaty
RDP	Reconstruction and Development Plan
RECIEL	Review of European Community & International Environmental Law
TFLR	Tilburg Foreign Law Review
TRIPS	Agreement on Trade Related Aspects of Intellectual Property Rights
WIPO	World Intellectual Property Organisation
UNEP	United Nations Environment Programme
Vand. J. Transnat`l Law	Vanderbilt Journal of Transnational Law
ZaöRV	Zeitschrift für ausländisches öffentliches Recht und Völkereght

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1 Introduction

At the United Nations Environment Programme (UNEP) Governing Council meeting of 1987 a proposal was advanced by the United States of America suggesting that UNEP should establish an umbrella convention that would rationalise arrangements under different conservation agreements.[1] At that time the general recognition was that environmental agreements were not consistent in geographic area and content.[2] As a result an ad hoc working group was established consisting of biological diversity experts whose task it was to harmonise existing conventions on biological diversity.[3]

Adding to this effort, an Ad Hoc Working Group of Experts was established in May 1989 to prepare an international legal instrument for the conservation and sustainable use of biological diversity. The Working Group took cost- and benefit sharing between developed and developing countries into account, as well as the ways and means to support innovation by local or indigenous people. The resulting agreement is now known as the Convention on Biological Diversity of 1992 (CBD) that reiterates the fact that international law on biological diversity has developed tremendously throughout the years along with scientific understanding.[4] The CBD now embodies an ecosystem approach to the conservation of the variety of life.[5]

The CBD entered into force on 29 December 1993. This convention significantly enhanced the scope and potential effectiveness of the international legal regime for the conservation of biological diversity world wide together with the sustainable use of its components.[6] It goes beyond the conservation of biological conservation *per se* and comprehends such diverse issues as sustainable use of biological resources, access to genetic

1 Keating 2005 *JPTOS* 528.
2 McConnell *The Biodiversity Convention: A Negotiating History* 5.
3 UNEP Governing Council Decision 14/26.
4 Tinker 1995 *Vand. J. Transnat'l Law* 778.
5 Tinker 1995 *Vand. J. Transnat'l Law* 778.
6 Birnie and Boyle *International Law and the Environment* 568.

resources, the sharing of benefits derived from the use of genetic material and technology, including biotechnology.[7]

The convention has three objectives, which are the conservation of biological diversity, secondly the sustainable use of its components and thirdly the fair and equitable sharing of benefits arising out of the utilisation of genetic resources.[8] The third objective includes the sharing of benefits by means of appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over such resources and technologies as well as appropriate funding.[9] As part of the process of achieving these goals, the Convention establishes a new international framework for access to genetic resources and the sharing of benefits from their use. At the same time Parties are required to take numerous steps for conservation and sustainable use of biological diversity. It further establishes an international structure within which Parties can cooperate on implementation and elaboration of the Convention's requirements.

The CBD is also an economic treaty in the sense that it develops and regulates the ongoing exchange of genetic resources and, in particular, the emerging trade in biotechnology.[10] During the negotiations of the CBD the concept of the trade in biotechnology dominated much of the discussions surrounding the convention. This was the cause of deep differences between the technologically rich north and the biodiversity rich south.[11] It was and still is apparent that developed countries, or corporate companies in these countries, exploit natural recourses only found in developing countries, without sharing the resulting proceeds. It is shown that uneven distribution of natural, technological and economic resources occur in relationships between the northern hemisphere and its southern counterpart.[12] It is a well-known fact

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7 Glowka, Burhenne-Guilmin and Synge *A Guide to the Convention on Biological Diversity* 1.
8 Article 1 of the CBD.
9 Article 1 of the CBD.
10 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 941.
11 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 942.
12 Scholtz 2005 *TFLR* 208. The terms northern/ north or southern/south, and developed/developing are used interchangeably. The term "north" refers to developed countries. The term "south" refers to developing countries.

that the northern hemisphere is financially and technologically superior to its southern counterpart.

Intellectual property rights (IPR), with specific reference to patent law, enable developed countries and/or companies in those countries to exploit this discrepancy. Developed countries accordingly acquire biological recourses and exploit them with resulting benefits thereby circumventing the sharing of such benefits through IPR systems. Benefits are thereby withheld from developing countries that provide such genetic recourses. Accordingly the main focus is how the CBD addresses benefit sharing in the light of the differences between the northern developed- and southern less developed countries.

South Africa will be studied as an example of a developing country that incorporated the provisions of the CBD in its national legislation as it promulgated the National Environmental Management: Biodiversity Act (BDA), which embodies the guidelines and principles for bioprospecting and benefit sharing, captured in the CBD and the Cartagena Protocol.[13] The provisions contained in the BDA will be used as an example of the application of the CBD in the municipal law of a developing country.

2 Background to Biological Diversity

2.1 Introduction

The definition of biological diversity have in recent years developed to a more comprehensive topic and has also grown to become an increasingly important subject for environmental law purposes.[14] Most conservation efforts was until recently aimed at the conservation of "wildlife" rather than biological conservation.[15] During the late 1970's some biologists became concerned

13 Act 10 of 1994.
14 Tinker 1995 *Vand. J. Transnat'l Law* 778.
15 International Conventions included the UN Convention on the Law of the Sea of 1982; the Ramsar Convention on Wetlands of International Importance of 1971;the Bonn

that the focus on wildlife was too narrow and that the concern over the fate of only mammals and birds missed a larger issue of a loss in the overall richness of life on the planet.[16] The concept of biological diversity was to these conservationists a better object or form of conservation because it covered all forms of life. The international community then began to recognise the full scale and seriousness of the threat posed to the natural environment by human activities, and the need to establish a clear, coherent and comprehensive legal framework within which to tackle that threat.[17]

In attempts to define biological diversity, it has been described as the variability of life in all its forms, levels, and combinations.[18] It is often wrongfully assumed that it can be described as the sum of all ecosystems, species and genetic materials. The CBD describes biological diversity as representing the variability within and among the sum of all ecosystems, species and genetic materials and is, therefore, an attribute to life, in contrast with "biological resources", which are tangible biotic components of ecosystems.[19]

Sands describes genetic diversity as the variation of genes within a species, species diversity as the variety of species within a region, and ecosystem

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Convention on the Conservation of Migratory Species of Wild Animals of 1979;the Convention on International Trade in Endangered Species of 1973.

16 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 911-912. The use and protection of wildlife has historically been considered a matter of domestic law, reflecting every state's claim to permanent sovereignty over its natural resources, including living natural resources. Despite the different state's paramount interests, wildlife has also long been a subject of international cooperation. International cooperation has long proven necessary to respond to international economic activities-most notably the growing international trade in wildlife and plants. For some environmentalists, international controls limiting state sovereignty over wildlife and biodiversity are justified on spiritual, ethical or moral grounds. In arguments analogous to that of human rights, animal rights activists argue that humans are responsible for protecting certain minimum rights of animals and nature. Animal rights activists argue that all life should be treated with respect and animals should not be exploited, except perhaps for the most basic human rights.

17 Bowman *The Nature Development and Philosophical Foundations of the Biodiversity Concept in International Law* 5-31.

18 Birnie and Boyle *International Law and the Environment* 549. It is also referred to as "an umbrella term for the degree of natures variety". See further Bowman *The Nature Development and Philosophical Foundations of the Biodiversity Concept in International Law* 5-31.

19 Section 2 of the CBD.

diversity as being the variety of ecosystems within a region.[20] The preamble of the CBD states that the contracting parties are conscious of the importance of biological diversity for evolution and for maintaining life-sustaining systems in the biosphere. This implies that for the purposes of evolution, on the one hand, a wide pool of diversity is valuable because evolutionary options are thereby kept open. It is further recognised that living organisms are of great importance in order to maintain ecosystem structure and function.[21] Sands gives three reasons for the conservation and preservation of nature and biodiversity. He firstly confirms that biodiversity provides an actual and potential source of biological resources. Secondly, it contributes to the maintenance of the biosphere in a condition, which supports human and other life, and thirdly purports the view that biodiversity is worth maintaining for non-scientific reasons of ethical and aesthetic value.[22] The concept of biological diversity allows us to recognise and value the great diversity and variability of life.[23]

It is quite clear from the above discussion that two main aspects come to the forefront when conservation and preservation of nature and biological diversity is discussed. The first being that value can be attached to biodiversity and secondly that biodiversity provides an actual and potential source of biological resources holding that such resources can be used or traded with and needs to be conserved. This discussion is of particular importance in order to understand the issues of biodiversity and is necessary to create the required context to investigate the implementation of benefit sharing in accordance with the CBD specifically in South Africa as an example of a developing country.

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20 Sands *Principles of International Environmental Law* 499. See also Glazewski *Environmental Law in South Africa* 258.

21 Glowka, Burhenne-Guilmin and Synge A *Guide to the Convention on Biological Diversity* 9.

22 Glazewski *Environmental Law in South Africa* 258.

23 Up until now the rate of species and habitat loss has not been precisely quantified but estimation show that should the current rate of loss continue, up to 15% of the earth's species would be destroyed in the next 25 years, the number increasing drastically per annum. See World Conservation Monitoring Centre, *Global Biodiversity: Earth's Living Resources in the 21st Century* (2000), 91-95 and 117-125.

2.2 The value of biological diversity

It is clear that the CBD is not merely aimed at the protection and preservation of biodiversity but that the use of biological resources is of particular importance.[24] Value is explicitly placed on goods that are gathered within ecosystems such as timber and fish, yet the services that underpin these goods, almost without exception, have no market value.[25] This is not because they are worthless, but rather, because there is no market to capture and express their value directly.[26] Perhaps the most fundamental challenge facing ecosystem protection is that of valuation. In other words, how does one translate the value of an ecosystem into common units for assessment of development alternatives?[27] The relevant question is not whether we should protect the environment, but rather how much and at what cost?[28] The answer is that ecosystem services can be valued by implicitly assessing the values every time we choose to protect or degrade the environment.[29] Through this method, Salzman argues that a monetary value can be placed on ecosystem services to assist in the attempt to determine the value for example, of a piece of land or bio-region.[30]

The greatest value that an increased understanding of ecosystem services offer to environmental policy may be its persuasive argument that biodiversity and habitat protection provide important benefits in ways not normally considered.[31] The concept of ecosystem services is made more effective by calling for explicit recognition of such services because of the direct tangible benefits they provide. If given proper recognition, a more integrated and

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24 Scholtz 2005 *MqJICEL* 15.

25 Salzman 1997 *Ecology L.Q.* 888. See also Bowman *The Nature Development and Philosophical Foundations of the Biodiversity Concept in International Law* 5-31 and Scholtz 2005 *MqJICEL* 16.

26 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 916.

27 For example, how would the flood control and water purification services of a particular forest be diminished by the clear cutting or selective logging of 10%, 20% or 30% of its area? At what point does the ecosystem's net value to humans diminish, and by how much? Can the degradation of these services be accurately measured? And if so, how can the partial loss of these services be balanced against benefits provided by development or pollution? See Salzman 1997 *Ecology L.Q.* 888.

28 Salzman 1997 *Ecology L.Q.* 888.

29 Salzman 1997 *Ecology L.Q.* 888.

30 Salzman 1997 *Ecology L.Q.* 890.

31 Salzman 1997 *Ecology L.Q.* 902.

compelling basis for action can be provided, which is far better than current suggestions to focus on single species or biodiversity protection for the simple reason that the impact of these services on humans are more immediate and undeniably important.[32] Indeed a focus on ecosystem services has the potential to unify disparate parts of the environmental law. The study of ecosystem services is a new and very promising area of interdisciplinary research with the potential to create a significant shift to how we address environmental protection.[33]

The value of biodiversity can further be seen in the respective fields of agriculture and food security, drugs and medicines and of course the fact that to some, speaking of the economic value of wildlife misses the most important reasons for protecting them, namely for their intrinsic and existence values.[34] The preamble of the CBD for the first time made mention of the intrinsic value of biodiversity in an international binding instrument such as this. This innovation acknowledges the inherent right of all components of biodiversity to exist independent from their value to humankind.[35] Wildlife activists argue that wildlife has an intrinsic value independent of its economic value for humanity.

The notion of intrinsic value is surrounded with a number of problems. One problem would be that intrinsic value implies that a beneficiary as an entity have value of themselves, for themselves independent of any external influences.[36] The question then arises whether something can have value if it is not to be assessed by an external observer, which in this case can only be a human being?[37] What would it then mean to say that biodiversity has an intrinsic value? What would the content of such intrinsic value be? An

32 Salzman 1997 *Ecology L.Q.* 902.
33 Salzman 1997 *Ecology L.Q.* 902.
34 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 917. See further Bowman *The Nature Development and Philosophical Foundations of the Biodiversity Concept in International Law* 5-31.
35 Glowka, Burhenne-Guilmin and Synge A *Guide to the Convention on Biological Diversity* 9.
36 Scholtz 2005 *MqJICEL* 17.
37 Scholtz 2005 *MqJICEL* 17. Scholtz uses the example of monetary value to help illustrate the problem. A fifty-euro bill has no intrinsic value in and of itself. An external beneficiary has determined and assigned its value in accordance with the current monetary system.

external beneficiary would in any event have to be called upon to state that such a thing has an intrinsic value. In making this statement the assessor already judges the object and validates it according to its value.[38] Scholtz proposes the use of "functional value" in relation to biological diversity as it better explains the value of biological diversity that entails, amongst others, life support of living and non-living entities, the biological value of biodiversity[39], and the value of utility.[40] Regardless whether one rejects the aforementioned concept, few would dispute that the existence of biodiversity adds to the richness of our own life on the planet.[41] These existence values may be impossible to quantify precisely but they should not be ignored in efforts to protect wildlife and biodiversity.[42]

It is therefore of great importance to place a monetary value on biodiversity to enable persons, entities or communities to benefit financially from bioprospecting activities. This should be done as accurately as possible, keeping the different components of indigenous communities in mind and may be difficult due to the fact that these components do not have intrinsic value.[43] These components should therefore be linked to a monetary system so that these communities can share in the proceeds companies make when they exploit their genetic resources.

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38 Scholtz 2005 *MqJICEL* 17.

39 This refers to evolutional, ecological and genetic value. The preamble of the CBD recognises the importance of biological diversity for evolution and for maintaining life sustaining systems in the biosphere. Glowka, Burhenne-Guilmin, and Synge A *Guide to the Convention on Biological Convention* 9.

40 Scholtz 2005 *MqJICEL* 17. The value of utility refers to economic, scientific, educative, recreational, aesthetic, cultural and social value as stated within the CBD.

41 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 917.

42 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 917.

43 These components include, but is not limited to, the role in conserving a particular area within which bioprospecting is done, the knowledge indigenous peoples have in relation to the special attributes, like medicinal qualities, of the wildlife or plants being prospected.

3 The Obligations in the CBD: Biodiversity and Benefit Sharing in terms of the CBD

3.1 Introduction

Throughout the negotiations of the CBD, the developing states envisaged the CBD as part of their agenda to restructure world economic relations in order to gain access to resources, technology and markets to enable sustainable development to meet the needs of their populations.[44] They wanted to affirm that biodiversity was a resource that fell within their national sovereignty to regulate and manage. They specifically wanted to retain the right to control the access of northern industries to prospect for biodiversity in their countries.[45] In return for allowing such industries to prospect, the south demanded more benefits from the biotechnology subsequently developed. They viewed IPR as a major obstacle to benefit sharing and biodiversity conservation because they protect the patents of biotechnology firms.[46] Monopoly rights and profits granted to patent holders under most IPR systems made it very difficult to transfer biotechnology to less developed countries. It was thought particularly unfair that IPR provided strong protection to biotechnology inventions while declining any similar property rights protection for the genetic resources found in the south or the traditional knowledge that assisted such northern industries to develop their biotechnology inventions.[47] Many of the industries that use genetic and biochemical resources produce high-value commodities and enjoy large gross earnings from commercially exploiting such a product. Two drugs that were derived from the Rosy Periwinkle referred to as vincristine and vinblastine, alone earns $100 million annually for Eli Lilly.

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44 Birnie and Boyle *International Law and the Environment* 569.
45 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 944.
46 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 944.
47 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 944. Article 2 of the CBD defines the term "biotechnology" as any technological application that uses biological systems, living organisms, or derivatives that make or modify products or processes for specific use.

Developed states pursued economic objectives but from a different perspective. They contested the CBD draft proposals concerning transfer of technology, financing, biotechnology and access to resources and refused to sign it on the basis that it threatens to hamper biotechnology and undermines the protection of ideas.[48] They wanted to ensure open and free access to biodiversity so that the pharmaceutical and agricultural industries could enlarge their efforts to identify potentially valuable plants and animals.[49] They also wanted to ensure that technology transfer requirements would honour the IPR of northern industry- rights that was established to reward industries that invest in research and product development.[50] To these developed states IPR encouraged innovation and was an important incentive to that effect. By increasing the profits available from the marketing of biotechnology that was obtained from genetic resources, they argued that IPR actually encourages further conservation of biotechnology.[51] To the extent that environmentalists actually engaged in the biotechnology trade debate, they were of the view that biotechnology can become potentially profitable trade and that the sustainable use thereof might provide local incentives for conservation.

3.2 The Provisions of the CBD

I have already made mention of the three objectives contained in Article 1 of the CBD. In terms of the third objective, which relates to benefit sharing, one can derive three means through which these sharing of benefits could occur. They are appropriate access to genetic resources, appropriate transfer of relevant technologies and appropriate funding. Articles 15, 16, 19, 20 and 21 of the CBD, address these means of obtaining the sharing of benefits.

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48 Birnie and Boyle *International Law and the Environment* 569. See also Sands *Principles of International Environmental Law* 516.

49 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 944. The North invests resources in environmental protection to ensure stricter environmental standards. See also Scholtz 2005 *TFLR* 208.

50 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 944-945. See also Scholtz 2005 *TFLR* 208.

51 See Birnie and Boyle *International Law and the Environment* 569.

The central provision regarding access to genetic resources is Article 15 of the CBD.[52] Article 15(1) provides for a regulated access regime for importing states, usually developed countries, to the natural resources of exporting states, usually developing countries, while respecting the sovereign rights of exporting states to receive an equitable share of benefits resulting from the exploitation of their resources.[53] It affirms that each party has the authority to control access to its genetic resources and that such access is "subject to national legislation." The right to control access is not, however, absolute. Instead, Article 15(2) obligates parties to:

> endeavour to create conditions to facilitate access to genetic resources for environmentally sound uses by other contracting parties and not to impose restrictions that run counter to the objectives of this Convention.

The Convention also establishes several other key principles. Access will have to be on mutually agreed terms and it will be subject to prior informed consent of the contracting party providing such resources, unless otherwise determined by that party. Furthermore it will be encouraged only if the party seeking access will put the genetic resources to "environmentally sound uses".[54] In return for having obtained access to genetic resources, benefits arising from the utilisation from such resources have to be shared equally. The CBD asks for participation in research work and the moving of such activities to the country of origin.[55] It further asks for the transfer of technology[56] and the participation in the results and benefits of genetic resources.[57]

The main provisions relating to benefit sharing is captured in articles 15(7) and 19(2) of the CBD. Each party is required to take measures:

> with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilisation of

52 Von Hahn 2003 *ZaöRV* 296. See also Glowka *A Guide to Designing Legal Frameworks to Determine Access to Genetic Resources* 3.
53 Glazewski *Environmental Law in South Africa* 262. See also Von Hahn 2003 *ZaöRV* 296.
54 Article 15(2), 15(4) and 15(5) of the CBD.
55 Article 15(6) of the CBD.
56 Article 16 of the CBD.
57 Von Hahn 2003 *ZaöRV* 297.

> genetic resources with the contracting party providing such resources ... on mutually agreed terms.[58]

Article 15 is interesting as it raises important policy and practical considerations for developed and developing country parties with regard to their responsibilities to support the provisions of the CBD that pertains to access and benefit sharing.[59] It places high priority on cooperation between both the user of genetic resources as well as the provider thereof.[60]

Similarly, Article 19(2) requires parties to:

> take all practicable 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 on mutually agreed terms.

Other provisions that are also linked to benefit sharing include Article 17 (exchange of information)[61], Article 18 (technical and scientific cooperation)[62], and Article 20 and 21 (financial resources and financial mechanism).[63] In terms of Article 20 of the CBD contracting parties undertake to provide, within their capabilities, financial support and incentives for national activities, which are intended to achieve the objectives of the CBD.[64] The CBD also provides for financial assistance from developed parties to developing countries to enable them to meet the incremental costs of implementing measures to fulfil their obligations in terms of the CBD. This financial assistance will be done in accordance with the financial mechanism in Article 21 of the CBD.[65] The

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58 Article 15(7) of the CBD.
59 Glowka *A Guide to Designing Legal Frameworks to Determine Access to Genetic Resources* 10.
60 Glowka *A Guide to Designing Legal Frameworks to Determine Access to Genetic Resources* 10.
61 Article 17 of the CBD. Article 17(1) states that contracting parties shall exchange information from all publicly available resources relevant to the conservation and sustainable use of biological diversity. It also states that the special needs of developing countries should be taken into account when such exchanges are made.
62 Article 18 of the CBD.
63 Article 20 and Article 21 of the CBD.
64 Article 20(1) of the CBD.
65 Article 20(2) of the CBD.

Conference of Parties (COP)[66] is the responsible body and will be have authority over the financial mechanisms created in terms of the CBD.[67] The COP will determine the policy, strategy, programme priorities and eligibility criteria relating to the access to and the utilisation of such resources.[68] Article 20(4) clearly reiterates the importance of support from developed countries as this is the only way developing countries will be able to effectively implement their commitments under the CBD.

The regime on access and benefit sharing lays down basic obligations for the party that provide the resources as well as the party or its nationals who want to use genetic resources. These provisions do not specify details of obligations. It simply creates a framework that has to be further implemented.[69]

3.3 Traditional Knowledge and Benefit Sharing in terms of the CBD

3.3.1 Introduction

Broad recognition is given to the fact that traditional knowledge can contribute to the conservation of the environment and biodiversity.[70] Traditional knowledge has proven to be a potentially valuable source of information regarding the medicinal and agricultural uses of plans.[71] This knowledge can assist pharmaceutical and other companies with bioprospecting activities by focusing their efforts when looking for potentially valuable substances.[72] Companies act on leads given by indigenous peoples, extract the active

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66 The Conference of Parties is the governing body of the CBD and was established under Article 22 of the CBD. Its key function is to keep the Convention's implementation under review. See Sands *Principles of International Environmental Law* 588.

67 Article 21(1) of the CBD.

68 Article 21(1) of the CBD.

69 Von Hahn 2003 *ZaöRV* 297. See for discussion Glowka *A Guide to Designing Legal Frameworks to Determine Access to Genetic Resources* 3.

70 Correa C Traditional Knowledge and Intellectual Property (Quarter United Nations Office Geneva 2001) (Report of the UK Department for International Development). See also Sands *Principles of International Environmental Law* 1052.

71 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 964.

72 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 964. See also Glowka *A Guide to Designing Legal Frameworks to Determine Access to Genetic Resources* 12

ingredients from the plants or animals and patent the extract or generic form thereof. Such companies then make substantial profits and in addition thereto IPR laws protect their product.[73] Traditional knowledge has in the past been treated as common heritage that is open and available to all members in the community and has never enjoyed any protection under IPR regimes.[74] Further benefits which flow from the protection of traditional knowledge includes the custodians of traditional knowledge receiving fair compensation if such knowledge leads to commercial gain, that the profile of the knowledge and the people entrusted with it may be uplifted, that appropriation and piracy of biological resources may be prevented and finally that development may be promoted. [75]

3.3.2 Provisions of the CBD related to Traditional Knowledge

The preamble of the CBD gives specific recognition to the close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources.[76] Recognition is further given to the desirability of such peoples sharing equitably from any benefits that may arise from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components.[77]

The CBD further enhances this aspect through Article 8(j) which also refers to benefit sharing in another context and contains provisions to encourage the equitable sharing of the benefits arising from the utilisation of knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for conservation and sustainable use of biological

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73 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 964-965.
74 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 965.
75 Glowka, Burhenne-Guilmin and Synge A *Guide to the Convention on Biological Convention* 11.
76 The Preamble as well as Article 8(j) of the CBD.
77 Glowka, Burhenne-Guilmin and Synge A *Guide to the Convention on Biological Convention* 11.

diversity.[78] Article 8 (j) of the CBD states that every contracting party shall, as far as possible and as appropriate

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

This article reflects both the need for conserving traditional knowledge as well as its potential use subject to the consent of the community and in return for benefit sharing.[79] The way in which this provision becomes operative will lie within the discretion of the parties implementing it, as Article 8(j) only has to be implemented "as far as possible and as appropriate". This article is further subject to national legislation and the vague language used therein does not create strict obligations for contracting parties and can be viewed as mere programmatic in character.[80]

Article 10(c) of the CBD requires parties to protect and encourage traditional cultural practices involving customary use of biological resources. This usage is however subject to it being compatible with conservation and sustainable

78 Two types of agreements address the issue of implementing the access and benefit-sharing regime of the CBD as well as Article 8(j). They are referred to as Material Transfer Agreements (MTAs) and Modal Contracts (MCs) for regulating access to genetic resources. MTAs are special types of contracts used by the biotechnology industry and academic researchers in northern countries to facilitate the sharing of biological research material for mutual gain. MTAs define the rights and obligations between the parties, including third parties, involved in the transfer of biological material. These contracts are relatively concise and flexible enabling it to be used in different research and development scenarios. MTAs are designed to be general in scope, which consequently enables them to be applicable to diverse collaborations involving source country organisations in roles ranging from passive facilitators, thus merely obtaining research permits for foreign organisations, to active participants who collects and prepares extracts of genetic resources. MCs are *pro forma* contracts, which offer a simple and expedient solution for implementing Article 15 of the CBD. MCs can enable governments and local communities to negotiate MTAs prior to approval of permits, as these are required in some countries, thereby giving such governments and local communities the opportunity to define rights to genetic resources when permits are applied for. See Putterman *JILP* 151-152.

79 Von Hahn 2003 *ZaöRV* 298.

80 Von Hahn 2003 *ZaöRV* 298.

use requirements.[81] This provision is corollary to Article 8(j) and it requires parties to consider customary use as they develop their future policies and legislation on access to genetic resources.[82]

3.3.3 IPR and Traditional Knowledge

The international community has only more recently begun to take into consideration the need, if any, to take steps to protect traditional or indigenous knowledge and if the existing system of intellectual property or new forms of protection will be required.[83] In general, IPR can be described to be inadequate when it comes to defending the rights and resources of local indigenous communities.[84] The interests of indigenous peoples are mostly, only in part economic in nature with linkages to self-determination. There exist some cultural incompatibilities in that traditional knowledge is shared in a general context, and even when it is not, the holders of that restricted knowledge most likely still do not have the right to commercially exploit such knowledge for personal gain.[85]

In addition to this, the lack of economic self-sufficiency of indigenous peoples and the unequal power relations between themselves and the corporate world would make it difficult for such communities to defend their IPR.[86] An attempt to prevent international companies from infringement of their IPR, for example, by applying for patents based on knowledge derived from, but not identical to, that of the community, presents serious difficulties because of the potentially high cost of litigation, let alone, expertise.[87]

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81 Article 10(c) of the CBD states that each Contracting Party shall, as far as possible and as appropriate "protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements".

82 Glowka *A Guide to Designing Legal Frameworks to Determine Access to Genetic Resources* 16. Glowka uses the example of measures that are taken to control access to genetic resources to ensure benefit sharing should not impede customary use and exchange of genetic resources.

83 Sands *Principles of International Environmental Law* 1052.

84 Posey and Dutfield *Beyond Intellectual Property* 103-104.

85 Posey and Dutfield *Beyond Intellectual Property* 103-104.

86 Posey and Dutfield *Beyond Intellectual Property* 103-104.

87 Posey and Dutfield *Beyond Intellectual Property* 103-104.

In 1996 a Conference of the Parties to the CBD was held which called for case studies on the impact of IPR on the objectives of the CBD as well as relationships between such rights and the knowledge, practices and innovations of indigenous and local communities embodying traditional lifestyles that is relevant to the conservation and sustainable use of biological diversity.[88]

4 Access to Genetic Resources and Equitable Benefit Sharing in relation to IPR

4.1 Introduction

With the adoption of the CBD, ABS was given international recognition.[89] The conditions contained in the CBD gave recognition to each country's sovereignty over its own resources and the resulting authority to regulate and control access.[90] In addition, each country may choose to allow controlled access to genetic resources under Mutually Agreed Terms (MATs).[91] ABS is vastly different than the former approach to property rights over genetic resources, which was free availability of such resources.[92] After more than a decade of work, the CBD produced the Bonn Guidelines on Access to Genetic Resources and Fair and Equitable sharing of Benefits (Bonn Guidelines) arising out of their utilisation. These guidelines are intended to assist CBD parties with the development and drafting of legislative, administrative and policy measures on ABS.[93] The Bonn Guidelines have a comprehensive section on benefit sharing which includes benefits derived from all genetic

88 Decision III/17 (1996), Preamble. See also Doha WTO Ministerial Declaration, paragraph 19 (2001) and the Conference of the Parties Decision VI/10 (2002).
89 Keating 2005 *JPTOS* 527.
90 Glowka, Burhenne-Guilmin and Synge A *Guide to the Convention on Biological Convention* 11. See Article 15(1) of the CBD.
91 Keating 2005 *JPTOS* 527. Article 15(4) and 15(7) of the CBD uses the terminology for access to be granted on "mutually agreed terms". This holds that users and providers of genetic resources must agree on certain terms, which is listed in paragraph 44 of the Bonn Guidelines, for sharing the utilisation and commercial use of genetic resources. These terms are embodied in and executed through MTA's.
92 Keating 2005 *JPTOS* 527.
93 Keating 2005 *JPTOS* 527.

resources as well as those associated with traditional knowledge, innovations and practices covered by the CBD.[94]

The Bonn Guidelines therefore covers a broad spectrum and also distinguishes between types of benefits, monetary and non-monetary.[95] The Guidelines provide a flexible approach whereby parties can structure their arrangement and agree on terms suited to their particular circumstances. Such arrangements will then be recognised as legal MTAs[96] or some form of contractual arrangement that stipulated MATs.[97] There is however dissatisfaction with the guidelines as such and the CBD is now in the process of elaborating and negotiating an international regime on ABS by way of the Ad Hoc, Open Ended Working Group on ABS. In doing so, more focus is put on ABS through a new disclosure requirement in the patent system.[98]

4.2 ABS through a new Disclosure Requirement

Proponents of the current proposals for ABS through a new disclosure requirement in the patent system are investigating in order to find a new mechanism for tracking and transferring benefits derived from genetic resources.[99] This right to know[100] requests that users and intermediaries who acquire genetic resources obtain consent from the original owners.[101] In other words, patent applicants should disclose, in their applications the source of any genetic resources that are used to make claimed invention. They would further have to provide evidence of prior informed consent as well as evidence that the genetic resources were obtained according to MAT's.[102] The CBD transferred the concept of ABS through a new disclosure requirement, to

94 Paragraph 9 of the Bonn Guidelines.
95 Chambers 2003 *RECIEL* 312.
96 Material Transfer Agreements can be viewed as the engine of the Bonn Guidelines. The terms between users and providers are legally captured in these agreements. These agreements will govern the transfer of intangible materials between the parties and they will set up terms for the use of the materials and the rights of users and providers.
97 Chambers 2003 *RECIEL* 312.
98 Keating 2005 *JPTOS* 527.
99 Keating 2005 *JPTOS* 543.
100 Section C of the Bonn Guidelines.
101 Chambers 2003 *RECIEL* 313.
102 Article 15 of the CBD. See also Keating 2005 *JPTOS* 526.

other forums, requiring them to disclose the source of origin and legal provenance of the genetic material when applying for a patent to be registered.[103] Should an applicant fail to disclose the source of its genetic resources or make a mistake in his disclosure, sanctions may include a rejection of a patent application or the invalidation of any resulting patent.[104]

Industrialised countries currently have disclosure requirements in their patent systems that are consistent with the requirements of international agreements such as TRIPS[105], the Patent Cooperation Treaty[106] (PCT) and the Patent Law Treaty[107] (PLT). Keating states that the ABS system is based on a *quid pro quo* principal whereby a country provides access to genetic resources to an entity in exchange for a share in any benefits that may arise from their exploitation. Such benefits can be tacked and transferred effectively through the law of contract.[108] He further states that the majority of World Trade Organisation members are currently seeking to facilitate ABS through a new disclosure requirement without taking its harmful potential into consideration.[109] The United States submitted a document containing certain problems that can be identified with this proposed new disclosure requirement.[110] They amongst other reasons, contend that there is currently no evidence that the disclosure requirement will support ABS and that the

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103 Keating 2005 *JPTOS* 528.

104 Keating 2005 *JPTOS* 526.

105 *Agreement on Trade-Related Aspects of Intellectual Property Rights*, 15 April *Marrakesh Agreement establishing the World Trade Organisation*, Annex 1C, Instruments-Results of the Uruguay Round (1994).

106 The Patent Cooperation Treaty is one of the most beneficial treaties that currently exist with respect to the international protection of patents. It makes it possible to seek patent protection for an invention simultaneously in each of a large number of countries by filing an "international" patent application. It also regulates in detail the formal requirements with which any international application must comply. See O'Connell 2005 Blackwell Encyclopedic Dictionary of International Management 1. See further http://www.wipo.int/treaties/en/registration/pct/summary_pct.html, 25 September 2006.

107 The Patent Law Treaty can be described as the political core of the patent agenda of the World Intellectual Property Organisation (WIPO). It deals with the substance of patents, with what can and cannot be patented, under what conditions and with what effect.

108 Keating 2005 *JPTOS* 543 and Glazewski *Environmental Law in South Africa* 263. South African examples of the contract approach include an agreement between the Chicago-based Ball Horticultural Company and the national Botanical Institute to develop South Africa's plant resources for ornamental purposes.

109 Keating 2005 *JPTOS* 525.

110 See the US Submission to the TRIPS Council, WTO document IP/C/W/434.

negative impact it might have on the patent system is ignored.[111] They further felt that it will in addition not be possible to track the benefits where an invention is not patented, or a patented invention is not commercialised. Nevertheless, it seems that the proposals for the new disclosure requirement is supported by the provisions in the CBD as well as by the members of the World Trade Organisation and the World Intellectual Property Organisation (WIPO).[112]

The Bonn Guidelines acknowledge the difficulties associated with obtaining access because of the "diversity of stakeholders and their diverging interests" as well as the difficulties in determining "their appropriate involvement" and makes it clear that a set system cannot work in all cases.[113] The Guidelines however views prior informed consent, as a key component of an overall strategy, as the best approach.[114]

4.3 Benefit Sharing Agreements

There has been some experimentation with the use of contracts between pharmaceutical companies from developed countries and local providers of biological resources.[115] These contracts initially provided for a fee to collect samples of potentially promising plants or animals so that the companies could do research thereon.

These small fees did not cover all expenses of the biodiversity rich communities.[116] Leaders of the developing countries wanted these costs to relate to that of similar international transactions and that such costs be included within the initial fees paid by bioprospecting companies.[117] Adding to this, these companies also warranted some method of benefit sharing to

111 Keating 2005 *JPTOS* 543.
112 Keating 2005 *JPTOS* 544.
113 Paragraph 17 of the Bonn Guidelines.
114 Chambers 2003 *RECIEL* 313.
115 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 951.
116 An example would be the maintenance of biological resources like National Parks where such resources originate.
117 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 951.

reward those with the traditional or indigenous knowledge.[118] Some advocates for traditional communities criticised the contract approach.[119] They felt first of all that only the community entering into such a contractual relationship truly benefits from that particular transaction. In doing so they exclude other communities that have the same knowledge.[120] They furthermore felt that such knowledge was historically viewed as common heritage freely passed between communities and that these contracts will not be widely used and only a relatively small amount of communities will be the real beneficiaries.[121]

Brush states that contracts between producers of biological resources and private users are a way to avoid monopoly-related problems associated with IPR.[122] According to him IPR and contracts differ in that contracts do not establish or imply a monopoly over an invention. Contracts are in theory a far easier means to create a market for biological resources due to lower transaction costs related to IPR.[123] Different forms of contract, for instance licensing agreements, can be used to regulate the relationship between users and producers of genetic resources. He contends that success in using the contractual approach will depend on the ability of indigenous peoples to control and limit the collection and shipment of genetic resources.[124] The success of such groups or nations will further depend on their ability to attract users who are willing to pay collection fees.

The lapse of time between the collection of biological resources and the use or commercialisation thereof is well known. Due to this lapse of time, profit sharing for funding immediate conservation programs might be limited. Up front fees can however address this problem to a large extent by providing the necessary financial ability to establish immediate conservation programs or

118 For a practical example see Hunter, Salzman and Zaelke *International Environmental Law and Policy* 951.
119 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 952.
120 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 952.
121 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 952.
122 Brush *Whose Knowledge, Whose Genes, Whose Rights?* 16-17.
123 Brush *Whose Knowledge, Whose Genes, Whose Rights?* 16-17.
124 Brush *Whose Knowledge, Whose Genes, Whose Rights?* 16-17.

enable already existing programs to continue.[125] Obviously the effective implementation thereof will need the cooperation of governments willing to assist local communities and willing to enforce limits on the collection of biological resources. Therefore because every state has sovereignty over their own natural resources, they can, along wit indigenous communities, decide whether or not to enter into a contractual relationship with parties seeking access to such resources.[126]

5 National Implementation of and Compliance with the CBD

The CBD's provisions regarding national implementation and compliance are relatively straightforward. The substantive provisions of the CBD are mostly conditioned with language that gives leeway when it comes to the application thereof. However, this vague depiction contained in the CBD is what has allowed so many countries to adopt the Convention so quickly.[127] Article 4 of the CBD determines that each contracting party has jurisdiction over components of biological diversity situated within the limits of its borders. It further states that the CBD shall apply also in the case of processes and bioprospecting activities, irrespective of where their effects occur, carried out under the jurisdiction of such a contracting party or even beyond the limits of its national jurisdiction.[128] Parties are obligated to cooperate with other contracting parties when it comes to areas beyond national jurisdictions and on other areas of mutual interest related to the conservation and sustainable use of biological diversity.[129]

The creation of a national strategy for the conservation of biodiversity and to integrate such strategies into economic planning can to that extent be viewed as the most practical aspect contained in the Convention. This is captured in Article 6 of the CBD and is intended to encourage countries to gather accurate and comprehensive information about opportunities for, and threats

125 Brush *Whose Knowledge, Whose Genes, Whose Rights?* 16-17.
126 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 952.
127 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 937
128 Article 4 of the CBD.
129 Article 5 of the CBD.

to, biological conservation.[130] The core of the CBD framework for genetic resources is found in Article 15, supplemented by the provisions of articles 16 and 19 as discussed earlier herein. In addition, activities subject to the genetic resources provisions must be consistent with other CBD provisions that are applicable, such as Articles 10(b)[131] and 8(j)[132].

The CBD recognises that access to genetic resources can lead to significant benefits as discussed earlier herein.[133] It furthermore states that a party receiving genetic resources from another contracting party should endeavour to develop and carry out scientific research based on genetic resources that is provided by other contracting parties with the full participation of, and where possible, within such contracting states.[134] Each party will be required to take legislative, administrative or policy measures with the aim that countries, in particular developing countries that provide genetic resources, are given access to and transfer of technology which makes use of those resources, on mutually agreed terms, through the provisions of Articles 20 and 21 and in accordance with international law. This includes, where necessary, technology protected by patents and other intellectual property rights.[135]

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130 Hunter, Salzman and Zaelke *International Environmental Law and Policy* 937. Article 6 states that each Contracting Party shall, in accordance with its particular conditions and capabilities "(a) develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, *inter alia*, the measure set out in this Convention relevant to the Contracting Party concerned; and (b) integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross sectoral plans, programs and policies."

131 Article 10(b) states that each contracting party shall, as far as possible and as appropriate "adopt measures relating to the use of biological resources to avoid or minimise adverse impacts on biological diversity".

132 Article 8(j) states that every contracting party shall, as far as possible and as appropriate "subject to its national legislation, respect, preserve, and maintain knowledge, innovations and practices of indigenous local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge and practices and encourage the equitable sharing of the benefits arising from the utilisation of such knowledge, innovations and practices".

133 Conference of the Parties to the Convention on Biological Diversity, Second Meeting, Jakarta (1995) 9. See also article 15(7) and article 19(2) of the CBD.

134 Article 15(6) and 19(1) of the CBD. See Glazewski *Environmental Law in South Africa* 263.

135 Article 16(3) of the CBD.

Many activities relating to equitable benefit sharing will also be subject to the CBD's obligations concerning conservation and sustainable use. An example would be where the collection of samples of genetic resources in their natural habitats or in the surroundings where they developed their distinctive properties, has major impacts on biological diversity. This would especially be in cases of large-scale commercial harvesting of a species that contains useful genetic resources. Contracting parties will have to manage such activities consistently with Article 10(b), which requires parties to take appropriate measures to avoid or minimise harm to biological diversity from the use of biological resources.[136]

It is clear from the above that parties to the CBD are obliged to promulgate appropriate legislation that will enable such parties to enact the guidelines and provisions contained in the CBD in their respective countries. The discussion extends to South Africa as an example of a developing country, and legislation currently in place that enables and ensures the application and enforcement of the provisions contained in the CBD.

6 Transfer of Technology

Provision for technology transfer was made in the CBD by giving recognition to the fact that technology also include biotechnology and that both access to and transfer of technology among contracting parties are essential elements to attain the objectives of the CBD, which relates to conservation and the equitable sharing in benefits which is derived therefrom.[137] Article 16(1) further

> undertakes subject to the provisions of this Article to make it clear 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 significant damage to the environment.

136 Conference of the Parties to the Convention on Biological Diversity, Second Meeting, Jakarta (1995) 8-9.
137 Article 16(1) of the CBD.

The CBD also states "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".[138] Recognition is further given to the needs of developing countries and that new and additional financial resources and appropriate access to relevant technologies will be required in developing countries to facilitate conservation and equitable sharing of benefits derived therefrom.[139] Technology can assist developing countries in focusing conservation efforts to promote protection of biological resources. It can further also greatly contribute to the upliftment of traditional communities and enable such communities to value and develop their resources and skills for their benefit.

The CBD was the first international treaty to tackle this issue. Its provisions reflect concern about the possible threat to IPR posed by technology transfer obligations, also keeping in mind the need to ensure the equitable allocation of "ownership" rights in biological materials.[140] The CBD recognises the need to protect IPR.[141] Article 16(5) of the CBD however also recognises that IPR may have an influence on the application of the CBD and calls on parties to co-operate on IPR subject to national and international law. This is done to ensure that such rights are supportive and does not run counter to the objectives of the CBD. Adding on to this, article 22 of the CBD suggests that IPR and obligations deriving from an existing international agreement might actually be overridden:

> where the exercise of those rights and obligations would cause a serious damage or threat to biological diversity.[142]

Should the language of the latter provision be interpreted to provide for the supremacy of the CBD, the possibility exists that it might conflict with the international treaties that protect IPR.[143] The preamble of the CBD however clearly stresses the importance and need for cooperation among States and

138 Preamble of the CBD.
139 Preamble of the CBD.
140 Sands *Principles of International Environmental Law* 1045.
141 Article 16 (2) of the CBD.
142 Article 22 of the CBD.
143 Sands *Principles of International Environmental Law* 1045.

intergovernmental organisations and the non-governmental sector for the conservation of biological diversity. Thus not giving the CBD a superior position against IPR legislation or treaties, but rather enhancing and complementing existing international arrangements for the conservation of biological diversity and sustainable use of its components.

The important role that the transfer of technology plays in the promotion of sustainable development as well as the protection of the environment should not be disregarded.[144] The extension of technical assistance, especially in relation to environmental technology must be promoted due to its ability to harmonise protection and developmental standards within the international arena.[145]

7 Municipal Law: The South African example

7.1 Background to Biological Diversity in South Africa

7.1.1 Economic Values of South African Biodiversity: Making biodiversity pay

South Africa's biological diversity is being lost at an ever increasingly rate through a number of activities.[146] The fact however remains that South Africa has been focusing on its Reconstruction and Development Plan (RDP) from 1994, which is to meet, at least, the basic needs of its people. Due to this focus no action was taken to prevent the loss of biological diversity and to increase the financial investments required to conserve biological diversity.[147] There was therefore a trend in South Africa, as in developing countries to "make biodiversity pay". This is where biodiversity prospecting is getting a great deal of attention through which economic benefits can be generated. The reward that flows from this is however only part of a much larger number

144 Scholtz 2005 *TFLR* 214.
145 Scholtz 2005 *TFLR* 209.
146 These activities include cultivation, urban development, deforestation, mining, building of dams, land degradation including soil loss of great proportions and overexploitation of natural resources. See Glazewski *Environmental Law in South Africa* 5.
147 Laird and Wynberg *A Discussion Paper Produced for the Land and Agriculture Policy Centre* 5. See also Glazewski *Environmental Law in South Africa* 5.

of economic activities aimed at biodiversity conservation.[148] Since the inception of a comprehensive legislative framework, the conservation of biodiversity and the sustainable use thereof has become an important aspect of conservationist and developmental efforts in South Africa.

7.1.2 The economic importance of biodiversity in South Africa

The fact that the vast array of biological resources found in his country plays an enormous role in the national economy of South Africa have been coming under the attention of decision makers and economists for some time now.[149] This can easily be derived from the focus on the development and alignment of national policy as well as aspects like eco-tourism, the direct use of species, including the gathering, harvesting or hunting of animals and plants for food, medicine and shelter to the direct use of ecosystems and specific habitats for grazing, croplands, mining and recreation.[150] Biodiversity also provides for the indirect use of values and benefits such as watershed protection and climate regulation. It further provides for non-use or non-consumptive values, which refers to aesthetic pleasure.[151] Therefore biodiversity does in fact to a large extent pay its way in South Africa though this is not necessarily given proper recognition. This causes the valuation thereof to be fraught with difficulties. It may be that the economic value of biodiversity is overlooked mostly in the extent to which its use provides a buffer against poverty and opportunities for self-employment within the informal sector.[152] Valuation of biodiversity is however, as stated in paragraph 2.2 of this paper, an onerous task.

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148 Laird and Wynberg *A Discussion Paper Produced for the Land and Agriculture Policy Centre* 5.

149 Laird and Wynberg *A Discussion Paper Produced for the Land and Agriculture Policy Centre* 5.

150 Laird and Wynberg *A Discussion Paper Produced for the Land and Agriculture Policy Centre* 5.

151 Laird and Wynberg *A Discussion Paper Produced for the Land and Agriculture Policy Centre* 5.

152 Laird and Wynberg *A Discussion Paper Produced for the Land and Agriculture Policy Centre* 5.

7.1.3 Bioprospecting, Access and Benefit-Sharing in South Africa

The CBD states that benefits generated through biodiversity prospecting should be "equitably shared". Laird and Wynberg argue that in this way biodiversity prospecting can best serve sustainable development and the conservation of biodiversity.[153] Benefit sharing is however more complex and raises a number of questions. Who should benefit and in what form should this benefit manifest?[154] In the following paragraphs attention will be given to these questions.

7.1.4 Who Should Benefit?

It is generally accepted that institutions that is directly involved in biodiversity prospecting should directly benefit from commercial product development. The precise ways through which such benefits will be determined should be spelled out in specific contractual arrangements.[155] If these institutions are universities or other national research institutions, such benefits will accrue to larger national interests, which they serve. In every scenario a portion of benefits must also address broader national interests, such as those spelled out in the RDP for South Africa. In order to achieve this, separate vehicles will be needed that may amongst others include Trust funds that will be able to administer such benefits received on behalf of identified beneficiaries.[156]

The fact that a portion of such benefits should serve larger national interests does not mean that attention should defer from the main objective, which is biodiversity conservation and the sustainable use of such resources. It simply implies that there are a number of stakeholders that should be kept in mind. Laird and Wynberg contend that the wide and effective disbursement of benefits, both over time and different sectors within society, will most likely

153 Laird and Wynberg *A Discussion Paper Produced for the Land and Agriculture Policy Centre 52.*
154 Laird and Wynberg *A Discussion Paper Produced for the Land and Agriculture Policy Centre 52.*
155 Laird and Wynberg *A Discussion Paper Produced for the Land and Agriculture Policy Centre 52.*
156 Laird and Wynberg *A Discussion Paper Produced for the Land and Agriculture Policy Centre 52.*

achieve the objectives of sustainable development and biodiversity conservation.[157] An example would include for instance a single research programme that will be able to benefit disadvantaged rural communities through the application of a potion of the benefits that arise therefrom towards larger national interests such as those spelled out in the RDP, university laboratories and the training of students. In the case of collaborating institutions benefits will be written into specific contractual relationships while benefits for larger interests will likely be determined on a case-by-case basis.[158] Matters to be resolved at this level include issues regarding private property, and thus land owners' claims to genetic or biochemical material collected on their land, as well as national and provincial jurisdiction over biochemical and genetic resources.[159]

7.1.5 Types of benefits to be derived from biodiversity prospecting

The following are a few of the many types of benefits that might be derived from biodiversity prospecting. Benefits may include fees for material and services, advance payments to cover an agreed-upon workplan for harvesting of resources or the conservation thereof. It may further take the form of the setting of a royalty rate and conditions for band or percentage due to involved local institutions and communities. The required involvement of local researchers and communities in the collection process can also be obtained.

Many of the benefits described above are referred to as "process benefits" which result from the research process connected to biodiversity prospecting

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157 Laird and Wynberg *A Discussion Paper Produced for the Land and Agriculture Policy Centre 53.*

158 Laird and Wynberg *A Discussion Paper Produced for the Land and Agriculture Policy Centre 53.*

159 Laird and Wynberg *A Discussion Paper Produced for the Land and Agriculture Policy Centre 53.* An example would be where the Eastern Cape attempted to claim coastal resources as a provincial resource in order to control and manage them for the benefit of residents of the province. The outcome thereof is not clear currently but the argument however remains that provinces are political entities and do not reflect "bioregions", which seem more suited to the return of benefits. And just as plants and marine organisms do not follow provincial lines, neither do traditional medicines, which are often collected and transported over large areas. It therefore seems likely that benefit sharing where larger social interests are involved should be done on a national level. Provincial departments might be in the position to assist with the distribution of funds and related implementation programmes, but the primary level of over sight and decision-making will have to remain at a national level.

and not from the sale of commercial products.[160] Their significance should not be underestimated due to the slim chances for commercial product development from collection programmes as well as the fact that opportunities arising from these process benefits can often not be bought.[161]

A local example is an in-house benefit-sharing programme for products developed from local species and traditional knowledge. It firstly supported an Institute for Traditional Medicine, to be established and run by healers to train such healers in literacy, primary health care, business and similar skills. The proposal was that the Institute would work with a loosely organised group of healers, and not a single healers association. Secondly, it would source raw plant material from disadvantaged rural areas through nurseries and cultivation. This ensured that both companies and communities benefited in that the companies obtained an affordable source of raw material and communities were provided with jobs. The structure of specific benefit-sharing arrangements, though guided by nationally developed principles, tends to be unique in every case. Each particular programme will have a research orientation and outlook that will influence and be reflected in their benefit-sharing strategies.[162]

South Africa has made tremendous progress since it became a signatory to the CBD. National policy and legislation has been put in place in order to ensure that the aims and objectives of the CBD are attained. This will be dealt with in the following paragraph.

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160 Laird and Wynberg *A Discussion Paper Produced for the Land and Agriculture Policy Centre 54*.

161 Laird and Wynberg *A Discussion Paper Produced for the Land and Agriculture Policy Centre 54*. "Process benefits" can include, for example, the exchange of research materials, the supply of equipment, results flowing from such research, and training for students. These benefits can initially be obtained through advance financial payments which are intended to cover an agreed upon workplan. It might further, on an informal basis, stem from relationships built up between researchers. Though negotiations surrounding the determination of royalty ranges should be done at an early stage, the value of more informal benefits that result from research should not be disregarded.

162 Laird and Wynberg *A Discussion Paper Produced for the Land and Agriculture Policy Centre 54-55.*

7.2 The CBD and the BDA

7.2.1 Introduction

South Africa became a signatory to the CBD on 4 June 1993.[163] The CBD was ratified and South Africa became a party to the CBD on 2 November 1995.[164] The provisions of the CBD were incorporated into South African municipal law through the promulgation of the BDA.[165] The BDA was adopted in three parts of which the final part came into operation as recent as 1 January 2006.[166] The national environmental management principles contained in section 2 of the NEMA guides the National Environmental Management: Biodiversity Act (hereinafter the BDA).[167] When any provisions contained within the BDA finds itself in conflict with other national legislation in force immediately prior to the date of commencement of the BDA, the BDA shall prevail.[168] Disputes with provincial legislation must be resolved in accordance with section 146 of the Constitution.[169] In the case of municipal by-laws or any other subordinate legislation, the BDA shall prevail.[170]

In terms of the CBD South Africa has to meet certain requirements, develop national strategies, plans or programmes, or adapt existing strategies, plans or programmes. The Department of Environmental Affairs and Tourism (DEAT) is the government agency responsible for coordinating the implementation of the CBD in South Africa. DEAT has embarked upon a consultative process to develop a coherent biodiversity policy and strategy for

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163 http://www.biodiv.org/world/parties.asp July 12, 2006.
164 http://www.biodiv.org/world/parties.asp July 12, 2006.
165 Act 10 of 2004.
166 On 1 January 2006 chapter 6 and section 105 came into operation. Chapter six is of great importance as this chapter deals directly with bioprospecting, access and benefit sharing.
167 Section 7 of the BDA.
168 Section 8(1)(a) of the BDA.
169 Section 8(1)(b) of the BDA.
170 Section 8(1)(c) of the BDA.

the country.[171] Hence the development of the National Biodiversity and Action Plan.[172]

7.2.2 The BDA

The BDA came into operation on the 1 September 2004.[173] It has three main objectives, which are extremely similar to the CBD. These are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising out of the utilisation of genetic resources.[174] Benefit sharing includes appropriate access to genetic resources and appropriate transfer of relevant technologies, taking into account all rights over those resources and technologies. This can further also be achieved through appropriate funding.[175]

The following definitions contained within the first chapter of the BDA needs to be stated as they have important bearing on the provisions contained in chapter six of the BDA that deals with bioprospecting, access and benefit sharing.[176] The word "benefit" is described as bioprospecting involving indigenous biological resources and includes any benefit, whether commercial or not, arising from bioprospecting involving such resources including both monetary and non-monetary returns. To fully understand this, the meaning of "bioprospecting" has to be explained. "Bioprospecting", referring to indigenous biological resources, means "any research on, or development or application of indigenous biological resources for commercial and industrial exploitation." Included within this meaning are the following:

> (a) the systematic search, collection or gathering of such resources or making extractions from those resources for purposes of research, development or application;

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171 Laird and Wynberg *A Discussion Paper Produced for the Land and Agriculture Policy Centre 12*.
172 This will be discussed in greater detail later in the following paragraphs.
173 *GG 26436* of 2004.
174 Section 2 of the BDA.
175 Section 2 of the BDA.
176 Chapter 1 of the BDA.

(b) the utilisation for purposes of such research or development of any information regarding any traditional uses of indigenous biological resources[177] by indigenous communities; or

(c) research on, or the application, development or modification of, any such traditional uses, for commercial or industrial exploitation.[178]

This is encouraging as both monetary and non-monetary returns, as well as commercial, industrial and private exploitation can be used to create such returns. Other positive aspects are the monitoring of local usage by indigenous peoples to first of all determine normal or current usage of biological resources within an area or bioregion[179] that on its part will assist in determining monetary or non-monetary gain for outside parties, like international companies or their national affiliates.

The BDA finds application, within the Republic, to human activity affecting South Africa's biological diversity and its components and is binding on all organs of state, including national and local spheres of government.[180] In the case of provincial government, the rights contained in section 146 of the Constitution will have to be measured to each specific situation.[181]

Specific provision is made that the BDA should be read in conjunction with any applicable provisions of the National Environmental Management Act

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177 The reference to "indigenous biological resource" used in this context is as defined in section 80(2)(a) of the BDA which includes "(i) any indigenous biological resources as defined in paragraph (b) of the definition of 'indigenous biological resource' in section 1, whether gathered from the wild or accessed from any other source, including any animals, plants or other organisms of an indigenous species cultivated, bred or kept in captivity or cultivated or altered in any way by means of biotechnology (ii) any cultivar, variety, strain, derivative, hybrid or fertile version of any indigenous species or of any animals, plants or other organisms referred to in subparagraph (i) and (iii) any exotic animals, plants or other organisms, whether gathered from the wild or accessed from any other source which, through the use of biotechnology, have been altered with any genetic material or chemical compound found in any indigenous species or any animals, plants or other organisms referred to in subparagraph (i) or (ii). Section 80(2)(b) however excludes (i) genetic material of human origin (ii) any exotic animals, plants or other organisms, other than exotic animals, plants or other organisms referred to in paragraph (a) (iii) and (iii) indigenous biological resources listed in terms of the International Treaty on Plant Genetic Resources for Food and Agriculture."

178 Section 1 of the BDA.

179 "Bioregion" is described as a region that has in terms of section 40(1) of the BDA been determined as such.

180 This is in accordance with the sovereignty principle as captured in the CBD whereby the state is held to be the trustee of biological diversity.

181 Section 3 and 4 of the BDA.

(NEMA).[182] This means that effect is further given to ratify international agreements affecting biodiversity to which South Africa is a party thereby binding the Republic to such agreements.[183]

Chapter 3 of the BDA caters for biodiversity planning and monitoring.[184] Provision is made for integrated and coordinated biodiversity planning, the monitoring of the conservation status of the various components of South Africa's biodiversity and the furtherance of biological research.[185] It further prescribes a detailed regime for planning and monitoring South Africa's biodiversity. The BDA's planning and monitoring regime revolves around three types of planning instruments: (a) a national biodiversity framework, (b) bioregional plans[186] and (c) biodiversity management plans.[187] Before any of these three plans can be approved or adopted, the Minister is obligated to follow the consultative process adopted n the BDA.[188] The three planning instruments must not be in conflict with other relevant national or provincial plans.[189]

The BDA requires the development of a national biodiversity framework to be developed within a period of three years after the inception thereof.[190] This framework must "provide for an integrated, coordinated and uniform approach

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182 Act 107 of 1998.
183 Section 5 of the BDA.
184 Article 6 of the CBD.
185 Chapter 3 of the BDA. This topic will be abbreviated upon later on in the paper.
186 The Minister or Member of the Executive Council for a particular province may determine a specific geographic region as a bioregion. They would then have to publish a plan for the management of biodiversity in such a region as well determine a bioregional plan for that specific region. This plan must be periodically reviewed and amended if necessary and provision is also made for transboundary agreements to be entered into with neighbouring countries to secure effective implementation of a plan.
187 Glazewski *Environmental Law in South Africa* 269. The final type of plan that can be implemented is the Biodiversity Management Plan, which may be initiated by a number of stipulated bodies and approved by the Minister in respect of an ecosystem listed in section 52 of the BDA, indigenous species listed in section 56 or to give effect to South Africa's international obligations in respect of migratory species agreements. Such plans must "be aimed at the long term survival in nature of the species or ecosystems to which the plan relates ..." provide for the monitoring and " be consistent with a number of instruments including any municipal integrated development plan..."
188 Section 47 of the BDA.
189 Section 48 of the BDA. The plans referred to include Environmental Implementation Plans, Environmental Management Plans, Integrated Development Plans as well as Spatial Development Frameworks. For detailed discussion see Glazewski *Environmental Law in South Africa* 270.
190 Section 58 of the CBD, which is captured in Section 38 of the BDA.

to biodiversity management by organs of state in all spheres of government, non-governmental organisations, the private sector, local communities, other stakeholders and the public."[191] Priority areas for conservation action together with the establishment of protected areas should also be identified.[192] Provision must be made for regional co-operation[193] and norms and standards may be determined for provincial and municipal environmental conservation plans.[194] The DEAT prepared the National Biodiversity Strategy Action Plan (NBSAP) during the period May 2003 to May 2005. The aim of this strategy and action plan is to establish a framework and a plan of action for the conservation and sustainable use of South Africa's biodiversity and the equitable sharing of benefits derived from this use.[195]

The NBSAP document was accordingly finalised and comprises of a background and executive summary, strategy and implementation plan. It provides the background to the NBSAP process followed in South Africa and an executive summary of the situational assessment that has guided the development of this strategy. The plan sets out the strategic objectives, outcomes and activities needed to achieve the overarching goal of conservation, sustainable use and equity. An implementation plan contained therein sets out high priority activities, which are needed to achieve the objectives, including lead agents, partners, targets and indicators. Long term (15 year) targets have been set for the strategic objectives, while 5-year objectives have been set at the outcome level. The NBSAP is further supported by a country study, which is an assessment of South Africa's biodiversity, socio-economic and political context. It provides an overview of key issues, constraints and opportunities identified in the stocktaking and assessment phase.[196] The NBSAP unfortunately does not say much about access and benefit sharing *per se* and only makes mention of the lack of legal and administrative mechanisms to set conditions for benefit sharing in South

191 Section 39(1)(a) of the BDA.
192 Section 39(1)(c) of the BDA.
193 Section 39(1)(d) of the BDA.
194 Section 39(2) of the BDA.
195 The National Biodiversity Strategy Action Plan can be found at www.deat.gov.za/biodiversity.
196 NBSAP page 1.

Africa.[197] The NBSAP however refers to the provisions of the BDA and states that the BDA encapsulates South Africa's legislation on access and benefit sharing.

7.3 Chapter 6 of the BDA: Bioprospecting, Access and Benefit Sharing

As mentioned earlier chapter six of the BDA contains the aspects that have direct bearing on bioprospecting, access to biological resources and benefit sharing. The purpose of this chapter is to regulate bioprospecting involving indigenous biological resources and to regulate the export from the republic of indigenous biological resources for the purpose of bioprospecting or any other kind of research.[198] Provision is further made for a fair and equitable sharing by stakeholders in benefits arising from bioprospecting involving indigenous biological resources.[199] Chapter seven deals with the issuing of permits authorising restricted activities involving most importantly specimens as contained in sections 57[200], 65(1)[201] and 71(1)[202] of the BDA as well as bioprospecting involving indigenous biological resources in terms of section 81(1) and the export of indigenous biological resources for bioprospecting or any other type of research in terms of section 81(1).[203] An application must be

197 NBSAP page 18.
198 Section 80 of the BDA.
199 Section 80 of the BDA.
200 Section 57 of the BDA deals with restricted activities involving listed threatened or protected species. It states "(1) A person may not carry out a restricted activity involving a specimen of a listed threatened or protected species without a permit issued in terms of Chapter 7. (2) The Minister may, by notice in the Gazette, prohibit the carrying out of any activity- (a) which is of a nature that may negatively impact on the survival of a listed threatened or protected species; and (b) which is specified in the notice, or prohibit the carrying out of such activity without a permit issued in terms of Chapter 7. (3) Subsection (1) does not apply in respect of a specimen of a listed threatened or protected species conveyed from outside the Republic in transit through the Republic to a destination outside the Republic, provided that such transit through the Republic takes place under the control of an environmental management inspector."
201 Section 65(1) of the BDA deals with restricted activities involving alien species introduced in bioregions. Sub clause one states that in order to be involved in activities that relates to such alien species, a permit in terms of Chapter 7 of the BDA has to be obtained.
202 This section deals with restricted activities involving listed invasive species. In these circumstances a permit in accordance with Chapter 7 of the BDA will also have to be obtained.
203 Chapter 7 of the BDA.

made to the relevant issuing authority[204] which must be accompanied by all required information concerning the proposed bioprospecting, the indigenous biological resources to be used along with any other information required that is relevant for the proper consideration of such an application.[205] The BDA further states that certain stakeholders must be protected and their interests kept in mind when considering the granting of a permit for a proposed bioprospecting project.[206]

These stakeholders are:

> (a) a person, including any organ of state or community, providing or giving access to the indigenous biological resources to which the application relates; and
> (b) an indigenous community whose -
> (i) traditional uses of the indigenous biological resources to which the application relates have initiated or will contribute to or form part of the proposed bioprospecting; or
> (ii) whose knowledge of or discoveries about the indigenous biological resources to which the application relates are to be used for the proposed bioprospecting.[207]

In a situation where a person, community or an organ of state provides or gives access to biological resources to which such an application relates, a permit will only be issued if:

- all information regarding to the permit was disclosed and the necessary approval and prior consent obtained from such persons or entities;
- the applicant and the stakeholder entered into a material transfer agreement that regulates the access to such resources; and
- the parties further entered into a benefit sharing agreement that entitles such stakeholder to share in any future benefits that may be derived from any relevant bioprospecting.
- Finally, the necessary approval for both the aforementioned agreements was obtained from the Minister in accordance with sections 83(2)[208] and 84(2)[209] of the BDA.[210]

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204 Section 1 of the BDA describes this issuing authority as either the Minister or an organ of state in the national, provincial or local sphere of government designated by regulation in terms of section 97 of the BDA as an issuing authority for permits of the kind in question.
205 Section 81(2) of the BDA.
206 Section 82(1) of the BDA.
207 Section 82(1) of the BDA.
208 This provision determines that all benefit sharing agreements and any amendments thereto must be submitted to the Minister for approval and will not take effect unless approved by as such.
209 This section determines that a material transfer agreement or any amendments thereto will also have to be approved by the Minister and will not take effect unless so approved.
210 Section 82(2) of the BDA. See Glazewski *Environmental Law in South Africa* 279.

In cases where the stakeholder is an indigenous community as referred to in section 82(1)(b) then the relevant authority may only issue a permit if:

> (a) the applicant has disclosed all material information relating to the relevant bioprospecting to the stakeholder and on the basis of that disclosure has obtained the prior consent of the stakeholder to use any of the stakeholder's knowledge of or discoveries about the indigenous biological resources for the proposed bioprospecting;
> (b) the applicant and the stakeholder have entered into a benefit-sharing agreement that provides for sharing by the stakeholder in any future benefits that may be derived from the relevant bioprospecting; and
> (c) the Minister has in terms of section 83(2) approved such benefit-sharing agreement.[211]

The already mentioned issuing authority may further engage the applicant and stakeholder on the terms and conditions as contained in the agreements between them and assist in the negotiations between the parties to ensure equal footing for such discussions.[212] The BDA however requires the Minister to ensure that the agreement reached between the parties is fair and equitable, to make further recommendations if necessary and to perform any functions that may be required.[213]

8 Conclusion

In this paper a foundation was laid as to background of the development of the concept "biological diversity", together with discussions surrounding important topics that have an influence on access to biological resources and more specifically benefit sharing as envisaged in terms of the CBD.

As stated in the introduction to this paper, the absence of legal and administrative mechanisms to control access to South Africa's genetic resources and to set conditions for benefit sharing has in the past been a key constraint towards achieving more meaningful benefit sharing in South Africa. South Africa's legislation with respect to access and benefit sharing has however developed a great deal since the inception of the CBD. It is clear

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211 Section 82(3) of the BDA. See Glazewski *Environmental Law in South Africa* 279.
212 Section 82(4) (a) and (b) of the BDA.
213 Section 82(4)(c), (d) and (e) of the BDA. See Glazewski *Environmental Law in South Africa* 279.

that there are many benefits in the conservation of biological diversity and that the platform has been created through South Africa's legislative framework to enable indigenous people and local communities to benefit from biodiversity prospecting and the conservation of our biological resources.

The core question that needed to be answered was how benefit sharing as envisaged within the CBD is implemented in developing countries, using South Africa as an example. We have seen in the previous chapter that the objectives contained in the CBD have been captured almost exactly in that of the BDA thereby also catering for the management and conservation of biological diversity, the use of biological resources in a sustainable manner, and the sharing of benefits derived from bioprospecting on an equal basis. The BDA confirms the country's trusteeship over its own biological resources and confirms state sovereignty over resources found within its own borders. It further recognises the important role of traditional communities and peoples when it comes to conservation and the benefits that should also be allocated to such communities. The main provisions of the CBD with regards to sustainable use, bioprospecting and access and benefitsharing are captured in Chapter 6 of the BDA. Chapter 6 further deals with the issue surrounding permits, which cannot be obtained by prospecting companies before first disclosing all material information surrounding the bioprospecting activities. Along with this article 82 states that prospectors will have to enter into material transfer agreements to obtain access to biological resources as well as conclude benefitsharing agreements that provides for sharing by the stakeholder in any future benefits that may be derived from relevant bioprospecting. Thereby securing the way by which such transactions should be regulated.

With regards to proposals as to how access and benefitsharing can be effectively attained, focus should be placed on material transfer agreements coupled with benefitsharing agreements. It is important to note that such agreements are subject to the approval of the Minister responsible for national environmental management. The Minister, together with the DEAT on local, provincial and national level, is furthermore compelled in terms of section 82

of the BDA to assist local or indigenous communities with the negotiation and conclusion of such agreements. This might become a great burden to government and should it not be able to timeous and adequately assist parties, the negotiation and conclusion of these agreements might be hampered.

Another perspective to keep in mind would be that of local or indigenous communities who would have to deal with large corporate companies that have extensive experience and can afford expensive legal advisors to assist them. How will the State, being the trustee of its biological resources in terms of the CBD and the BDA, assist local or indigenous communities in bridging this particular divide? No provision in the BDA gives guidance, as to which criteria would be taken into account when it comes to determining fairness and the equitable sharing of benefits. This leaves open another area that could end up being detrimental to the position of local or indigenous communities when it comes to negotiating and concluding relevant agreements.

After dissecting the provisions of the BDA it may be said that its provisions together with the implementation of the national biodiversity framework have now to a great extent addressed previous legal and administrative constraints that hampered conservation efforts and benefit sharing in South Africa in the past. One can only hope that the implementation of these provisions is done effectively. This will prove to be one the greatest challenges to all role players involved.

9 Bibliography

ARTICLES

Bawa R "The North-South Debate over the Protection of Intellectual Property" 1997 *Dalhousie Journal Of Legal Studies* 77-119

Chambers B W "WSSD and an International Regime on Access and Benefit Sharing: Is a Protocol the Appropriate Legal Instrument?" 2003 *RECIEL* 310-320

Keating D "Access to Genetic Resources and Equitable Benefit Sharing Through a New Disclosure Requirement in the Patent System: An Issue in Search of a Forum" 2005 *JPTOS* 525 - 547

Putterman DM "*Model Material Transfer Agreements for Equitable Biodiversity Prospecting*" 1995 *JILP* 149-178

Scholtz W "The Relationship between the Environment and Trade in the WTO: prolonging the Conflict between North and South?" 2004 *SPECULUM JURIS* 250-265

Scholtz W "The Transfer of Technology Between the North and the South: Killed by TRIPS Agreement?" 2005 *TFLR* 208-231

Scholtz W "Animal Culling: A Sustainable Approach or Anthropocentric Atrocity?: Issues of Biodiversity and Custodial Sovereignty" 2005 *MqJICEL* 9-30

Salzman J "Valuing Ecosystem Services" 1997 *Ecology L. Q.* 887-903

Tinker C "Responsibility for Biological Diversity Conservation under International Law" 1995 *Vand. J. Transnat'l Law* 777-816

Von Hahn A "Implementation and Further Development of the Biodiversity Convention" 2003 *ZaöRV* 295-353

BOOKS

Birnie P and Boyle A *International Law and the Environment* 2nd ed (Oxford University Press Oxford 2002)

Bowman M "The Nature Development and Philosophical Foundations of the Biodiversity Concept in International Law" in Redgwell C and Bowman M (eds) *International Law and the Conservation of Biological Diversity* (Kluwer Law International London 1995) 5-31

Boyle AE "The Rio Convention on Biological Diversity" in Redgwell C and Bowman M (eds) *International Law and the Conservation of Biological Diversity* (Kluwer Law International London 1995) 33-49

Brush S "Whose Knowledge, Whose Genes, Whose Rights?" in Brush S and Stabinsky D (eds) *Valuing Local Knowledge: Indigenous People and Intellectual Property Rights* (Island Press/ Washington 1996)

Glazewski J *Environmental Law in South Africa* 2nd ed (LexisNexis Butterworths Durban 2005)

Glowka L, Burhenne-Guilmin F and Synge H "A Guide to the Convention on Biological Diversity" *Environmental Policy and Law Paper,* no 30 (1994) *IUCN*

Glowka L "A Guide to Designing Legal Frameworks to Determine Access to Genetic Resources" *Environmental Policy and Law Paper,* no 34 (1998) *IUCN*

Hunter D, Salzman J and Zaelke D *International Environmental Law and Policy* 2nd ed (Foundation Press New York 2002)

Johnston S *Sustainability, Biodiversity, and International Law* in Bowman M and Redgwell C (eds) *International Law and the Conservation of Biological Diversity* (1996) 51-69

McConnell F *The Biodiversity Convention; A Negotiating History (*Kluwer Law International London and The Hague 1996)

O'Connell J "Patent Cooperation Treaty (PCT)" 2005 *Blackwell Encyclopedic Dictionary of International Management* 1-279

Posey DA and Dutfield G *Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities* (International Development Research Centre Ottawa Canada 1996)

Sands P *Principles of International Environmental Law* 2nd ed (Cambridge University Press New York 2003)

CONFERENCE OF PARTIES DECISIONS AND OTHER

Conference of Parties of the Convention on Biological Diversity of 1992 Decision III/17 (1996)

Conference of Parties of the Convention on Biological Diversity of 1992 Decision VI/10 (2002)

UNEP Governing Council Decision 14/26

The Second Conference of the Parties to the Convention on Biological Diversity, Jakarta, Indonesia (1995) 8-9

The Bonn Guidelines to the Convention on Biological Diversity, Conference of the Parties Decision VI/24 (2002)

Correa C "Traditional Knowledge and Intellectual Property" (Quarter United Nations Office Geneva 2001) (Report of the UK Department for International Development)

GOVERNMENT GAZETTES

Government Gazette 26436 of 7 June 2004

INTERNATIONAL CONVENTIONS AND TREATIES

Bonn Convention on the Conservation of Migratory Species of Wild Animals, 1979

Convention on Biological Diversity, 1992

Convention on International Trade in Endangered Species, 1973

Convention on the Law of the Sea, 1982

Patent Cooperation Treaty, 1970

Ramsar Convention on Wetlands of International Importance, 1971

Substantive Patent Law Treaty, 2000

INTERNET

Laird SA and Wynberg RP 1996 Biodiversity Prospecting in South Africa: Towards the Development of Equitable Partnerships [Found on Internet] HYPERLINK http://www.biowatch.org.za/main.asp?include=docs/reports/1996/bioprospects/contents.html [Date of use 8 July 2006]

Summary of the Patent Cooperation Treaty [Found on Internet] HYPERLINK http://www.wipo.int/treaties/en/registration/pct/ summary_pct.html [Date of use 25 September 2006]

Department of Environmental Affairs and Tourism 2005 The National Biodiversity Strategy Action Plan [Found on Internet] HYPERLINK http://www.deat.gov.za/biodiversity [Date of use 8 July 2006]

LEGISLATION

The *Constitution of the Republic of South Africa*, 1996

National Environmental Management: Biodiversity Act 10 of 2000

National Environmental Management Act 107 of 1998