

The Bonn Guidelines on Access to Genetic Resources and Benefit Sharing

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INTRODUCTION

In 2002, State parties to the Convention on Biological Diversity (the CBD) formally adopted the Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization (the Bonn Guidelines).¹ The Sixth Session of the CBD Conference of the Parties (COP-6) at The Hague in April 2002 was attended by some 2000 government and non-government officials from 166 countries. Observing a shift away from policy formulation, governments resolved to develop and implement effective and innovative mechanisms such as the Bonn Guidelines to sustainably use genetic resources. Acknowledging that the destruction of biological diversity will remain high unless the custodians of this natural wealth benefit from it, governments also undertook to 'guarantee' equitable benefit sharing.²

This article addresses the question of what procedural and substantive elements are added by the Bonn Guidelines in elaborating upon Article 15 of the CBD. A brief historical account of negotiations and the respective roles of governments, the market and 'stakeholders' is presented in the first section. With a view to evaluating the law-making process, observations will be made concerning the degree of inter-governmental collaboration necessitated by the CBD's relationship with other regimes. The substantive issues arising from the Guidelines analysed in the second section include its definitions and scope, national access legislation, the concepts of benefit sharing, mutually agreed terms and prior informed consent (PIC), protecting traditional knowledge, capacity building, and enforcement mechanisms. Finally, the third section identifies some outstanding issues to support the conclusion that, notwithstanding several meritorious elements, the difficult issues are avoided and the Guidelines are premature and incomplete.

¹ Convention on Biological Diversity (CBD), Conference of the Parties (COP), Decision VI/24 A (2002) (hereinafter the 'Bonn Guidelines').

² *Report of the Sixth Meeting of the COP to the CBD* (United Nations (UN) Doc UNEP/CBD/COP/6/20, 2002), Annex 2, The Hague Ministerial Declaration, para. 14.

AN HISTORICAL OVERVIEW OF THE NEGOTIATIONS

The objectives of the CBD are to conserve biological diversity, sustainably use its components, and fairly and equitably share the benefits arising from the utilization of genetic resources, including through the access and transfer of technology and taking into account all resource and technological rights and funding.³ During negotiations at the 1992 United Nations Conference on Environment and Development at Rio de Janeiro, the International Chamber of Commerce expressed concern that excessive compensation may be required by firms to acquire genetic resources, and that existing intellectual property protection could be undermined.⁴ Similar concerns were observed by the US Government.⁵ States also acknowledged several additional matters requiring resolution, including plant genetic resources, access to *ex-situ* collections acquired before entry into force of the CBD and the question of farmers' rights.⁶

The CBD Conference of the Parties met at Nassau (28 November–9 December 1994), Jakarta (6–17 November 1995), Buenos Aires (4–15 November 1996), Bratislava (4–15 May 1998), Nairobi (15–26 May 2000) and The Hague (7–9 April 2002), with one extraordinary session held in Cartagena (22–23 February 1999). Its medium-term programme of work included compiling existing legislative, administrative and policy information on access to genetic resources and the equitable sharing of benefits arising from their use.⁷ Governments considered the CBD to constitute a global partnership contemplating novel approaches to multilateral

³ Convention on Biological Diversity (Rio de Janeiro, 1992), printed in 31 ILM (1992) 818, Article 1.

⁴ International Chamber of Commerce (ICC), *Comments on the United Nations Convention on the Protection of Biodiversity* (ICC, 1992), paper held on file with author.

⁵ USA, Declaration made at the United Nations Environmental Programme (UNEP) Conference for the Adoption of the Agreed Text of the CBD, printed in 31 ILM (1992), 848.

⁶ Nairobi Final Act adopted by the Conference for the Adoption of the Agreed Text of the CBD (1992), Resolution Three.

⁷ CBD Decision I/9 (1994) on the Medium Term Programme of Work of the COP.

cooperation on conservation and development.⁸ In response to concerns by Group 77/China that insufficient attention was devoted to equitable benefit sharing, prior informed consent and capacity building, COP-2 affirmed that the CBD was grounded upon mutual reliance and fair and equitable benefit sharing for the prosperity of all humankind.⁹ Accordingly, States addressed the latter as a separate agenda item in 1998. COP-4 established a regionally balanced Panel of Experts on Access and Benefit Sharing (the Expert Panel) composed of representatives from the public and private sectors, as well as indigenous communities, to develop a common understanding of basic concepts and to explore all options including guiding principles, guidelines and codes of best practice.¹⁰

In 2000, the Expert Panel was reconvened with a concrete mandate, an increase from 50 to 60 experts, and an agenda assessing user and provider experiences, studying complementary options, and identifying approaches for stakeholder participation.¹¹ COP-5 simultaneously established an Ad Hoc Open-ended Working Group on Access and Benefit Sharing comprised of government-nominated representatives and open to participation by indigenous and local communities, non-government organizations (NGOs), industry, scientific and academic institutions, and inter-governmental organizations. Its mandate was to develop guidelines, other approaches and their respective elements to serve as inputs for drafting legislative, administrative or policy measures and contractual arrangements under mutually agreed terms for access and benefit sharing (ABS).¹² The Expert Panel met at San Jose (4–8 October 1999) and Montreal (19–22 March 2001) whilst the Working Group met in Bonn (22–26 October 2001).

The Swiss Government, in partnership with companies, universities and NGOs, formulated draft guidelines which were submitted to both the Working Group and Panel of Experts during 2001.¹³ The draft proposed, *inter alia* the periodic reporting by stakeholders to the clearing house mechanism; certification systems to verify compliance administered by standardization

organizations; and that stakeholders be assisted by mediators when negotiating mutually agreed terms. The Swiss Guidelines uniquely differentiated all steps of the process from collecting genetic resources to commercializing scientific results and elucidated the responsibilities of various stakeholders. In particular, user responsibilities included: ensuring that access was in accordance with the CBD; making 'reasonable and sincere efforts' to enable other stakeholders to participate; and endeavouring to ensure that research and development contributed to the providers' technological capacity. Although they permitted continued traditional use, the Guidelines were not directed at protecting the traditional knowledge of local and indigenous communities.

Negotiations on the Bonn Guidelines have similarly been noteworthy for participation by a multiplicity of actors including governments, inter-governmental organizations, indigenous and local communities, industry, the scientific and research community, farmers, NGOs and the media. Although commitments only exist between CBD parties, 'stakeholders' are also closely involved and affected. In particular, the private sector has been instrumental in implementing CBD objectives. Integrating biodiversity into corporate management systems develops brand reputation, identifies novel sources for competitiveness, differentiates products, attracts price premiums, manages risks and satisfies corporate social responsibilities. However, business often confines equitable benefit sharing to distributing non-monetary benefits such as community participation, supporting regional conservation and industry initiatives, personnel exchange, and sharing biological information.¹⁴ Largely reactive to proposals during the drafting stages, some industries, such as the petroleum industry have had limited involvement within CBD processes.¹⁵

The Expert Panel evaluated which type of guidelines and other approaches were best suited for fulfilling CBD objectives and identified appropriate elements for inclusion.¹⁶ However, when the Working Group adopted the draft Bonn Guidelines in 2001, environmental NGOs argued that guidelines were no substitute for legally binding national instruments. The International Indigenous Biodiversity Forum also objected to the draft, stating that, consistent with

⁸ The Bahamas Ministerial Declaration, *Report of the First Meeting of the COP to the CBD* (UN Doc UNEP/CBD/COP/1/17, 1995), 30.

⁹ CBD, *Report of the Second Meeting of the COP to the CBD* (UN Doc UNEP/CBD/COP/2/19, 1995), para. 107 and the Jakarta Ministerial Statement on the Implementation of the CBD (UN Doc UNEP/CBD/COP/2/19, 1995), Appendix, para. 5.

¹⁰ CBD Decision IV/8 (1998) on Access and Benefit Sharing, para. 3.

¹¹ CBD Decision V/26A (2000) on Access and Benefit-Sharing Arrangements.

¹² *Ibid.*, para. 11.

¹³ CBD, *Building a New Partnership: Draft Guidelines on Access and Benefit Sharing Regarding the Utilization of Genetic Resources*, submission by Switzerland (UN Doc UNEP/CBD/WG-ABS/1/INF/5, 2001); CBD, *Study of Complementary Options to Address Access and Benefit Sharing in the Framework of the CBD* (UN Doc UNEP/CBD/EP-ABS/2/INF/1, 2001).

¹⁴ Earthwatch Institute/World Conservation Union (IUCN)/World Business Council for Sustainable Development (WBCSD), *Business and Biodiversity: The Handbook for Corporate Action* (ATAR Roto Presse SA, 2002), at 48–50.

¹⁵ International Petroleum Industry Environmental Conservation Association (IPIECA), *Biodiversity and the Petroleum Industry – A Guide to the Biodiversity Negotiations* (IPIECA, 2000), at 6. See the website available at <<http://www.ipeica.org/publications/biodiversity.html>>.

¹⁶ CBD, *Organizational Matters: Adoption of the Agenda* (UN Doc UNEP/CBD/EP-ABS/2/1/Add.1, 2001), para. 19.

self-determination, indigenous peoples should be duly recognized as rights-holders and not merely stakeholders over genetic resources.¹⁷ Pre-existing legally binding instruments provide that indigenous peoples shall 'wherever possible' participate in the benefits associated with resource exploitation pertaining to their lands.¹⁸ Indigenous groups also called upon governments to recognize their free PIC as a fundamental right for protecting traditional knowledge, innovations and practices.¹⁹ Emerging national legislation and the COP had only gone so far as to determine that access to them should be subject to their consent.²⁰

Outstanding issues for the Working Group to consider at COP-6 included the use of terms, scope, stakeholder involvement, *sui generis* legal regimes for protecting traditional knowledge, intellectual property rights (IPR), and capacity building. However, the Chair of the Working Group restricted negotiations at COP-6 to limited sections of the draft. This did not prevent governments from adding extra provisions when adopting the agreed final version of the Bonn Guidelines. Additional provisions included: further preambular disclaimers (protecting sovereign rights and not assigning genetic resource rights beyond those within the CBD or arising out of mutually agreed terms); explicitly including genetic derivatives and their products; and further enforcement measures. Provisions adopted at the instigation of indigenous groups concerned mechanisms for their effective participation (namely decisions and processes to be available in an understandable language), measures to enhance their negotiating capacity, 'social recognition' as a non-monetary benefit, and preserving traditional use as a responsibility of the country of origin or acquiring party.

Reversing an earlier contrary presumption, permission to access genetic resources does not necessarily imply permission to use associated knowledge, and vice versa. Notwithstanding that nothing in the Guidelines is to be construed as changing the rights and obligations of CBD parties, the Guidelines provide that the consent of relevant stakeholders should be obtained as appropriate to the circumstances and subject to national law.

THE DEGREE OF INTER-SECRETARIAL COLLABORATION

A further feature of negotiations has been the degree of inter-governmental collaboration necessitated by an embryonic genetic resources market and the CBD's relationship with other instruments. In respect of the former, the Guidelines state that markets are one method of efficiently achieving the conservation and sustainable use of biological diversity. Economic theory posits that well-functioning markets provide producers and consumers with sufficient information concerning resource scarcity. Losing biological diversity is associated, *inter alia*, with over-exploitation and modern agricultural techniques which boost productivity but introduce uniform crop varieties. Where accurate methodologies are lacking, markets may undervalue raw genetic resources and the contributions made in providing access to them.²¹ Governments have therefore sought to discern the social and economic value of genetic resources including industry demand within the marketplace.²² To this end, standard industry practice would be helpful in ascertaining an equitable share of benefits. However, commercial confidentiality can prevent access to perfect information, with parties to ABS arrangements frequently not disclosing royalty rates.

The sustainable supply of raw genetic material could have favourable conservation impacts by acting as alternative economic activities to more destructive practices such as forest clearing. The higher the value added of the genetic materials provided, the greater the market knowledge and the stronger the bargaining position for providers. Providers also benefit when conscious of relevant issues which parties must consider when negotiating ABS arrangements. COP-6 accordingly decided to continue the information-gathering exercise, strengthen the clearing house mechanism and conduct further case studies.²³ The CBD Secretariat has, to date, engaged in a painstaking and lethargic process to collect what sparse information exists. The lack of government responses, with only 13 submitting thematic reports, has rendered it difficult for the Secretariat to draw meaningful conclusions.²⁴

Parallel developments in other inter-governmental fora have also necessitated inter-secretarial collaboration

¹⁷ CBD, *Report of the Ad Hoc Open-Ended Working Group on Access and Benefit Sharing* (UN Doc UNEP/CBD/COP/6/6, 2001), paras 30, 45–46, Annex, recommendation 1.

¹⁸ International Labour Organization, Convention No. 169 concerning Indigenous and Tribal Peoples in Independent Countries (Geneva, 27 June 1989), printed in 72 *ILO Official Bulletin* 59 (entry into force 5 September 1991), Article 15(2).

¹⁹ International Indigenous Forum on Biodiversity, Closing Declaration at the Sixth COP of the CBD (The Hague, 19 April 2002). See the website available at <http://www.klimabuendnis.org/kbhome/english/politics/4216_en.htm>.

²⁰ CBD Decision VI/16 (2000).

²¹ CBD, *The Economic Valuation of Biological Diversity*, Second Meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (Montreal, 2–4 September 1996) (UN Doc UNEP/CBD/SBSTTA/2/13, 1996).

²² CBD Decision II/11 (1995) on Access to Genetic Resources, para. 1(b).

²³ CBD Decision VI/24D (2002) on Other Issues Relating to Access and Benefit Sharing.

²⁴ CBD, *Access and Benefit Sharing as Related to Genetic Resources, Progress Report on the Implementation of Decisions VI/24A–C* (UN Doc UNEP/CBD/COP/6/19, 2002), para. 28.

to ensure consistency between the resulting legal instruments. For example, eight inter-governmental organizations are presently studying the protection to be afforded to traditional knowledge.²⁵ The CBD Secretariat has been urged to collaborate with other inter-governmental organizations to ensure mutual supportiveness and complimentary efforts which avoid duplication of work.²⁶ In particular, Member States of the World Intellectual Property Organization (WIPO) have established the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore to, *inter alia*, determine the scope of traditional knowledge and formulate 'guide contractual practices', guidelines and model intellectual property clauses.²⁷ The CBD and WIPO Secretariats collaborated in considering the joint ownership of IPR as a mechanism for benefit sharing.²⁸ The CBD Secretariat has also participated in WIPO sessions as an observer and formalized arrangements within a memorandum of cooperation.

Fruitful collaboration contemplates regularly exchanging reports and mutual updating based upon respect for specialized mandates. WIPO is the obvious forum for drafting model contemporary IPR clauses for prospective inclusion within contractual ABS arrangements. Notwithstanding the limitless combination of contractual configurations, four general operational principles which apply across configurations can be identified. Intellectual property related rights and obligations should protect all forms of formal and informal human innovation, consider the sectoral characteristics of overarching policy frameworks, ensure the full and effective participation of all relevant stakeholders within negotiation processes, and distinguish between commercial, non-commercial and customary uses.²⁹

Government positions are narrowed at the international level as a consequence of proliferating instruments, and difficulties encountered in securing consensus within one forum can impede progress within another.

Calling upon States to coordinate their positions within multiple inter-governmental fora, CBD parties emphasized, during negotiations of the Bonn Guidelines, that governments should allow for a multilateral system to emerge under the auspices of the Food and Agriculture Organization (FAO).³⁰ Priorities in implementation and compliance are then determined according to legal status. However, overlapping agendas and the prospect of conflict between legal regimes can give rise to competitive institutional law making.

For example, of particular controversy is the relationship between the CBD and the World Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).³¹ The CBD Secretariat has been authorized to liaise with the WTO Secretariat and submit drafts for comment to, *inter alia*, study the impact of IPR systems upon biological diversity.³² Similarly, the WTO Secretariat has requested its United Nations counterparts to furnish updated information on their activities.³³ However, the CBD Secretariat has persistently and, to date, unsuccessfully petitioned the TRIPS Council for observer status.

Although TRIPS and the CBD reflect different perspectives, there remains the potential for complementary and synergistic interactions.³⁴ IPR can assist parties when implementing the CBD but equally can undermine its objectives. Intellectual property was contentious during CBD negotiations, with developing States arguing that existing systems hinder technology transfer and developed States arguing that strong universal protection stimulates investment. Whereas technology transfer must be consistent with the adequate and effective protection of IPR, CBD parties agreed to cooperate to ensure that such rights are supportive of and do not run counter to the Convention's objectives.³⁵ However, effectively protecting IPR over technology can amount to a *de facto* barrier on access to genetic resources.³⁶ IPR can also contribute to CBD objectives by creating incentives for conserving traditional indigenous knowledge and deterring misappropriation. In this respect, TRIPS negotiations did not specifically consider protecting traditional knowledge.

²⁵ UN Conference on Trade and Development, The 'State of the Debate' on Traditional Knowledge, International Seminar on Systems for the Protection and Commercialization of Traditional Knowledge, in Particular Traditional Medicines (New Delhi, 3–5 April 2002); see the website available at <http://r0.unctad.org/trade_env/test1/meetings/delhi/statedebateTK.doc>.

²⁶ For instance, CBD Decision III/15 (1997) on Access to Genetic Resources, para. 9.

²⁷ World Intellectual Property Organization (WIPO), General Assembly, 26th Session (Geneva, 2000) (WIPO Doc WO/GA/26/6); 'Guide contractual practices' are those which seek to 'guide' existing ones.

²⁸ CBD, *The Role of Intellectual Property Rights in the Sharing of Benefits Arising from the Use of Biological Resources and Associated Traditional Knowledge: Selected Case Studies* (UN Doc UNEP/CBD/COP/5/INF/26, 2000).

²⁹ WIPO, *Operational Principles for Intellectual Property Clauses of Contractual Agreements concerning Access to Genetic Resources and Benefit Sharing* (UN Doc WIPO/GRTKF/IC/2/3, 2001), 50–52.

³⁰ CBD Decision V/26A, n. 11 above, paras 7 and 8.

³¹ World Trade Organisation (WTO) Ministerial Declaration (Doha) (WTO Doc WT/MIN(01)/DEC/1, 2001), Article 19.

³² CBD Decision II/12 (1995).

³³ WTO, *Review of the Provisions of Article 27(3)(b). Relationship between the TRIPS Agreement and the CBD and Protection of Traditional Knowledge and Folklore*, Information from Intergovernmental Organizations (WTO Doc WT/CTE/W/210, 2002), at 1.

³⁴ CBD, *The CBD and the Agreement on Trade-Related Intellectual Property Rights (TRIPS): Relationships and Synergies* (UN Doc UNEP/CBD/COP/3/23, 1996), para. 35.

³⁵ See CBD, n. 3 above, Article 16(2), (5).

³⁶ CBD, *Regulating Access and Benefit Sharing: Basic Issues, Legal Instruments and Policy Proposals*, submission by Germany (UN Doc UNEP/CBD/WG-ABS/1/INF/4, 2001), 29.

Parties to the TRIPS Agreement may exclude plants, animals and the biological processes for their production from patentability, provided plant varieties are protected either through patents, effective *sui generis* systems, or a combination thereof.³⁷ These provisions are presently the subject of review. Although some governments believe that the CBD and TRIPS are mutually compatible, others argue that an inherent conflict exists and that TRIPS should be modified.³⁸ Business, for its part, asserts that TRIPS obligations prevail where inconsistencies arise.³⁹ Some governments and businesses fear that a revision of the TRIPS Agreement will lower patent protection. As the TRIPS Council has, as yet, been unable to reach a consensus, the question continues to be considered in light of the review of Article 27(3)(b) of the TRIPS Agreement.⁴⁰ CBD parties, however, are the poorer for it.

THE SUBSTANTIVE CONTENT OF THE BONN GUIDELINES

The Bonn Guidelines are structured in terms of general provisions (section 1), roles and responsibilities (section 2), stakeholder participation (section 3), the ABS process (section 4), other provisions (section 5), suggested elements for material transfer agreements (MTAs) (Appendix 1) and stipulated conditions for monetary and non-monetary benefits (Appendix 2). This section will consider in turn the general provisions, access to genetic resources, benefit sharing, mutually agreed terms, prior informed consent, protecting traditional knowledge, capacity building, and enforcement.

GENERAL PROVISIONS

Under the CBD, 'genetic resources' are defined as genetic material of actual or potential value (with 'genetic material'

meaning any material of plant, animal, microbial or other origin containing functional units of heredity)⁴¹ Being both reproducible and highly portable, genetic resources exist within natural habitats (*in-situ* conditions) and outside such ecosystems (*ex situ*). States possessing genetic resources with *in-situ* conditions (countries of origin) can be differentiated from States supplying such resources either from *in-situ* or *ex-situ* sources (providing countries) and States where these resources are ultimately used (user countries). CBD provisions only apply to areas within the national jurisdiction of contracting parties for the components of biological diversity or to areas within national jurisdiction or control for biological processes and activities.⁴²

Recognizing sovereign rights over natural resources, Article 15 of the CBD provides that the authority to determine access to genetic resources lies with national governments and is subject to national legislation. However, governments will endeavour to facilitate access for environmentally sound uses and avoid restrictions running counter to CBD objectives. The genetic resources being provided are only those from contracting parties who are countries of origin or parties who have acquired those resources in accordance with the Convention. Access, where granted, is on mutually agreed terms and subject to the PIC of the providing party, unless otherwise determined. Parties will also endeavour to conduct scientific research with the full participation of those providing parties and, where possible, within them. Finally, parties shall adopt legislative, administrative or policy measures to share, in a fair and equitable way and on mutually agreed terms, research and development results and the benefits arising from the commercial and other utilization of genetic resources with providing parties. It should also be noted that Article 15 relates to other CBD provisions, thereby producing an interconnected series of legal obligations.⁴³

Matters by definition excluded from its scope include biochemicals, *ex-situ* holdings acquired before the entry into force of the CBD, human genetic resources, and resources situated outside national jurisdiction (for instance, marine genetic resources on the high seas and on the seabed). Additionally, several key terms remain undefined by the CBD and the Bonn Guidelines. One concern was that overly prescriptive definitions may lead to misunderstandings on their legal status with resulting loss to flexibility and the desired broad applicability. Nevertheless, government experts informed by existing guidelines, codes of conduct, model agreements and national legislation have suggested elements for inclusion when using particular terms.⁴⁴ Consequently,

³⁷ Agreement on Trade-Related Aspects of Intellectual Property Rights, Marrakesh Agreement Establishing the WTO (Marrakesh, 15 April 1994), Annex 1C, Article 27(3)(b).

³⁸ Compare the views of the EU, Japan, Norway and the USA with respect to the former view and India, Kenya, Mauritius and Zambia with respect to the latter: TRIPS Council, *The Relationship between the TRIPS Agreement and the Convention on Biological Diversity: Summary of Issues Raised and Points Made* (WTO Doc IP/C/W/368, 2002), paras 6 and 9.

³⁹ ICC, *TRIPS and the Biodiversity Convention: What Conflict?* (ICC, 28 June 1999), see the website available at <http://www.iccwbo.org/home/statements_rules/statements/1999/trips_and_bio_convention.asp>; International Council of Chemical Associations, *Position on TRIPS and the Environment* (Virginia, 22 June 1999), 3, see the website available at <http://www.cefic.be/position/icca/pp_ic019.htm>.

⁴⁰ WTO, Council for Trade-Related Aspects of Intellectual Property Rights, *Implementation Issues Referred to the Council for TRIPS*, Report by the Chairman of the Council on his own Responsibility (WTO Doc IP/C/21, 2000); TRIPS Council, *Review of the Provisions of Article 27(3)(b), Relationship between the TRIPS Agreement and the Convention on Biological Diversity and the Protection of Traditional Knowledge and Folklore* (WTO Doc IP/C/W/347, 2002).

⁴¹ See CBD, n. 3 above, Article 2.

⁴² *Ibid.*, Article 4.

⁴³ *Ibid.*, Articles 16–21.

⁴⁴ CBD, *Access and Benefit Sharing as Related to Genetic Resources, Compilation of Submissions by Experts on the Use of Terms* (UN Doc UNEP/CBD/COP/6/INF/40, 2002).

'access', 'benefit sharing', 'commercialization', 'derivatives', 'provider', 'user', 'stakeholder', 'ex-situ collection' and 'voluntary nature' have been variously defined, in addition to 'in-situ conditions', 'prior informed consent' and 'entity'.

With respect to intended use specifications, it is difficult to distinguish between scientific research and commercial utilization purposes. Taxonomic research increases scientific knowledge by sampling and collecting organisms for the purposes of classifying and cataloguing biodiversity.⁴⁵ One risk for guidelines or legislation which fail to distinguish between taxonomic research and bioprospecting is that they will limit the acquisition of specimens acquired without the intention of commercially exploiting their genetic components. Equally, there is potential for abuse when genetic resources for which permission to access was given for taxonomic research purposes are subsequently employed for commercial ends. The practical application of the Bonn Guidelines should avoid hindering parallel progress by the COP on the Global Taxonomy Initiative.⁴⁶

Plant genetic resources for food and agriculture are already covered by an international treaty negotiated under FAO auspices. This instrument adapted and succeeded a non-binding one for which there were 113 adhering States. The former International Undertaking on Plant Genetic Resources professed that plant genetic resources were the 'heritage of mankind' to be available without restriction.⁴⁷ Three interpretative resolutions had also been adopted and annexed to it.⁴⁸ The first resolution recognized that plant breeders' rights were not necessarily inconsistent with the Undertaking. The second articulated the principle that farmers enjoyed rights to fully participate in the benefits derived from the improved use of plant genetic resources through plant breeding and other scientific methods. The final resolution affirmed sovereign rights over genetic resources, noted that farmers' rights would be implemented through an international fund and observed that access to plant genetic resources required clarification.

The FAO's Commission on Genetic Resources for Food and Agriculture undertook to re-negotiate the Undertaking to harmonize it with the CBD, to consider *ex-situ* collections not addressed by it, and to assert

farmers' rights.⁴⁹ The revised International Undertaking was unanimously adopted as a legally binding treaty in 2001. The centerpiece is a Multilateral System of Facilitated Access and Benefit Sharing for using and conserving the listed major food crops within the public domain for research, breeding and training.⁵⁰ In the event of the commercialization of products incorporating material accessed through the multilateral system, recipients contribute an equitable share of the monetary and other benefits to a designated trust mechanism. The treaty also realized farmers' rights but subordinated them to national law. Occupying some 7 years of negotiations, the treaty effectively trumped the Bonn Guidelines with legally binding measures. Plant genetic resources for food and agriculture are accordingly subject to differential requirements.

ACCESS TO GENETIC RESOURCES

Governments have adopted a variety of legislative measures for controlling access to genetic resources, such as amending existing sectoral frameworks which conserve other natural resources, implementing measures having other purposes but touching upon ABS, and building ABS provisions into broader biodiversity laws.⁵¹ Specific national laws have also been introduced by NGO initiative as products of consultative drafting processes involving a wide range of stakeholders.⁵² States which adopted such comprehensive regulations typically applied Article 15 broadly to also include derivatives.⁵³ National legislation may also provide for different procedural requirements depending upon the intended use or user's nationality.

Given that stand-alone ABS legislation is still in its infancy and few legislative frameworks have been wholly implemented, it is too early to make definitive conclusions concerning their practical effectiveness. As the Expert Panel considered that access legislation was only as good as the process through which it is developed, the issue was whether new laws were warranted or whether existing ones sufficed. African States in particular have sought to accelerate legislative developments.⁵⁴

⁴⁵ CBD, *Access and Benefit Sharing and the Global Taxonomy Initiative* (UN Doc UNEP/CBD/WG-ABS/1/INF/2, 2001).

⁴⁶ CBD Decision IV/1D (1998) and see Bonn Guidelines, n. 1 above, para. 34.

⁴⁷ Food and Agriculture Organization (FAO), International Undertaking on Plant Genetic Resources, 22nd Session of the FAO Conference (Rome, 1983) (UN Doc C83/REP, 1983), Resolution 8/83 and Annex.

⁴⁸ FAO Resolution 4/89, 25th Session of the FAO Conference (Rome, 1989); FAO Resolution 5/89, 25th Session of the FAO Conference (Rome, 1989); FAO Resolution 3/91, 26th Session of the FAO Conference (Rome, 1991).

⁴⁹ FAO Resolution 7/93, Revision of the International Undertaking on Plant Genetic Resources, 27th Session of the FAO Conference (Rome, 22 November 1993).

⁵⁰ International Treaty on Plant Genetic Resources for Food and Agriculture, adopted at the 31st Session of the FAO Conference (Rome, 2001), Articles 11–13.

⁵¹ CBD, *Access to Genetic Resources* (UN Doc UNEP/CBD/COP/3/20, 1996), para. 10.

⁵² See, for instance, Biodiversity Law No. 7788 (1998), Costa Rica, available at <<http://www.eelink.net/~asilwildlife/costa.pdf>>.

⁵³ CBD, *Review of National, Regional and Sectoral Measures and Guidelines for the Implementation of Article 15* (UN Doc UNEP/CBD/COP/4/23, 1998), paras 12 and 31.

⁵⁴ African Ministerial Conference on the Environment (AMCEN), *African Common Perspectives and Positions on the CBD* (Doc AMCEN/Conventions/CBD/1, 1994).

However, government measures under consideration or adopted existed in only 40 States. Additionally, evolving business practices reflected greater recourse to genetic materials from *ex-situ* collections.⁵⁵ On the other hand, legislation was considered desirable by firms to provide legal security for the transfer of genetic resources.⁵⁶

States have accordingly sought to evaluate their options for developing national legislative, administrative and other policy measures with a view to implementing their Article 15 obligations.⁵⁷ The COP has urged States to include measures to ensure the equitable sharing of benefits arising out of the use of genetic resources within national biodiversity strategies and legislation.⁵⁸ Since ABS agreements had hitherto been concluded by firms within a vacuum of unclear governmental competencies and no formal bioprospecting policies, the legal, political and administrative environment has, to date, not been 'propitious' to either the negotiation or implementation of fair and equitable arrangements.⁵⁹

Governments considered that, as further access legislation was being enacted and as a multiplicity of international regimes were emerging, the justification for guidelines to harmonize implementation of the CBD became imperative. The COP was also concerned that access legislation should be consistent with existing international obligations or could foreclose ongoing multilateral options that States may be simultaneously pursuing within other fora. Surveys suggested that existing legislation held different objectives to those envisaged under the CBD, and that many governments were reviewing regulatory measures. The proposal was therefore made at COP-2 in 1995 that States may wish to elaborate agreed guidelines or model legislation.⁶⁰ The rationale was that providing parties competing against others could withstand pressures to grant access on disadvantageous terms and access seekers would also benefit from standardized bureaucratic procedures.

As noted in its Preamble, the Guidelines are voluntary in nature and seek to assist both the development of national access legislation and contractual ABS arrangements. Although there is no obligation upon States to translate the Guidelines into national law, in

the interests of truly effective harmonization, legally binding measures would be necessary. However, voluntary industry codes and standardized MTAs may be more useful for private actors. Universal systems may not be appropriate where different industrial sectors pursue different ABS approaches. Nonetheless, the Guidelines are anticipated to be applied not merely by governments but also by other stakeholders. Admittedly their extensive participation gives credence to the view that the CBD's requirements of mutually agreed terms and PIC apply directly to all actors.⁶¹ However, direct implementation obviates both the paramount authority of national law and the government law-making role contemplated by Article 15. Accordingly, the World Conservation Union has called for national legislative measures to supplement the Bonn Guidelines.⁶² African States also envisage the Guidelines to be a precursor to an eventual international, legally binding instrument possibly in the nature of an adopted Protocol or Annex to the CBD.⁶³

BENEFIT SHARING

Fair and equitable benefit sharing is a complementary objective to sustainable use and conservation under Article 1 of the CBD, and constitutes the gateway to PIC, negotiated access and mutually agreed terms. Although Article 15 refers to environmentally sound uses rather than promoting conservation, companies are attracted to access partnerships where demonstrable conservation results assure continued supply and sustainable use. The biotechnology industry, for example, seeks to secure continued access to those genetic materials possessing medicinal, pharmaceutical or agricultural applications.⁶⁴ Reasonable and sustainable benefit sharing can therefore become an incentive for knowledge holders to conserve biological resources, alleviate poverty and develop economically.

Limited only by ingenuity, what is 'fair and equitable' is determined by national authorities and the parties to specific ABS arrangements.⁶⁵ As mutually agreed terms enable individual parties to identify what they consider to be 'fair and equitable', benefit sharing will be tailored to their specific value systems. However,

⁵⁵ CBD, *Assessment of User and Provider Experience, Identification of Approaches to Involvement of Stakeholders and Complementary Options* (UN Doc UNEP/CBD/EP-ABS/2/2, 2001), paras 15 and 59.

⁵⁶ World Resources Institute, *Biological Diversity* (WRI, 1997), at 4. See the website available at <<http://www.wri.org/wri/rio-5/rio5biod.html>>.

⁵⁷ CBD, *Report of the Third Meeting of the COP to the CBD* (UN Doc UNEP/CBD/COP/3/38, 1997), 29.

⁵⁸ CBD Decision III/9 (1996) on Implementation of Articles Six and Eight, para. 1.

⁵⁹ CBD, *Synthesis of Case-Studies on Benefit Sharing* (UN Doc UNEP/CBD/COP/4/Inf.7, 1998), paras 79–80, at 86.

⁶⁰ CBD, *Access to Genetic Resources and Benefit Sharing: Legislation, Administrative and Policy Information* (UN Doc UNEP/CBD/COP/2/13, 1995), paras 15 and 72.

⁶¹ *Ibid.*, para. 82.

⁶² IUCN, Policy Recommendations to the Sixth Meeting of the COP to the CBD (COP-6), Agenda Item 23: Access and Benefit Sharing as related to Genetic Resources (IUCN, 2002). See the website available at <http://www.iucn.org/themes/biodiversity/cop6/final_ABS.doc>.

⁶³ *Report of the Sixth Meeting of the COP to the CBD*, n. 2 above, para. 340; and see CBD, n. 3 above, Articles 28 and 30.

⁶⁴ WBCSD/IUCN, *Business and Biodiversity: A Guide for the Private Sector* (WBCSD/IUCN, 1997). See the website available at <<http://biodiversityeconomics.org/business/topics-04-00.htm>>.

⁶⁵ CBD, *Fair and Equitable Sharing of Benefits Arising from the Use of Genetic Resources* (UN Doc UNEP/CBD/COP/3/Inf.53, 1996), 8.

since complete autonomy over non-replicable ABS arrangements can render benchmarking this norm more difficult, standardizing benefit-sharing requirements is desirable for lowering negotiation costs and pre-empting disputes. Indeed, fairness and equity can be overridden by consent and mutually agreed terms. Accordingly, fair and equitable benefit sharing occurs where providers add value to products, respective capacities are equal, and minimum standards exist with respect to IPR and technology transfer.⁶⁶ Developing capacity also further increases the revenue that can be generated.

Best commercial practices in terms of marketplace transactions (and the consideration commonly offered) is one benchmark of what constitutes 'fair and equitable'. Prior to the CBD, companies bioprospected without any benefit sharing other than paying collection fees. Possibly on account of a stronger bargaining position for provider countries arising through greater awareness, several firms are concluding ABS agreements, notwithstanding that formal legal rules are not yet in place.⁶⁷ Accordingly, contracts and other mutually agreed arrangements lead the evolution of this legal concept. However, commercial confidentiality must be balanced against transparency and the need for information access by stakeholders in order to provide fair and equitable benefit sharing under market conditions. The biologically diverse resources depleted in southern countries to supply the demands of northern pharmaceutical industries has been estimated at US\$32 billion per annum.⁶⁸ On the other hand, given expensive and lengthy investment cycles, the probability is low that any given randomly collected sample will yield marketable products. As stated in Appendix 2 to the Bonn Guidelines, the monetary benefits arising from the commercial utilization of genetic resources include up-front and milestone payments, salaries, royalties, trust funds, access and collection fees, licence fees with preferential terms, joint ventures and research grants.

Moreover, variously timed benefits will arise, irrespective of whether a product finally emerges. 'Fair and equitable' goes beyond merely financial remuneration of exchange costs. As prescribed by Appendix 2 to the Bonn Guidelines, non-monetary benefits include access and transfer of technology 'under fair and most favourable terms', training and joint research, acknowledging sources, reporting research results, scientific cooperation,

information exchange, institutional capacity building, employment opportunities, and ongoing relationships. Appreciation of these benefits in addition to stewardship of genetic resources would increase if credible monetary values were available.

Benefit sharing is thus an integrated process directed at long-term partnerships involving all relevant stakeholders. Benefit-sharing mechanisms should be flexible and determined by the partners involved on an individual basis. Although there is no singularly correct allocation mechanism, the desired result is one which fairly reflects the contributions made. Appropriate beneficiaries are to be identified and institutional channels established through which benefits can be transferred. Relevant to capacity building, indigenous community groups and non-governmental stakeholders therefore need to be properly representative, accountable and possess sufficient legal personality entitling them to conclude contractual relationships, own property and receive funds. Trust funds established under the law of the host State are one method for distributing monetary benefits while avoiding direct cash payments. However, distributing revenue according to contribution will differentiate between producing and non-producing communities.

MUTUALLY AGREED TERMS

Negotiated access arrangements rather than legislation are the primary vehicles for obtaining access to genetic resources. Contracts between providers and users in the form of collection permits, memoranda of understanding, research agreements and cooperative partnerships clarify benefit-sharing obligations, record mutually agreed terms, build trust and promote mutual understanding. MTAs are often used for the exchange of genetic material on a contractual basis by the private sector irrespective of whether they envisage benefit sharing, whereas ABS arrangements are CBD compliant. During negotiations on the Bonn Guidelines, the EU, *inter alia*, espoused the view that transactions involving genetic resources should be harmonized and that full stakeholder participation was essential.⁶⁹ The Bonn Guidelines provide an indicative list of terms (Appendix 1) including limitations on use and the possibility of re-negotiation, with contractors expected to take into account ethical concerns.

Contractual arrangements can range from one contract including all stakeholders to a wheel of contracts involving various partners. Prospective actors include government agencies from both provider and user States, NGOs, indigenous communities, research

⁶⁶ CBD, *Options for Access and Benefit-Sharing Arrangements* (UN Doc UNEP/CBD/EP-ABS/2, 1999), para. 21.

⁶⁷ CBD, *Measures to Promote and Advance the Distribution of Benefits from Biotechnology in Accordance with Article 19* (UN Doc UNEP/CBD/COP/4/21, 1998), para. 37.

⁶⁸ IUCN, *Genetic Resources: International Fairness is a Conservation Tool*, Press Release (The Hague, 15 April 2002), available at <http://www.iucn.org/info_and_news/press/geneticres.pdf>.

⁶⁹ European Commission (EC), 'Council Conclusions in Preparation for the Sixth COP to the CBD in The Hague from 7 April to 19 April 2002', 3-2002 *EU Bulletin* (2002), point 1.4.22.

institutions and companies. Also noteworthy is the emergence of local intermediary firms acting as brokers who offer a package of related services including preliminary screening and extraction to commercial end users. Intermediaries facilitate access by ensuring that ABS laws and procedural requirements in provider countries are satisfied. As there is the potential for illegitimate or technically incompetent entities merely adding an unregulated bureaucratic layer, and thereby increasing transaction costs, many commercial end users prefer direct dealings with the ultimate provider.

The typical concerns of providers include a lack of control once the resources are outside the provider's jurisdiction and subsequent unapproved use. Primarily motivated by securing continuing access, users by contrast are concerned with the competence and capacity of providers. Industry also prefers legal clarity on their rights and responsibilities with respect to ownership, clearly defined access determination procedures including deadlines, and the identity of all authorized institutions for securing the necessary consents.⁷⁰ Mutual agreement between users and providers is seen as the route to reducing uncertainty, constructing mutual confidence and maintaining cooperative flexibility.⁷¹ However, when relationships between stakeholders, government agencies and local communities are unclear, or negotiations leave insufficient time for building trust, it is their bargaining positions which suffer.

Mutually agreed terms are closely related to PIC and fair and equitable benefit sharing. Access contracts are successful where benefit-sharing arrangements are tailored to individual circumstances and where processes ensure that consent is grounded upon mutual agreement. As 'mutually agreed terms' implies an expectation to negotiate, terms are mutually agreed upon where they are reciprocally accepted. However, mutually agreed terms can also undermine fair and equitable benefit sharing. It is difficult to discern a uniform 'fair' price for genetic resource transactions where institutions offer a package of resources and associated services. Confidentiality requirements characteristic of ABS agreements cover research results and commercially valuable information which holders have taken reasonable steps to protect (trade secrets). Mutually agreed terms thus turn upon bargaining power parity, information access, technical expertise and, ultimately, capacity building.

⁷⁰ European Chemical Industry Council (CEFIC), *The Chemical Industry Comments on the Legal Protection of Traditional Knowledge and Access to Genetic Resources – Patenting* (CEFIC, 2000), available at <http://trade-info.cec.eu.int/civil_soc/documents/meeting/me-4-trips_c10.pdf>.

⁷¹ CBD, *Report of the International Workshop on 'Best Practices' for Access to Genetic Resources* (Cordoba, 16–17 January 1998), submission by the EU and Germany (UN Doc UNEP/CBD/COP/4/Inf.10, 1998), at 4 and 6.

Contracts are established within a wide range of legal, administrative and policy contexts which mutually interact with each other. Legislation is essential for ensuring that contract negotiations serve the national policy goals of the providing State and faithfully implement CBD objectives. Market mechanisms need not guarantee that commercial actors will voluntarily protect the equitable rights of providers. Although NGOs have not been so constrained, governments have generally deemed it inopportune to develop guiding contractual principles given the enormous diversity in ABS arrangements and given the opinion that prescriptive legal tools would not achieve flexibility.⁷² Companies and research institutions have preferred voluntary codes as the most promising instruments for implementing practical incentives for further cooperation, such as technology transfer between users and providers.⁷³ In the absence of comprehensive access legislation and national biodiversity strategies, governments have generally concurred that voluntary industry measures can assist in realizing CBD objectives.⁷⁴ Accordingly, such measures are expected to supplement national law and support fair and equitable benefit sharing.⁷⁵ Prospective corporate codes could encompass the different categories of genetic resources (plant, animal or microbial), geographical areas or the treatment of derivatives and traditional knowledge.⁷⁶

With a view to encouraging marketplace transactions, incentive measures induce companies, communities and individuals to engage in contractual ABS arrangements at their own initiative, as contrasted with strict legal compliance. Incentive measures to encourage partnerships include efficient permitting procedures, stability and continuity in institutional and legislative arrangements, swift decision making, the easy availability of reliable information, and fiscal tools. To ensure the continued availability of samples, expedited access determinations for multiple requests minimize the burden of negotiating multiple agreements and reduce transaction costs.

⁷² Compare the contract between Diversa Corporation and the Costa Rican National Biodiversity Institute (INBio), and the Third World Network's Contract between the Collector and the Government: 'Diversa Signs Bioprospecting Agreement With the Institute of Biotechnology at the National Autonomous University of Mexico', *Business Wire* (6 November 1998), at 1073; G.S. Nijar, *Draft Model Law: Collectors of Biological Resources (Control and Licensing) Act* (1996), Schedule 1, available at <<http://www.lclark.edu/org/ielp/nijar1.html>>.

⁷³ CBD, *Access to Genetic Resources* (UN Doc UNEP/CBD/COP/5/21, 2000), para. 36.

⁷⁴ CBD Decision VI/26A, n. 11 above, para. 6.

⁷⁵ CBD, *Report of the Panel of Experts on Access and Benefit Sharing* (UN Doc UNEP/CBD/COP/5/8, 1999), paras 94 and 102–103.

⁷⁶ CBD, *Development of Draft International Guidelines on Access and Benefit Sharing: Other Approaches, Including the Development of an Action Plan for Capacity Building, Elements for Consideration in the Development of Guidelines and other Approaches for Access to Genetic Resources and Benefit Sharing* (UN Doc UNEP/CBD/WG-ABS/1/3, 2001), para. 12.

PRIOR INFORMED CONSENT

PIC, as the principal procedural basis for regulating international trade in hazardous waste, pesticides and chemicals, envisages information exchange, export notifications, global databases and the designation of national authorities. It commonly requires consent occurring before the activity in question, written documentation with full disclosure of realistically foreseeable risks and the informed consent of the relevant actor. As consent is construed strictly, applicants must supply the best current scientific and commercial information, providers must be permitted to request further particulars, and consent must state whether recipients are entitled to transfer material to third parties. The basic principles for PIC stipulated by the Guidelines include legal certainty and clarity, minimum cost, transparent restrictions, legal grounds and consistency with CBD objectives.

As to which actor provides consent, the terms 'unless otherwise determined' within Article 15(5) could suggest that if access measures are not instituted, then PIC is not required. Alternatively, access is restricted and PIC is required until a party legally determines otherwise. Although seeking to preserve the existing rights and obligations of contracting parties, the Bonn Guidelines suggest the latter approach, with PIC discharged by governments when designating a competent national authority to execute this function.⁷⁷ Alternatively, a national consultative committee contemplating processes for relevant stakeholder representation may be established, such as public notification and national assessment. Such a two-tiered approach involving governments at the national level (top down) and private individuals at the local one (bottom up) is reputed to empower democratically participatory institutions possessing rights to control access. Stakeholder participation produces more effective and sustainable results but increases transaction costs. However, given the disparate interests of stakeholders, there is generally no automatic entitlement to inclusion, and mechanisms are designed on a case-by-case basis.

In respect to what specific purpose consent shall be given, the ultimate use and value of materials may not be predictable when PIC is sought. The Bonn Guidelines provide that permitted uses should be clearly stipulated, with unforeseen and intended changes of use requiring a renewed application of PIC and mutually agreed terms.⁷⁸ The alternative – that PIC covers a broad range of circumstances for any possible future use – was apparently not pursued during final negotiations. Although enforcement difficulties and sources of dispute are foreseeable, voluntary compliance

may permit subsequently easier access and simplified PIC procedures.

PROTECTING TRADITIONAL KNOWLEDGE

To the extent possible, and subject to national law, CBD parties are to respect and preserve the knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles, to promote their wider application and to encourage equitable benefit sharing.⁷⁹ Traditional knowledge is that body of knowledge built up through generations by a group of people living in close proximity to nature and manifested by practices in which tradition filters human innovation.⁸⁰ The orthodox industrialized tool for awarding individuals limited rights of exclusivity as a reward for creative social contributions – IPR – also seeks to promote the open disclosure and free exchange of valuable information.

However, existing IPR protection mechanisms are considered inadequate for protecting indigenous and local community collective traditional biodiversity-related knowledge.⁸¹ IPR protect individual rights for a limited duration where patent applicants can demonstrate novelty (an inventive step or non-obviousness) and industrial applicability (usefulness). However, traditional knowledge is typically created informally in a cumulative and incremental manner over a period of time, held collectively and transmitted inter-generationally within ancestral communities. In order to limit concentrations of economic power, IPR systems are specifically not designed for inter-generational protection. Moreover, one obstacle to patent applications is the fact that traditional knowledge is transmitted orally and frequently not documented (the inaccessibility of prior art). Existing IPR systems may also violate indigenous cultural precepts by encouraging the commodification of such knowledge, their appropriation for commercial use and their possible erosion.

Whereas contracts only impose legal controls upon signatories, IPR control all those within the jurisdiction, including third parties, where the right is recognized. However, together they need not accomplish fair and equitable benefit sharing.⁸² Traditional knowledge

⁷⁹ See CBD, n. 3 above, Article 8(j).

⁸⁰ CBD, *Note prepared for the Workshop on Traditional Knowledge and Biological Diversity* (UN Doc UNEP/CBD/TKBD/1/2, 1997), at 17–23.

⁸¹ See, for instance, UN, Commission on Human Rights, Sub-Commission on Prevention of Discrimination and Protection of Minorities, Working Group on Indigenous Populations, *Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples* (Geneva) (UN Doc E/CN.4/Sub.2/AC.4/1993/CRP5).

⁸² CBD, *The Impact of Intellectual Property Rights Systems on the Conservation and Sustainable Use of Biological Diversity and on the Equitable Sharing of Benefits from its Use: A Preliminary Study* (UN Doc UNEP/CBD/COP/3/22, 1996), para. 45.

⁷⁷ Bonn Guidelines n. 1 above, paras 15, 25 and 26(d). But note paras 24, 28.

⁷⁸ *Ibid.*, paras 34, 44(b), (e) and Appendix 1(B)(3).

tends to provide sources of insight and thus valuable lead time for researchers. Commercially valuable inventions typically result from the research and development which builds upon traditional knowledge within developed States, rather than the contributions made by communities living alongside biological resources within developing countries. Hence, traditional knowledge *per se* may not qualify as a sufficiently novel and inventive step involving human innovation. Moreover, indigenous communities may be unable to afford proprietary technology and may not be equitably compensated beyond mere collection fees at a level commensurate with their contribution to product development.

Options for protecting traditional knowledge include modifying existing IPR systems, recognizing indigenous customary legal systems within national law or developing *sui generis* protection based upon existing models.⁸³ Governments such as India, Turkey, Namibia and Ecuador favour the latter approach and inter-governmental workshops have recommended designing such systems.⁸⁴ However, national *sui generis* systems may provide insufficient protection where traditional knowledge is located within multiple States. For its part, the chemical industry advocates creating *sui generis* rights under WIPO auspices prior to enshrining them within the WTO.⁸⁵ Alternatively, publishing traditional knowledge within registers or databases prevents exclusive rights by destroying the novelty required by patent or trade secret applications and thereby protecting community knowledge.⁸⁶ This may be one means by which indigenous communities retain control where the information exists within the public domain.

CAPACITY BUILDING

The Expert Panel correctly identified capacity building as the 'essence' of ABS under the CBD, and called for its operation in light of individual national requirements.⁸⁷

⁸³ See, for instance, WIPO, '1982 Model Provisions for National Laws on the Protection of Folklore from Illicit Exploitation and Other Prejudicial Actions', *Intellectual Property in Asia and the Pacific* (WIPO Doc No. 435(E), 1998); The 1978 International Convention for the Protection of New Varieties of Plants as administered by the Union for the Protection of New Varieties of Plants (UPOV) (Paris, 2 December 1961).

⁸⁴ COP Decision V/26B (2000), para. 1; CBD, Inter-Sessional Meeting on the Operations of the Convention (UN Doc UNEP/CBD/COP/5/4, 2000), Annex, recommendation 3, para. 7; CBD, *Report of the International Workshop on Traditional Knowledge and Biological Diversity* (Madrid, 24–28 November 1997) (UN Doc UNEP/CBD/TKBD/1/3, 1997).

⁸⁵ CEFIC, n. 70 above.

⁸⁶ See, further, WIPO, *Inventory of Existing Online Databases containing Traditional Knowledge Documentation Data* (WIPO Doc WIPO/GRTKF/IC/3/6, 2002).

⁸⁷ CBD, *Report of the Panel of Experts on Access and Benefit Sharing on the Work of its Second Meeting* (UN Doc UNEP/CBD/WG-ABS/1/2, 2001), paras 47, 112.

In this light, bioprospecting is beneficial for provider countries where sustainably harvested raw materials can be provided or value is added to genetic resources. Initiatives range from mere conservation, initial collecting and primary screening (where comparative advantages exist by virtue of location or cost) to strengthening institutional, technological, and research and development capacity for more advanced processes (depending upon the availability of capital and skill). Already undertaken by over 100 States, the first priority is to conduct a taxonomic assessment of biological resources and an inventory of both traditional knowledge and existing regulatory frameworks, with a view to formulating an effective national biodiversity strategy.⁸⁸

The Bonn Guidelines are expected to enable biodiversity-rich countries to increase their share of commercial benefits and to create incentives to conserve and sustainably utilize their genetic resource base. Formed in 2002, the Group of Like-Minded Megadiverse Countries – consisting of Bolivia, Brazil, China, Columbia, Costa Rica, Ecuador, the Philippines, India, Indonesia, Kenya, Malaysia, Mexico, Peru, South Africa and Venezuela – *inter alia*, seeks to construct national regulatory capacity.⁸⁹ The United Nations Environment Programme for its part is willing to assist them in that task.⁹⁰ Possible measures include building consensus among stakeholders, designing access legislation, creating national conditions conducive to fair and equitable benefit sharing, facilitating project financial sustainability, introducing incentive measures and encouraging entrepreneurs within local communities.⁹¹

Although responsibility for regulating access lies principally upon source country governments, this should not become an excuse for user countries to shirk responsibility for the conduct of their nationals, particularly given the failure to secure political consensus on a liability regime for transboundary biodiversity damage during CBD negotiations. To a significant degree, the Bonn Guidelines shift the burden for acquiring PIC on mutually agreed terms onto commercial users, even where that entails private parties

⁸⁸ CBD, *Access and Benefit Sharing as Related to Genetic Resources, Addendum: Recent Developments on Access and Benefit Sharing* (UN Doc UNEP/CBD/COP/6/19/Add.1, 2002), para. 11.

⁸⁹ Like-Minded Megadiverse Countries, Cancun Declaration (18 February 2002); and Cusco Declaration (29 November 2002) on Access to Genetic Resources, Traditional Knowledge and Intellectual Property Rights. See the website available at <<http://www.comunidadandina.org/ingles/document/cusco29-11-02.htm>>.

⁹⁰ K. Toepfer, UNEP, Speech at the Sixth Meeting of the COP to the CBD (The Hague, 7 April 2002), at 3. See the website available at <<http://www.unep.org/documents/default.asp?documentid=247&articleid=3127>>.

⁹¹ CBD, *Addressing the Fair and Equitable Sharing of the Benefits Arising out of Genetic Resources: Options for Assistance to Developing Country Parties to the CBD* (UN Doc UNEP/CBD/COP/4/22, 1998).

directly complying with its terms rather than the governments who adopted it.⁹² Capacity building for genetic resource providers thus necessitates arming them with tools to ensure bargaining power parity, fair attribution and proportional rewards. Traditional knowledge holders require technical skills training for negotiating contracts, legal drafting and protection against unfair terms.⁹³

COP-6 decided to convene an Open-Ended Expert Workshop on Capacity Building composed of experts nominated by governments, NGOs and indigenous communities to further develop elements of an appropriate action plan.⁹⁴ Draft elements identified at COP-6 include funding through the Global Environmental Facility, technology transfer and information exchange. Implementation mechanisms thus contemplate, *inter alia*: scientific and technological cooperation; disseminating best practice; developing model agreements and codes of conduct for specific uses, users and sectors; establishing an expert roster; and increasing awareness raising. Governments, inter-government organizations, NGOs, indigenous and local communities, and the private sector have duly contributed submissions.⁹⁵ This preliminary survey suggested that capacity building involved developing national access and benefit-sharing regimes rather than enhancing scientific expertise, information management or funding.⁹⁶ Having met in Montreal in December 2002, the Expert Workshop is yet to propose an appropriate action plan.

ENFORCEMENT

Providers and users of genetic resources, typically located within different States, are subject to differing legal, administrative and political systems. Nonetheless, as one facet of intended harmonization, the Expert Panel assumed a degree of pre-existing 'legislative simplicity' to the extent that recipient States could offer the requisite legislative, administrative or political security

to providers.⁹⁷ Controlling the utilization of genetic resources after they leave the providing State would otherwise prove difficult. Monitoring adherence to the provider's access conditions will also be problematic where benefits are long term, product development occurs outside the country of origin and biotechnology requires ever smaller sample quantities. In the event of non-compliance, possible sanctions include paying penalty fees, claiming compensation, unilaterally withdrawing consent, repossessing permits or licences, impounding materials and terminating continued supply. Voluntary verification mechanisms such as certification schemes could also be developed and stakeholders could be provided with direct judicial remedies. However, these measures fall short of confiscation and return. Accordingly, States may adopt 'appropriate effective and proportionate measures' under paragraph 61 of the Bonn Guidelines by way of remedy.

It is by no means straightforward to adjudge non-compliance with the weak behavioural standards espoused under the Guidelines. Users are to 'respect' customs, traditions, values and customary practices of indigenous communities and 'as much as possible endeavour' to use genetic resources with the participation of providing countries.⁹⁸ Similarly, providers should only supply genetic resources and/or traditional knowledge when 'entitled' to do so and should 'strive' to avoid arbitrary access restrictions.⁹⁹ Moreover, ensuring that users negotiate ABS arrangements on the basis of PIC and mutually agreed terms consistent with the Guidelines, and maintain respect for the national law of the country of origin when using genetic resources, also contemplates particular extra-territorial dimensions. However, legal constraints applicable to users within their home States may conflict with the benefit-sharing regulations of the providing country. For example, firms may be obligated to grant preferential licences to other nationals or to transfer financial benefits only to other legally constituted entities. The Bonn Guidelines do not attempt to resolve such regulatory conflicts. Effective mechanisms are also yet to be developed for monitoring the post-access use of national genetic resources within the jurisdiction.

It must be noted that the enforcement role need not fall exclusively to governments. Governments may broker agreements on behalf of local groups, establish laws which guide commercial transactions or monitor compliance at a distance. The national government role ranges between impartial gatekeeper or adviser to active participant and beneficiary. Governments have repeatedly been called upon to designate national

⁹² Compare the responsibilities of users (Bonn Guidelines, n. 1 above, para. 16(b)(i) and (v)) with those of countries of origin (para. 16(a)), providers (para. 16(c)) and contracting parties with users within their jurisdiction (para. 16(d)). See further para. 59 concerning dispute settlement.

⁹³ WIPO, *Report on Intellectual Property Needs and Expectations of Traditional Knowledge Holders* (WIPO, 2001), 278.

⁹⁴ CBD Decision VI/24B (2002) on Other Approaches Including the Development of an Action Plan for Capacity Building.

⁹⁵ CBD, *Compilation of Submissions on Needs and Priorities of Parties and Information on Existing Initiatives on Capacity Building for Access and Benefit Sharing* (UN Doc UNEP/CBD/ABS/EW-CB/1/INF/2, 2002).

⁹⁶ CBD, *Capacity Building for Access to Genetic Resources and Benefit Sharing: Synthesis of Submissions Received on Needs, Priorities and Existing Initiatives and Additional Elements for Consideration in the Development of an Action Plan* (UN Doc UNEP/CBD/ABS/EW-CB/1/2, 2002), para. 57.

⁹⁷ CBD, n. 75 above, para. 94.

⁹⁸ See Bonn Guidelines, n. 1 above, para. 16(b)(ii), (vii).

⁹⁹ *Ibid.*, para. 16(c)(i), (ii).

focal points and competent national authorities to administer PIC procedures and to oversee ABS arrangements.¹⁰⁰ The expectation that governments will protect individuals, communities and organizations from undue influences is less likely where conflicts of interest arise. Although the Bonn Guidelines envisage governments establishing accountability mechanisms for all stakeholders including reporting and disclosure requirements, collection institutions and indigenous communities can also facilitate compliance monitoring.¹⁰¹

As genetic resource exchanges may not be limited to simple user-provider relationships, relevant rights and responsibilities must survive contractual expiration and be transferable to third parties upon conditions which are no less restrictive. Although States not party to the CBD are formally not bound to the ABS provisions, their nationals may become so when acting as third parties to such transactions. Relevant to compliance with trade commitments, States may elect to restrict access to non-party nationals on the basis that access is one of the interwoven reciprocal obligations created by the CBD. Treaty regime conflicts would involve claims in one forum that a State has violated its obligations countered by a defence that the alleged violation constituted implementation of a co-existing instrument. Rights and obligations deriving from other international agreements prevail over the CBD, except where their exercise would seriously damage or threaten biological diversity.¹⁰² In light of desirable complementarity with relevant international agreements and institutions, paragraph 10 of the Bonn Guidelines provides that they are to be applied in a 'coherent and mutually supportive' manner.

Where provider countries enjoying similar biodiversity have lower or no standards, users will select States where benefit-sharing requirements are less onerous. Regional cooperation is thereby warranted to ensure that providers do not competitively undercut each other and accept arrangements on less favourable terms. Although regional framework agreements have been established by African, Andean and south-east Asian States, further empirical work is desirable to assess their effectiveness.¹⁰³ Supra-national systems

also bolster the governmental bargaining position by pooling scientific and technological capacity, provided adherence can be maintained.

In the interim, the legal measures of States with users within their jurisdiction should complement the applicable access legislation of providing countries.¹⁰⁴ Notably, IPR applications signify an intent to claim a commercial application and proprietary interest. COP-6 observed that provisions to ensure the recording of contributions to inventions, such as disclosing the country or geographical origin in IPR applications, exist within several States. Furthermore, some States require evidence of PIC for using genetic resources or the traditional knowledge, innovations and practices of local indigenous communities pertaining to conservation and sustainable use as a precondition for granting patents.¹⁰⁵ Although a majority of patent laws within States do not currently include any such provisions as to the source of genetic resources, the number contemplating this proposal is growing.¹⁰⁶ Accordingly, COP-6 invited governments to adopt this measure as a contribution to tracking compliance with PIC on mutually agreed terms.¹⁰⁷ Indeed, Brazil, China, Ecuador, India and Zambia, among others, are proposing this measure as a possible TRIPS amendment, and are nominating evidence of fair and equitable benefit sharing as another precondition for patent applications under national laws.¹⁰⁸ However, as acknowledged by the Bonn Guidelines, disclosing the country of origin in IPR applications is just one possible method for securing compliance by users within a jurisdiction.¹⁰⁹ Alternatives include inter-governmental cooperation, voluntary and internationally recognized certificate of origin systems, measures discouraging unfair trade practices, and disclosure within health product approval applications.

Association of South East Asian Nations Working Group on Nature Conservation and Biodiversity (ASEAN AWGNCB), Draft Framework Agreement on Access to Biological and Genetic Resources (Philippines, 1998), SEA-21-02-00. See the website available at <http://www.arcbc.org.ph/new/workshops/regional/sea_21_02_00.htm>.

¹⁰⁴ Global Biodiversity Forum, Workshop on Instruments for Access and Benefit Sharing from Genetic Resources, 15th Session (Nairobi, 2000); see the website available at <[http://www.gbf.ch/Session_Administration/upload/workshop_conclusions_and_recommendations\(2\).pdf](http://www.gbf.ch/Session_Administration/upload/workshop_conclusions_and_recommendations(2).pdf)>.

¹⁰⁵ For instance, EC Directive 98/44/EC of 6 July 1998 of the European Parliament and of the Council on the Legal Protection of Biotechnological Inventions, para. 27.

¹⁰⁶ CBD, *Report on the Role of Intellectual Property Rights in the Implementation of Access and Benefit-Sharing Arrangements* (UN Doc UNEP/CBD/WG-ABS/1/4, 2001), para. 14.

¹⁰⁷ CBD Decision VI/24C (2002) on the Role of Intellectual Property Rights in the Implementation of Access and Benefit-Sharing Arrangements, paras 1 and 2.

¹⁰⁸ TRIPS Council, *The Relationship Between the TRIPS Agreement and the Convention on Biological Diversity and the Protection of Traditional Knowledge*, submission by Brazil (WTO Doc IP/C/W/356, 2002).

¹⁰⁹ See Bonn Guidelines, n. 1 above, para. 55(c).

¹⁰⁰ The UK national focal point is located within the Department for the Environment, Food and Rural Affairs (DEFRA) and as at 11 December 2002 the competent national authority was yet to be established. See the website available at <http://www.defra.gov.uk/Science/GeneticResources/Introduction/Intro_AboutFocal.htm>.

¹⁰¹ See Bonn Guidelines, n. 1 above, paras 52–56.

¹⁰² See CBD, n. 3 above, Article 22(1).

¹⁰³ Organization of African Unity (OAU), *Declaration and Draft Model Legislation for the Recognition and Protection of the Rights of Local Communities, Farmers and Breeders and for the Regulation of Access to Biological Resources* (OAU Doc OAU/AEC/TD/MIN/7(iii), 1998), Annex III; M. Rosell, 'Access to Genetic Resources: A Critical Approach to Decision 391 "control regime on access to genetic resources" of the Cartagena Agreement', 6:3 *RECIEL* (1997), 274;

OVERALL ASSESSMENT AND OUTSTANDING ISSUES

Negotiations on the Bonn Guidelines continued a pattern established with respect to the extraction and commodification of natural resources from areas previously designated as the common heritage of humanity. Unrealistic expectations of the potential economic contributions made by bioprospecting to national competitiveness and technological development, in addition to the reality of commercial bargaining power, are also associated with assertions of national sovereignty over seabeds and lunar minerals. Such considerations will propel the legal regime which ultimately will emerge. The resulting patchwork of hard and soft law instruments – conventions, legislation, contracts and codes – poses greater complexity for the legal environment and several key opportunities were wittingly or otherwise missed. Negotiations steered a path between existing and emerging instruments to render the Bonn Guidelines compatible and such that other options were not precluded. Sector-specific guidelines exist to provide additional assistance to users for implementing CBD provisions with respect to microbial genetic resources.¹¹⁰ The Bonn Guidelines are thus part of a package of complementary measures including voluntary codes of conduct, model agreements, guidelines formulated by other organizations, national access legislation, performance indicators and information exchange mechanisms such as the CBD clearing house.

The impetus to formulate multilateral guidelines, before national legislation was too prevalent, posed considerable information deficits in terms of its prospective ambit. Although the Bonn Guidelines assist parties whose regulatory capacity is limited, they are also premature to the extent that the genetic resources market remains underdeveloped. The objective of harmonization will be undermined where subsequent national legislative, administrative or policy measures are inevitably tailored to the particular circumstances, institutional arrangements and competencies of individual States. Collaborative and competitive law making by inter-governmental organizations and between international and national bodies – processes in which non-State actors may participate – can inspire formal cooperative linkages or hinder legal developments by capturing the regulatory field. Given these parallel tracks within multiple fora, law-making functions can be directed towards various participants, including private contractors, as indicated by their respective mandates, specialties and enforcement prospects.

¹¹⁰ The Micro-Organisms Sustainable Use and Access Regulation International Code of Conduct (MOSAICC) (2000). See the website available at <<http://www.belspo.be/bccm/mosaicc>>.

Governments and private actors are yet to be fully acquainted with the novel CBD ethic sought to be exemplified by the Bonn Guidelines. PIC, as a precondition to access, encroaches upon areas such as applicable land tenure systems. Bottom-up approaches envisage the direct participation of indigenous communities and elevate their status within national contexts. Benefits are shared fairly and equitably with 'stakeholders' and not merely with 'rights' holders. IPR regimes encourage holders to share their proprietary 'rights' and indigenous communities are not precluded from customary usage on communal terms. Customary use includes spiritual and ceremonial dimensions in addition to the more strictly economic and subsistence functions.¹¹¹ Such innovative elements will emerge in practice before being concretized as legal standards.

In particular, the ABS and PIC provisions of the CBD do not apply to *ex-situ* collections located outside the country of origin and acquired prior to its entry into force.¹¹² *Ex-situ* conservation facilities include botanical gardens, zoos, genebanks, microbiological resource centres, universities and research institutes. Although the origins are known for only 25% of the world's germplasm, around 75% are maintained within botanical gardens in Europe and the USA. The risk is that provisions relating to *in-situ* genetic resources can be circumvented by approaching institutions holding *ex-situ* collections, thereby bypassing the State from which they were originally acquired. However, several governments are concerned that issues declared during CBD negotiations to be excluded from its remit should not be revisited.¹¹³ Around 4.4 million accessions are currently within *ex-situ* storage, of which 50% are held by developed countries, 38% by developing countries and 12% by the International Agricultural Research Centres.

The FAO considers that solutions to *ex-situ* collections should be sought within its Global System for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture.¹¹⁴ The *ex-situ* collections of 12 International Agricultural Research Centres of the Consultative Group on International Agricultural Research (CGIAR) have, by agreement, been placed under FAO auspices.¹¹⁵ Centres hold designated germplasm in trust for the benefit of the international community within the FAO's International

¹¹¹ CBD, n. 80 above, para. 101. Compare also CBD, n. 3 above, Article 10.

¹¹² See CBD, *ibid.*, Article 15(3).

¹¹³ CBD, *Report of the Fourth Meeting of the COP to the CBD* (UN Doc UNEP/CBD/COP/4/27, 1998), para. 223.

¹¹⁴ CBD, *FAO Global System for Plant Genetic Resources for Food and Agriculture* (UN Doc UNEP/CBD/COP/2/18, 1995), para. 54.

¹¹⁵ Consultative Group on International Agricultural Research (CGIAR), *Annual Report 1993–1994* (CGIAR, 1994); CGIAR, *Centres' Position Statement on Genetic Resources, Biotechnology and Intellectual Property Rights* (CGIAR, 1998), attachments 1 (CGIAR's Ethical

Network of *Ex-Situ* Germplasm Collections. They undertake not to claim legal ownership or IPRs over the collections, but to make samples directly available without restriction.¹¹⁶ An earlier voluntary instrument contemplated a permitting system and delineated the minimum responsibilities of collectors, sponsors, curators and users.¹¹⁷ The seed industry through the International Association of Plant Breeders for the Protection of Plant Varieties (FIS/ASSINEL) is willing to participate with in-kind contributions in response to the NGO call in Leipzig during 1996 for a commitment to agricultural biodiversity.¹¹⁸

Botanical gardens and the UK Government have formulated non-legally binding principles and common policy guidelines pursuant to which 28 participating institutions undertake to treat genetic resources and their derivatives acquired prior to the entry into force of the CBD in the same manner as those acquired thereafter.¹¹⁹ When obtaining access *ex-situ* sources where no applicable national law exists, these institutions will make 'reasonable and sincere efforts' to ascertain that materials were obtained in accordance with the CBD and best practice.¹²⁰ Furthermore, the institutions will, to the extent possible, also share the benefits arising from the use of materials acquired prior to and after the entry into force of the CBD in the same manner.¹²¹ PIC will be reasonably and sincerely obtained from bodies governing *ex-situ* collections and any additional consents as required. Finally, when transferring genetic resources between participating institutions, written agreements will oblige recipients not to pass genetic resources to third parties without ensuring that these parties also conclude agreements containing conditions which are no less restrictive. Guidelines formulated by a German botanical network

build upon this framework and envisage an international seeds and plants exchange system, whereby the non-monetary benefits arising from the non-commercial use of plant genetic material are shared between all gardens.¹²² By voluntarily going beyond CBD terms, private actors are obviating the problem of legal retrospectivity which constrains government action.

Since 1992, several matters remain unresolved (definitions, *ex-situ* collections and the CBD-TRIPS relationship), some are still subject to scrutiny (protecting traditional knowledge and capacity building), and others are further obfuscated (enforcement roles and user responsibilities). Details for prospective elaboration include the stakeholder concept, how indigenous and local communities are defined (geographically, ethnically or politically), and how far benefit sharing extends (individually, regionally or nationally). Further drafting is necessary to formulate model transfer agreements for different types and uses, performance indicators which measure the fairness and equity of ABS arrangements, and umbrella arrangements pursuant to which repeated requests for access can be expedited. Following COP-6, governments decided to develop strategies, in conjunction with indigenous communities, to protect traditional knowledge subject to national law based upon a combination of IPR mechanisms, *sui generis* systems, customary law, contractual arrangements, registers, guidelines and codes of practice.¹²³ Furthering what COP-6 should have finalized before adoption of the Bonn Guidelines, the second meeting of the Ad Hoc Open-ended Working Group – rescheduled for December 2003 – will consider the use of terms, measures to ensure compliance with PIC and mutually agreed terms by users within the jurisdiction, capacity-building needs and the merits of other approaches. As the Guidelines are only a 'useful first step' for interpreting Article 15, they will have to be revised as experience dictates.¹²⁴ It can be expected (and hoped) that COP-7 in Malaysia in 2004 marks the formal beginning of that 'evolutionary process'.

Principles Relating to Genetic Resources) and 2 (Agreement between CGIAR's Centres and the Food and Agriculture Organization of the UN (FAO) Placing Collections of Plant Germplasm under the Auspices of FAO). See the website available at <<http://www.worldbank.org/html/cgiar/publications/mtm98/mtm98gen.pdf>>.

¹¹⁶ CGIAR, *Position Statement*, *ibid.*, attachment 6 (Guiding Principles for the Consultative Group on International Agricultural Research Centres on Intellectual Property and Genetic Resources).

¹¹⁷ FAO Resolution 8/83 on an International Code of Conduct for Plant Germplasm Collecting and Transfer, 27th Session (Rome, 1983).

¹¹⁸ NGO Conference on Access and Control of Agricultural Biodiversity, The Leipzig Commitment to Agricultural Biodiversity, 'Toward a Peoples' Plan of Action' (Leipzig, 14–16 June 1996). See the website available at <<http://www.twinside.org.sg/title/lei-cn.htm>>.

¹¹⁹ CBD, *Results of the Pilot Project for Botanic Gardens: Principles on Access to Genetic Resources and Benefit Sharing, Common Policy Guidelines to Assist with their Implementation and Explanatory Text*, text submitted by the UK Government (UN Doc UNEP/CBD/WG-ABS/1/INF/1, 2001)

¹²⁰ F. Latorre Garcia *et al.*, *Results of the Pilot Project for Botanic Gardens: Principles on Access to Genetic Resources and Benefit Sharing, Common Policy Guidelines to assist with their Implementation and Explanatory Text* (Royal Botanic Gardens – Kew, 2001), Common Policy Guidelines, para. 5.1.3.

¹²¹ *Ibid.*, para. 9.1.2.

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¹²² EU Consortium of National Networks of Botanic Gardens, *Access and Benefit Sharing System for Botanic Gardens*, Information Document prepared for COP-6 of the CBD (2001), at 2. See the website available at <http://www.absfocalpoint.nl/NLpolicies/ABSsystemdescription_EU_gardens.pdf>.

¹²³ CBD Decision VI/10 (2002), section F, paras 33 and 41.

¹²⁴ See Bonn Guidelines, n. 1 above, Preamble, paras 6 and 7.