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Background document on an overview of recent activities on indicators on access and benefits sharing (ABS) under relevant multilateral agreements including indicator proposals

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Contents

1. Purpose of this document

This document sets out to give an overview of recent activities on indicators on access and benefits sharing (ABS) under relevant multilateral agreements including indicator proposals.

2. Executive summary

In spite of it being at the heart of both the Convention on Biological Diversity and the International Treaty on Plant Genetic Resources for Food and Agriculture (FAO 2010), the implementation of the equitable sharing of the benefits arising from the utilization of genetic resources is still very fragmented and faced with many practical, economic and legal barriers (Young 2005). Indeed, a degree of consensus exists in relation to the fact that one of the areas (if not the most important area) where less progress has been made is in compliance, enforcement and oversight as part of the overall access to genetic resources and benefit-sharing regime (*ABS*) (Ruiz and Lapeña 2007).

Not until 2010 when the Nagoya Protocol was adopted at the 10th Conference of Parties to the Convention on Biological Diversity and opened for signature did a comprehensive framework exist to regulate the equitable sharing of the benefits arising from the utilization of genetic resources neither within the UN, nor outside.

The Nagoya Protocol specifically aims to regulate (IEEP, Ecologic, and GHK Consulting 2012a):

- Access to genetic resources;
- Sharing of benefits arising from the utilization of such resources;
- Access to traditional knowledge associated with such resources;
- Sharing of benefits arising from the utilization of such knowledge.

In the context of global and EU biodiversity policy and legislation the search for an indicator (or set of indicators) to assess the development of access and benefit sharing by the EU and its Member States have focused on:

- The signature and ratification of the Nagoya Protocol as a measure to indicate the integration of the protocol in national and EU policy and legislation (Biodiversity Indicators Partnership)
- The number and proportion of patent requests based on genetic resources as a measure to demonstrate the socio economic importance of biodiversity (EEA 2010)

Up to present 24 of the 27 Member States have signed the Nagoya Protocol and none has ratified it. Only one country in Europe (Albania) has ratified the protocol (see Table 14).

Although many organisations are in some way directly involved in or concerned by various aspects of access and benefit sharing, surprisingly few have developed ways to measure the progress made in implementing it.

It seems that one of the main barriers to developing a comprehensive indicator to measure the progress in implementation of ABS policy is the lack of a centralised register of transactions regarding plant and animal (genetic) materials at national, regional or global level. Although several mechanisms such as certification of origin, documented prior informed consent (PIC) or mutually agreed terms (MAT) regarding a shared resource could be used as quite direct measure to assess the progress made in ABS policy, no such central record at national or international level exists.

For the time being, therefore, the use of various proxies as indicators seems to be the way forward. The problem remains with the assessment of non-recorded transactions which could well represent the major part of all trade.

Table 1 offers an overview of all indicators directly or indirectly related to ABS that were identified in the search. The second column should be read in connection with Table 2. It indicates to which ABS themes (as presented in Figure 1) each of the indicators is related.

Table 1 Summary table of identified ABS indicators

Indicator(s)	ABS theme	Source / Organisation
To be developed		Global Biodiversity Outlook, Convention on Biological Diversity
Patent applications based on genetic resources (to be developed)	E1, E2, E2, G1	SEBI 2010, European Environmental Agency
Proportion of countries with appropriate national legislation (to be developed)	C2	Developing Ecosystem Services Indicators UNEP-WCMC
Dollar value of benefits shared (to be developed)	F1, F2	
Number of products with appropriate agreements (to be developed)	A1, A2, D1, D2	
Red List of Medicinal Plants (to be developed)	A1, A2	
Cumulative number of signatures and ratifications to the Nagoya Protocol	C1, C2	Biodiversity Indicators Partnership (BIP)
Global Trade in Plants (and many more, user defined queries)	A1, A2, C1, C2, F1	CITES Trade Data Dashboards
Implementation of the Bonn Guidelines into national legislation	C1, C2	Biodiversity Action Plan Report 2010, European Union
Awareness raising about the Bonn Guidelines	C1, C2, E1, E2, E3	
Implementation of MATs into national legislation	C1, C2, E1, E2, E3	
Awareness raising about the MATs	C1, C2, E1, E2, E3	
Provision of funds for the CBD Access & Benefit-	C1, C2	

Indicator(s)	ABS theme	Source / Organisation
sharing Working Group		
To be developed		International Treaty on Plant Genetic Resources for Food and Agriculture
Signed VPAs and other agreements on forest products	D1, D2	Making the Forest Sector Transparent, Global Witness
Legal right to free Prior and Informed Consent	D2	
Level of knowledge and awareness of Intellectual Property Rights among community members	B, C1	Cultural Indicators of Indigenous Peoples food and agro-ecological systems
Protection mechanisms in place for traditional knowledge and innovation	B, C1	
Support for indigenous capacity, leadership, policy and programme development by state and indigenous governance, including number of programs and persons participating in and completing training	B, C1, C2	
Participation in the creation of protected areas and management of forest concessions	B, C1	
Number of development programs that involve collaborative partnerships with participating community (co-management)	B, C1, C2, E2	
Number of development activities that include free, prior and informed consent	B, C1, C2	
Legislation to regulate access to genetic resources and benefit sharing	E1, E2, E3	
Companies reporting on biodiversity sourcing practices	G1	Biodiversity Barometer, Union for Ethical Biotrade
Companies mentioning biodiversity related issues like traditional knowledge and intellectual property rights	G1	
National ABS frameworks operational score	C2	GEF tracking tool, Biodiversity Strategy
Sales of Fair Trade Products	C1, F1, F2, G1	Annual Report, Fairtrade Foundation (UK)
Conservation area under the management of the BioTrade organization	F2	BioTrade Impact Assessment System (BT IAS) - UNCTAD BioTrade Initiative
Conservation and sustainable use of in situ biodiversity (wild species)	A1	
Usage or harvest rates of resources are defined according to the species characteristics (wild species)	A1, G2	
Environmental sustainability of the ex situ production systems	A2	
Level of use of toxic or dangerous substances in agricultural practices	A2	
Average annual income for actors at the first stage of the value chain involved in BioTrade	C1, F1, F2	
Employment generated by the BioTrade	C1, F1	

Indicator(s)	ABS theme	Source / Organisation
organization at the producer level (first stage of the value chain)		
Annual sales of the BioTrade organization	F1, G1	
The BioTrade organization has established partnerships with suppliers that comply with BioTrade requirements of traceability, inclusion, transparency and fair pricing	C1, E1, E2, E3, D1, D2	
Level of compliance with legal requirements and adoption of additional social and environmental responsibility activities	D1, D2, F2	

Table 2 shows that most indicators address providers and users. Uses, benefits and agreements are the themes that are least covered by the indicators.

Table 2 Themes of the ABS framework (see Figure 1) and frequency of coverage by indicators (see Table 1)

ABS theme	Code for reference in Table 1)	frequency
genetic resources - in situ	A1	5
genetic resources - ex-situ	A2	5
traditional knowledge	B	6
providers - states	C1	17
providers - competent national authorities	C2	12
Mutually agreed terms	D1	4
Prior informed consent	D2	5
users - industry	E1	6
users - university	E2	8
users - research	E3	5
monetary benefits	F1	6
non-monetary benefits	F2	5
commercial uses	G1	5
non-commercial uses	G2	1

3. Introduction

I. Access and benefit-sharing (ABS) policy

The "fair and equitable sharing of benefits arising out of the utilization of genetic resources" is one of the three overall objectives of the *Convention on Biological Diversity (CBD)*, along with "the conservation of biodiversity" and "the sustainable use of the components of biodiversity" (CBD 2002). The principles and obligations of Parties related to the access and sharing of benefits of genetic resources are set out in Article 15 of the convention on the basis of *prior informed consent (PIC)* and *mutually agreed terms (MAT)*.

The *CBD* establishes that a person or institution seeking access to genetic resources in a foreign country should seek the *prior informed consent* of the country in which the resource is located. Moreover, the person or institution should negotiate and agree on the terms and conditions of access and use of this resource. This includes the sharing of benefits arising from use of this resource with the provider as a prerequisite for access to the genetic resource and its use.

Conversely, countries, when acting as providers of genetic resources, should create conditions to facilitate access to their genetic resources for environmentally sound uses and not impose restrictions that run counter to the objectives of the *CBD*.

Genetic resources, whether from plant, animal or micro-organisms are used for a variety of purposes ranging from basic research to the development and commercialisation of products. Users of genetic resources include research and academic institutions, and private companies operating in various sectors such as pharmaceuticals, agriculture, horticulture, cosmetics and biotechnology.

There are two major conventions that regulate the access and benefit sharing of biodiversity. The Convention on Biological Diversity and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), by which countries agree to establish a multilateral system of access and benefit sharing to facilitate access to plant genetic resources for food and agriculture, and to share the benefits in a fair and equitable way (Article 10) (FAO 2007).

II. The Nagoya Protocol on Access and Benefit Sharing

After five years of negotiations, the *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization* (hereafter referred to as the Protocol) was adopted by the Conference of the Parties to the Convention on Biological Diversity at its tenth meeting on 29 October 2010 in Nagoya, Japan. It provides a transparent legal framework for the effective implementation of one of the three objectives of the *CBD*: the fair and equitable sharing of benefits arising out of the utilization of genetic resources. The Protocol covers with few reasonable exceptions genetic resources and traditional knowledge associated with genetic resources, as well as the benefits arising from their utilization by setting out core obligations for its contracting Parties to take measures in relation to access, benefit-sharing and compliance (Biodiversity Indicators Partnership).

The drafting of the Protocol was a response to the lack of effective and efficient measures or regimes on access and benefit sharing (ABS) were in place (IEEP, Ecologic, and GHK Consulting 2012b).

The Nagoya Protocol was opened for signature by *CBD* parties between 2 February 2011 and 1 February 2012. In March 2013, it had been signed by 92 states. The *CBD* Strategic Plan 2011-2020[1] (Aichi Target 16) foresees the Protocol to be in force and operational in 2015, but some signatories hope for an earlier entry into force (IEEP, Ecologic, and GHK Consulting 2012b).

The Protocol will enter into force on the ninetieth day after the date of deposit of the 50th instrument of ratification, acceptance, approval or accession (Article 33). In March 2013, protocol had been ratified by 15 parties.

[1] www.cbd.int/decision/cop/?id=12268

III. Implementation of Access and Benefit Sharing

Although it is recognised as one of the three main pillars of the *CBD*, *ABS* is still very poorly and incompletely implemented. Progress that is made internationally and by Party States is not clear. The patchy implementation of policies, laws and regulations makes it difficult to keep track of any progress being made.

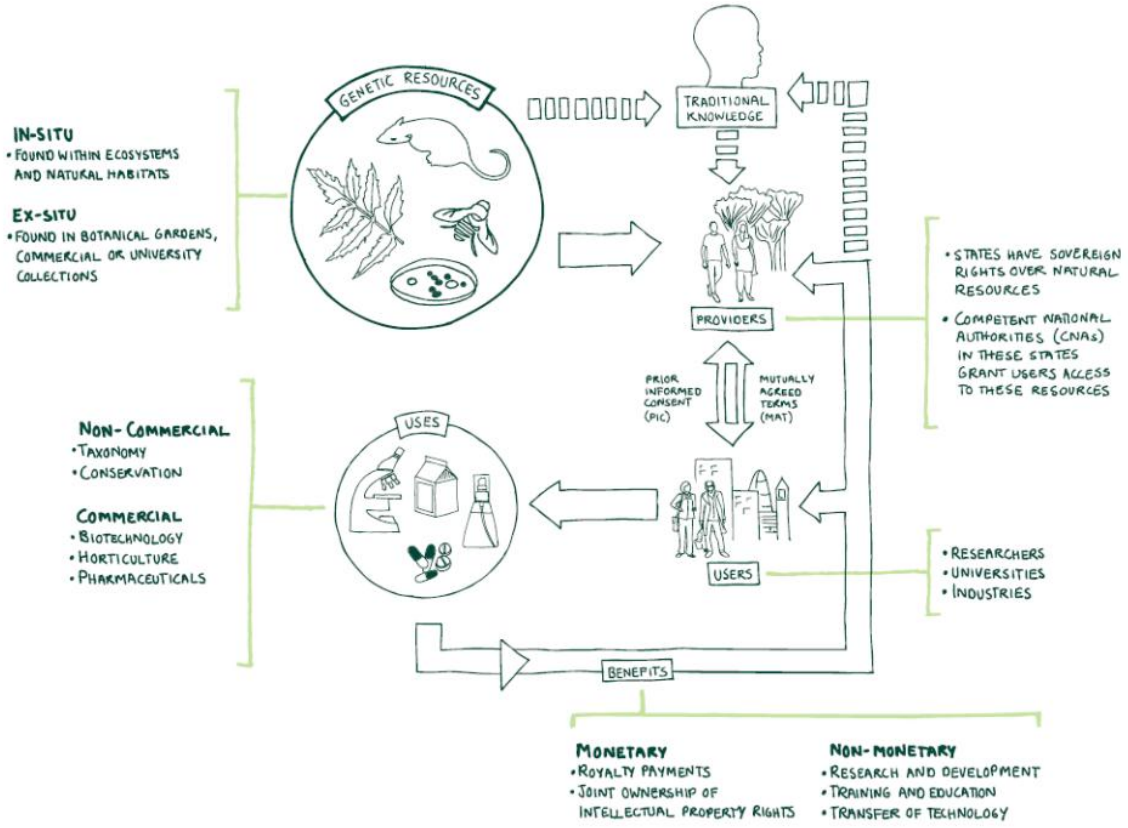


Figure 1 Key themes on Access and Benefit Sharing (CBD 2012)

Of the various aspects of *ABS*, the sharing of benefits seems the most difficult to address at the present time. Although national authorities do implement policies to regulate the access to the genetic resources of their country and communities living therein, the actual complexity of the matter (both practical and legally speaking) makes it a daunting task. Also the expected important economic returns associated with genetic resources have not materialised (Ruiz and Lapeña 2007).

The CBD provides little detail on how access and benefit-sharing (ABS) for the use of genetic resources and associated traditional knowledge should be done in practice. Particularly industrialized country Parties have been reluctant to adopt measures supporting effective benefit-sharing of their researchers and companies. As one consequence, some provider countries have established increasingly restrictive conditions for access to genetic resources or associated traditional knowledge. At the same time and in the absence of clear rules, European researchers and companies have been accused of 'biopiracy' by countries claiming a violation of their sovereign rights.

These problems have seriously undermined global progress to conserve and sustainably use biological diversity; not least since states that are considered as 'biodiversity-hotspots' stand to gain the most from an effective ABS framework (European Commission 2012).

Despite such a history of sporadic and largely limited involvement in ABS policy discussions, there is increasing engagement by users of genetic resources in CBD forums. This is especially pronounced within the pharmaceutical, biotechnology, and seed sectors (CBD 2008). Many sectors and stakeholders recognise the need to regulate and monitor the access to biodiversity and the need to regulate the fair sharing of the benefits it provides. Right from the first years after the entry into force of the CBD, several sectors and stakeholder groups recognised their responsibility and/or their interest and developed sector specific guidance and voluntary codes of conduct in order to improve the implementation of the ABS target of the CBD. These initiatives continued and were further encouraged after the publication of the Bonn Guidelines in 2002 and the adoption of the Nagoya Protocol in 2010.

Sectors, stakeholders and interest groups having developed such initiatives include:

- Miocrobiological research: MOSAICC code of conduct (BCCM 2011)
- Botanical gardens: (Kew Botanic Gardens n.d.; IPEN 2003; Davis 2008)

IV. Access and benefit-sharing in the EU and its Member States

The European Union and its Member States, as a Parties to the *CBD* are required to implement the obligations of Article 15 on *ABS*. In order to measure progress with the implementation of ABS, a headline indicator on Access and Benefit Sharing has been introduced in the SEBI 2010 process. The European Union has signed the Nagoya Protocol on 23 June 2011. 25 of its 27 Member States have signed it, but none has ratified it as yet (see Table 14).

The European Commission has proposed a Regulation (European Union 2012) establishing rules governing access and benefit sharing for genetic resources and traditional knowledge associated with genetic resources to enable the Union to ratify the Nagoya Protocol and formally become a Party. The system of EU measures for implementing the Nagoya Protocol is mainly based on the Union's environment competence. The Union and each of its Member States must be able to demonstrate compliance with all Protocol obligations before formally joining the Nagoya Protocol (European Commission N.D.).

4. Method

The information for this report was mainly collected through a targeted internet search, starting with a review of the existing EU Headline indicator on *ABS* (*SEBI Headline indicator 24: Patent applications based on genetic resources*) and the Headline Indicator of the Biodiversity Indicators Partnership (*Cumulative number of signatures and ratifications to the Nagoya Protocol*). From there the research concentrated on the different mechanisms under the Convention on Biological Diversity, and in particular the Bonn Guidelines on Access and Benefit Sharing, adopted at the Sixth Ordinary Meeting of the Conference of the Parties to the Convention on Biological Diversity (The Hague, Netherlands, 7 - 19 April 2002) and the Nagoya Protocol on Access and Benefit Sharing.

The following multilateral agreements and international platforms and processes that that are directly or indirectly concerned with (an aspect of) access and benefit sharing have been reviewed for their possible ABS indicator relevance:

- Convention on Biological Diversity CBD
- International Treaty on Plant Genetic Resources for Food and Agriculture, ITPGRFA
- Convention on International Trade in Endangered Species of Wild Fauna and Flora, CITES
- Ramsar Convention on Wetlands
- United Nations Declaration on the Rights of Indigenous Peoples
- The World Trade Organization WTO
- The Convention for the Protection New Varieties of Plants UPOV
- The World Intellectual Property Organization WIPO
- World Health Organisation WHO
- International Labour Organisation ILO

A first draft of the document was circulated for. The search continued by the use of an increasingly detailed and focused string of key words, used in various combinations. The search zoomed in specifically on the international treaties and conventions directly or indirectly relevant to the theme of access and benefit sharing. As the search for ABS indicators among the multilateral agreements did not provide many useful results, the focus gradually shifted to other international initiatives, programmes and organisations.

5. A review of existing indicators of Access and Benefit Sharing

V. Introduction

In the following paragraphs existing indicators directly and specifically developed to monitor the implementation of ABS are reviewed. We also include a number of other indicators that could be used to measure progress in terms of ABS, as well as some existing datasets that could be used to develop future indicators.

VI. Global Biodiversity Outlook – Convention on Biological Diversity

The Global Biodiversity Outlook is the flagship publication of the Convention on Biological Diversity. Drawing on a range of information sources, including National Reports, biodiversity indicators information, scientific literature, and a study assessing biodiversity scenarios for the future, the Global Biodiversity Outlook summarizes the latest data on status and trends of biodiversity and draws conclusions for the future strategy of the Convention.

The first Global Biodiversity Outlook (GBO 1) describes target 3 of the CBD and the challenges in implementing it but it does not provide any specific quantitative information about the state of progress in the form of an indicator. The second Global Biodiversity Outlook (GBO 2) from 2006 gives some more information about the state of progress regarding the implementation of ABS, although it is very descriptive and presented in terms of options and possibilities.

Table 3 Extract from table 4.1. "Prospects for achieving the targets of the framework for assessing progress towards the 2010 Biodiversity Target" (Secretariat of the Convention on Biological Diversity 2006)

PROTECT TRADITIONAL KNOWLEDGE, INNOVATIONS AND PRACTICES		
GOAL 9: Maintain sociocultural diversity of indigenous and local communities.		
9.1	Protect traditional knowledge, innovations, and practices.	The long-term decline in traditional knowledge is likely to continue given demographic, cultural and socio-economic trends. However, measures could be taken to reduce the rate of decline.
9.2	Protect the rights of indigenous and local communities over their traditional knowledge, innovations, and practices, including their rights to benefit sharing.	The target is achievable but depends on political will, nationally and internationally, and on building capacity among indigenous and local communities and stakeholders.
ENSURE THE FAIR AND EQUITABLE SHARING OF BENEFITS ARISING OUT OF THE USE OF GENETIC RESOURCES		
GOAL 10: Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources.		
10.1	All access to genetic resources are in line with the Convention on Biological Diversity and its relevant provisions.	The target is achievable but depends on political will, nationally and internationally, and on building capacity among stakeholders.
10.2	Benefits arising from the commercial and other utilization of genetic resources shared in a fair and equitable way with countries providing such resources in line with the Convention on Biological Diversity and its relevant provisions.	The target is achievable but depends on political will, nationally and internationally, and on building capacity among stakeholders.

Only in the third GBO 3 (2010) some indication is given about the progress made with the implementation of ABS worldwide. It acknowledges the slow pace of progress made and the difficulty to measure the state of implementation of the different aspects of ABS. Indeed in the overall table of headline indicators, ABS is represented by a question mark, and the development of a useful (set of) indicators is recognised as a priority.

Table 4 Extract from the table "Status of agreed subsidiary targets to 2010 biodiversity target" (Secretariat of the Convention on Biological Diversity 2010)

Sustainable use		
↗↙	**Area of forest, agricultural and aquaculture ecosystems under sustainable management**	There are considerable efforts under way to increase the extent of areas of land under sustainable management. Regional efforts on sustainable forest management are expected to contribute to this. Traditional agricultural practices are being maintained and revitalized as the demand for ethical and healthy products increases. However, these are still relatively small niches and major efforts are required to substantially increase the areas under sustainable management. ❄
↗	**Ecological footprint and related concepts**	The ecological footprint of humanity is increasing. Efforts at increasing resource efficiency are more than compensated by increased consumption by a growing and more prosperous human population. ❄❄❄
Status of traditional knowledge, innovations and practices		
↘	**Status and trends of linguistic diversity and numbers of speakers of indigenous languages**	A large number of minority languages are believed in danger of disappearing, and linguistic diversity is very likely declining. ❄ (although case studies with a high degree of certainty are available)
Status of access and benefit sharing		
?	**Indicator of access and benefit-sharing to be developed**	The need and possible options for additional indicators are being examined by the Ad Hoc Open-ended Working Group on Access and Benefit-sharing.
Status of resources transfers		
↗	**Official development assistance (ODA) provided in support of the Convention**	The volume of ODA for biodiversity has increased over the past few years. ❄❄❄

↗↙ Negative changes ↗ Positive changes ↗↙ No clear global trend. Positive and negative changes are occurring depending on the region or biome considered ? Insufficient information to reach a definitive conclusion.

Degree of certainty: ❄ Low ❄❄ Medium ❄❄❄ High

The GBO3 presents two aggregated indicators illustrating the state of progress with ABS implementation as part of Goal 10 of the CBD 2010 Biodiversity Target. Acknowledging that the goal 10.1 on the regulation of transfer of genetic resources to be in line with the provisions of the *CBD* and the *ITPGRFA* had not been met, it noted however that there had been an increasing number of *MTAs* developed under the treaty although no quantitative indicator is given. Similarly benefit sharing was observed not to have been adequately implemented by 2010, although the prospects were that the 2010 deadline for the agreement on an ABS protocol would change things for the better.

Table 5 Status of agreed subsidiary targets to 2010 biodiversity target (Secretariat of the Convention on Biological Diversity 2010)

Goal 10. Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources		
	10.1: All transfers of genetic resources are in line with the Convention on Biological Diversity, the International Treaty on Plant Genetic Resources for Food and Agriculture and other applicable agreements.	Not achieved globally but increasing number of material transfer agreements have been developed under the Treaty.
	10.2: Benefits arising from the commercial and other utilization of genetic resources shared with the countries providing such resources.	Not achieved globally. There are few examples of the benefit arising from the commercial and other utilization of genetic resources being shared with the countries providing such resources. This can be partially attributed to the fact that the Access and Benefit Sharing Regime was being developed from 2002, when the biodiversity target was adopted, until 2010, the deadline set by the CBD for final agreement on this issue.

No trend or progress in the implementation of ABS can therefore be derived from the comparison of the 3 GBO publications.

VII. Developing Ecosystem Services Indicators - UNEP-WCMC

Also in the context of the UN, a workshop on "Developing Ecosystem Service Indicators: Experiences and lessons learned from sub-global assessments and other initiatives" came up with a list of potential indicators that could be developed to measure the progress with the implementation and operationalisation of the Nagoya Protocol (UNEP-WCMC, 2011).

The review of ecosystem services identified the following indicators related to *ABS*:

1. Indicators related to Nagoya protocol on *ABS*
2. Conservation programmes for genetic resources, using in-situ and ex-situ conservation methods (*ABS*)
3. Proportion of countries with appropriate national legislation
4. Dollar value of benefits shared
5. Number of products with appropriate agreements
6. Red List Index of medicinal plants

Table 6 Indicators for the Aichi Target 16 suggested by workshop participants, November 2010 (UNEP-WCMC 2011)[2]

Strategic Goal	Target	Indicator	Ecosystem Service Group
Goal D: Enhance the benefits to all from biodiversity and ecosystem services.	Target 16: By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.	Proportion of countries with appropriate national legislation	Cultural/ Provisioning
		Dollar value of benefits shared	Cultural/ Provisioning
		Number of products with appropriate agreements	Cultural/ Provisioning
		Red List Index of medicinal plants[3]	Cultural/ Provisioning

This report found no evidence that in the meantime these suggested indicators have been developed.

VIII. Cumulative number of signatures and ratifications to the Nagoya Protocol - Biodiversity Indicators Partnership (BIP)

The Biodiversity Indicators Partnership (BIP)[4] developed an indicator to the Headline Indicator "*Trends in access and equity of benefit sharing of genetic resources*" as formulated by the Ad Hoc Technical Expert Group Meeting on Indicators for the Strategic Plan for Biodiversity 2011-2020.

The indicator supports the CBD Strategic Goal "*D. Enhance the benefits to all from biodiversity and ecosystem services*" and the Aichi Biodiversity Target 16: "*By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.*"

[2] The table of ecosystem service indicators is presented largely un-edited as a resource for use in further discussion. Attention to different targets was uneven during workshop discussions and so this should not be considered an exhaustive list or comparable between targets. It should also be noted that the table does not include an extensive list of readily available provisioning services measures, since the intention was to highlight indicators for under-emphasised services.
[3] http://ec.europa.eu/environment/nature/conservation/species/redlist/index_en.htm
[4] http://www.bipindicators.net

Rationale

The indicator illustrates the cumulative number of signatures and ratifications to the Nagoya Protocol. The Protocol was opened for signature by the Parties to the Convention from 2 February 2011 to 1 February 2012. The Protocol will enter into force 90 days after the date of deposit of the fiftieth instrument of ratification. As such for this target to be met, 50 countries must ratify the Protocol by October 2015 at the latest.

The Nagoya Protocol is operational, consistent with national legislation: The Nagoya Protocol, to be operational, will require that certain enabling conditions are met at the national level for its effective implementation. In particular, countries will need, depending on their specific circumstances, to revise legislative, administrative or policy measures already in place or develop new measures in order to meet the obligations set out under the Protocol. Countries will also need to determine the institutional structure needed for implementing the Protocol.

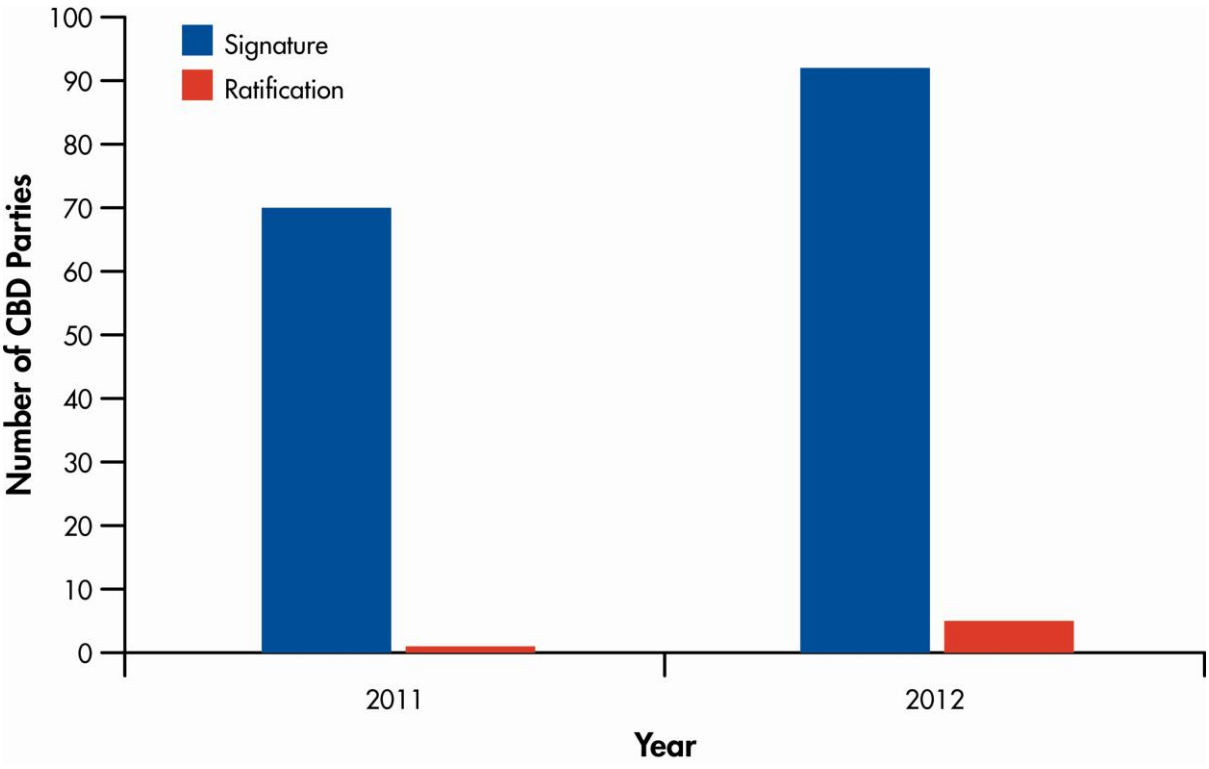


Figure 2 Cumulative number of signatures and ratifications to the Nagoya Protocol

How to interpret the indicator

The *Ratification status of the Nagoya Protocol* indicator directly measures progress towards the entry in force of the protocol by 2015. It monitors how many countries have ratified the Nagoya Protocol and thereby committed to meet the obligations set out in it.

Main advantages

The calculation is straightforward based on information readily available from the CBD Secretariat[5].

Main limitations

This indicator only gives a global indication of the progress towards the implementation of the Nagoya Protocol. It does not allow measuring and comparing the progress by and between individual countries. At the same time, it cannot measure the importance of the particular country with respect of its involvement into the global ABS process (e.g., the United Kingdom v. Yemen).

Suggestions for downscaling the BIP Indicator to assess aggregated regional trends

A broad indication of the progress of Europe as compared to the other continents of the world could be assessed.

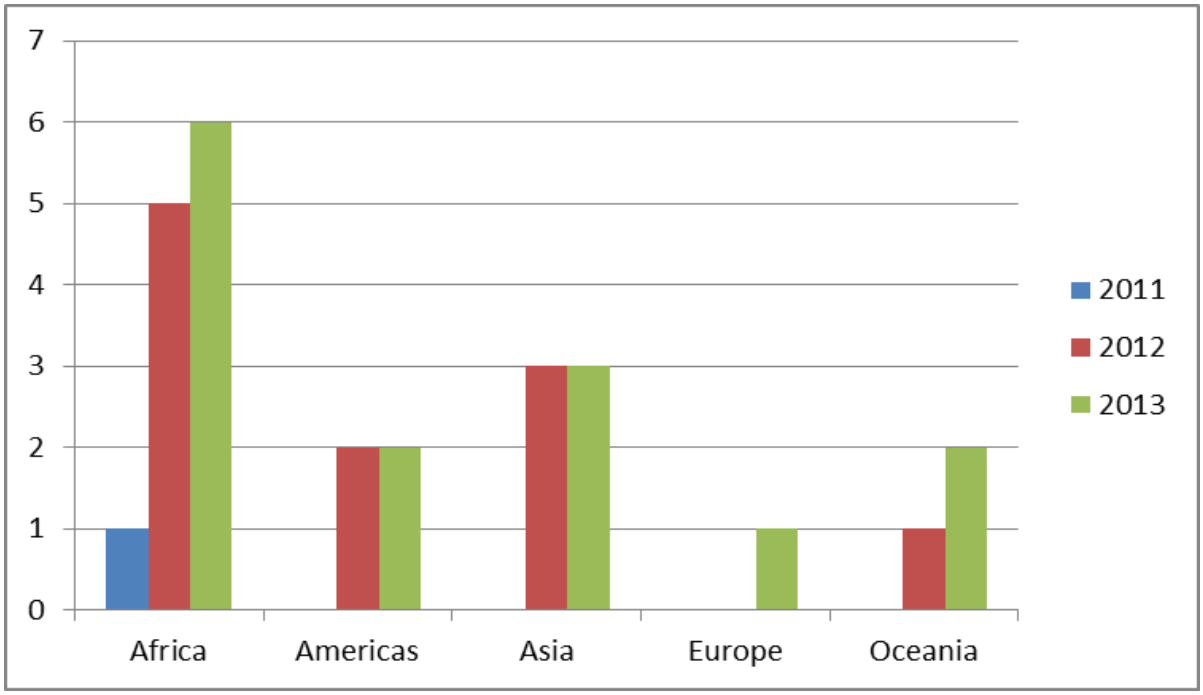


Figure 3 Cumulative number of signatures and ratifications to the Nagoya Protocol per continent (ECNC, data source: www.cbd.int)

Figure 3 shows that Africa and Asia, whose countries might perhaps benefit most from the entry into force and implementation of the Nagoya Protocol are ahead of Europe, the Americas and Oceania in terms of ratifying the Protocol.

[5] http://www.cbd.int/abs/progress/

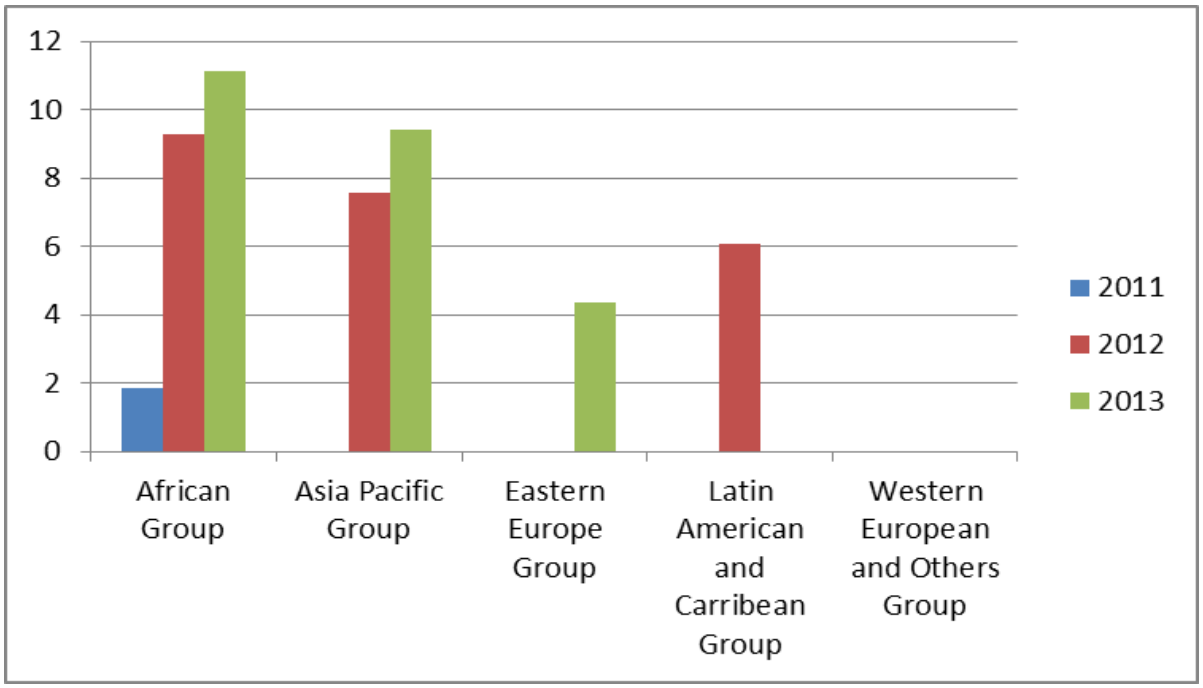


Figure 4 Cumulative number of instruments of ratification per regional group, expressed as percentage of the number of countries in that group

Figure 4 shows the progress made with the ratification of the Nagoya Protocol per UN World Regional Group (http://en.wikipedia.org/wiki/United_Nations_Regional_Groups), expressed in percentage of the total number of countries within each region. It shows that by 2013 11% of the African countries had ratified the Protocol, whereas none of the Western European countries had yet done so.

IX. BioTrade Impact Assessment System (BT IAS) - UNCTAD BioTrade Initiative

The BioTrade Initiative was launched by the United Nations Conference on Trade and Development (UNCTAD) in 1996 to promote sustainable BioTrade in support of the objectives of the Convention on Biological Diversity.

Its mission is to promote trade and investment in biological resources to further sustainable development in line with the three objectives of the Convention on Biological Diversity (CBD). It frames the implementation of its activities within the global conservation and development objectives established under the Millennium Development Goals, the Commission on Sustainable Development, the CBD, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the United Nations Convention to Combat Desertification and the Ramsar Convention on Wetlands (UNCTAD 2012).

The concept of BioTrade refers to those activities related to the collection, production, transformation and commercialization of goods and services derived from native biodiversity (species and ecosystems) under the criteria of environmental, social and economic sustainability. To complement it, UNCTAD, together with national and international partners defined seven BioTrade principles and their respective criteria. The principles and criteria can be applied in different contexts, driving BioTrade processes and programmes to promote the conservation of biodiversity through sustainable commercial use.

The BioTrade Impact Assessment System (BT IAS) has been conceived as an information management tool that partners can access through the Internet to obtain information and/or to enter data into the system (Figure 5). As much as possible, the BT IAS intends to build on the existing information and activities already implemented by partners. BioTrade partners will compile the information in the field based on the agreed indicators and datasheets, as part of their monitoring and evaluation systems. For other partners who have developed or will develop their database systems, the process would be to establish linkages to share information already available (e.g. UEBT, GEF/CAF/UNEP project).

As a result, the system will then compile and process all the data received to prepare reports on the impact of BioTrade worldwide. These reports can be used, for instance, to show the impact of BioTrade to beneficiary governments, donors and MEAs (CBD, CITES and the 2010 Biodiversity Indicators Partnership [BIP]) while identifying areas for improvements.

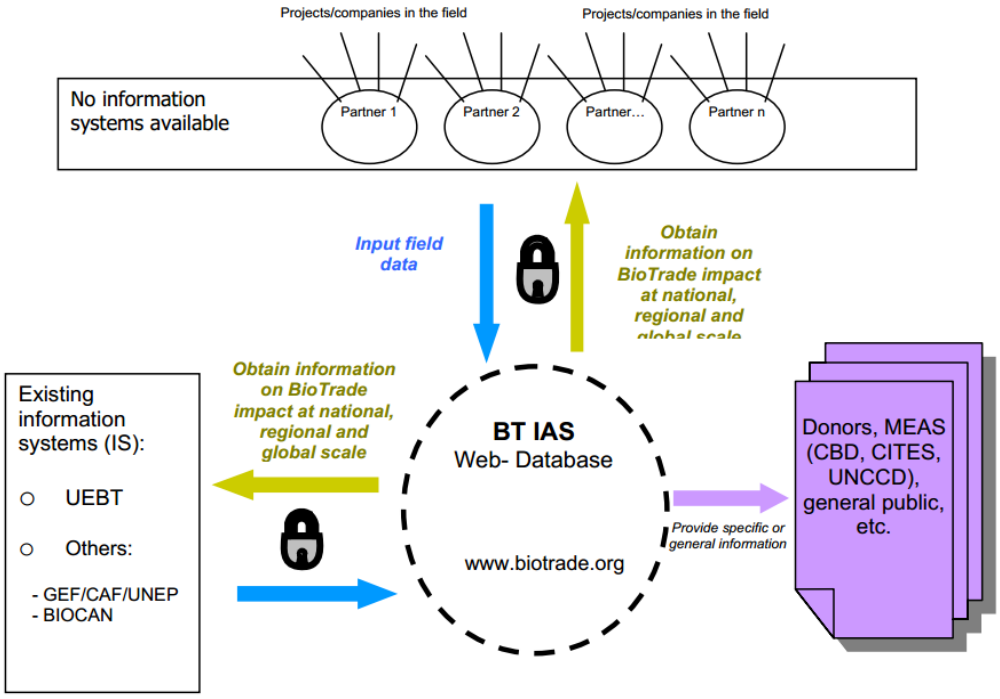


Figure 5 BT IAS information system (source: L. Jaramillo, UNCTAD)

As a result of an extensive consultative and participatory process with all BioTrade practitioners and programmes, the following ten indicators were agreed as part of the BT IAS.

Table 7 List of agreed BT IAS indicators (UNCTAD 2012)

INDICATOR
Environmental indicators
1.1 Conservation area under the management of the BioTrade organization
1.2 Conservation and sustainable use of in situ biodiversity (wild species)
1.3 Usage or harvest rates of resources are defined according to the species characteristics (wild species)
1.4 Environmental sustainability of the ex situ production systems
1.5 Level of use of toxic or dangerous substances in agricultural practices
Social indicators
2.1 Average annual income for actors at the first stage of the value chain involved in BioTrade
2.2 Employment generated by the BioTrade organization at the producer level (first stage of the value chain)
2.3 Annual sales of the BioTrade organization
2.4 The BioTrade organization has established partnerships with suppliers that comply with BioTrade requirements of traceability, inclusion, transparency and fair pricing
Governance indicator
3.1 Level of compliance with legal requirements and adoption of additional social and environmental responsibility activities

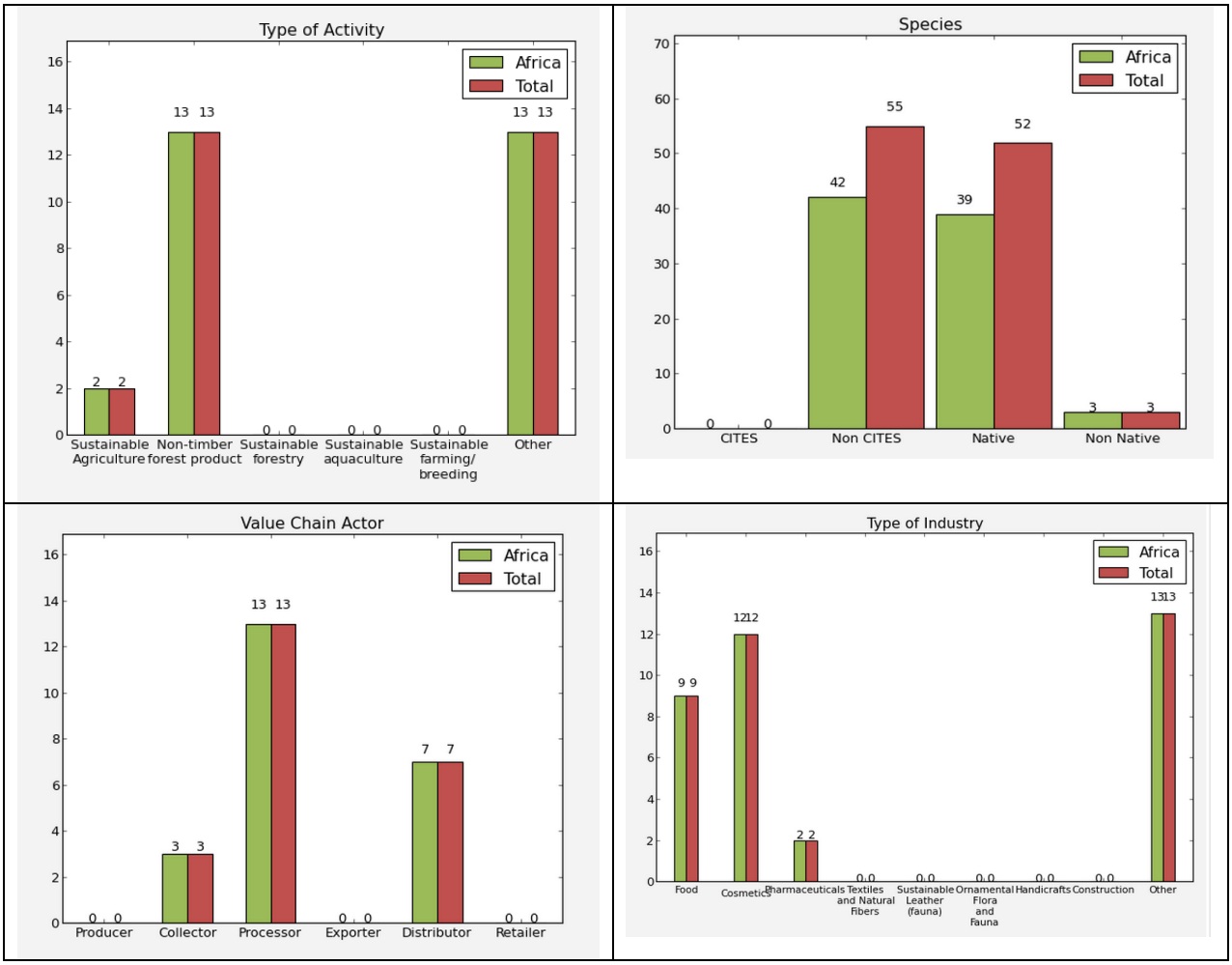
As BioTrade activities are being implemented worldwide, there is a constant need to define and measure its contribution to sustainable development and the conservation/sustainable use of biodiversity in a harmonized and structured manner. To address this need, UNCTAD developed the BTIAS considering its three basic approaches:

- value chain
- adaptive management
- ecosystem.

The BTIAS comprises guidelines for partners to understand the concept of the system, as well as technical sheets per indicator to measure and track the social, environmental and economic impact of their activities. The system includes ten indicators, divided into environment (5 indicators), socio-economic (4 indicators) and governance (1 indicator) and can be implemented for BioTrade activities related to flora and fauna. Through the system, data can be disaggregated by geographical coverage (country, region and global levels), type of activity (agriculture, NTFP, aquaculture, etc) & industry (food, cosmetic, handicrafts, etc), origin of the species (flora, fauna, CITES) and hectares.

The indicators database can be accessed through http://btias.org/ (registration and login required). At the time of writing this report, only limited baseline information had been inserted into the database. Figure 8 shows an example of the result output of a query for Africa.

Table 8 Sample output from the BT IAS for Africa



X. CITES Trade Data Dashboads – CITES

The CITES Trade Data Dashboards (http://cites-dashboards.unep-wcmc.org/) provide an interactive, dynamic way of viewing the trade data submitted by CITES Parties in their annual reports to the Convention. Two points of entry are provided:

- the Global Dashboard, which displays global trade trends by taxonomic group
- the National Dashboard, which displays trade data by country or region

The dashboards are a subset of the 10.5 million records within the CITES Trade Database (http://www.unep-wcmc-apps.org/citestrade/), which is compiled from CITES Parties

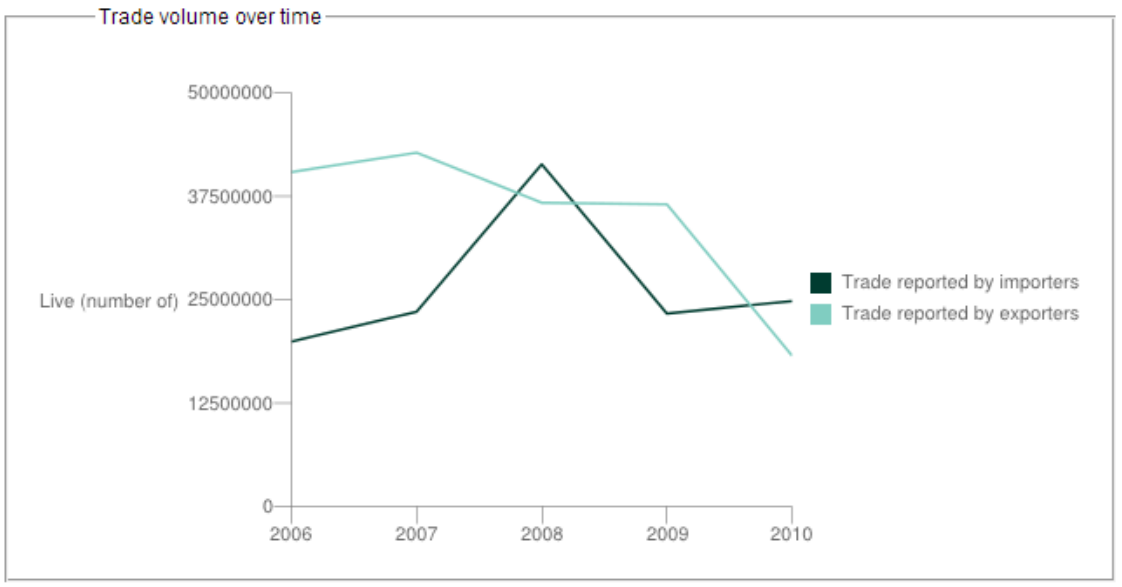
annual reports. To simplify the graphics displayed through the dashboards, the dataset was restricted to:

- direct trade in Appendix I and II species except a) within the National Dashboard where users can specifically choose to look at re-exports for the country/region and b) within the "Appendix" view where data for Appendix III species can also be viewed;
- trade reported as commercial, personal or hunting trophies (purpose codes T, P, and H); and
- terms that are most commonly used in trade, with different trade term options available depending on which taxonomic group is selected. This is to minimise instances where the search criteria returns no data and to allow users to quickly see the most highly traded terms.

Where appropriate, units were converted (e.g. grams to kilograms and kg of timber to m3 where conversion factors exist), to improve the analyses provided by the dashboard.

The interactive and dynamic dashboard approach, developed by UNEP WCMC, is a solution to illustrate the highly complex nature of biodiversity trade and to extract some useful trends from the data in terms of use and benefit sharing.

Figure 6 shows the result of a global query of the database for live plants (excluding Orchids and Cacti, which are dealt with separately)



Note: This dashboard is designed to give an overview of CITES trade data, and it only shows a subset of the over 10 million records found in the CITES trade database. For a more detailed query of all CITES trade data, visit the CITES Trade Database.

Figure 6 Global trade in plants (excluding Orchids and Cacti)

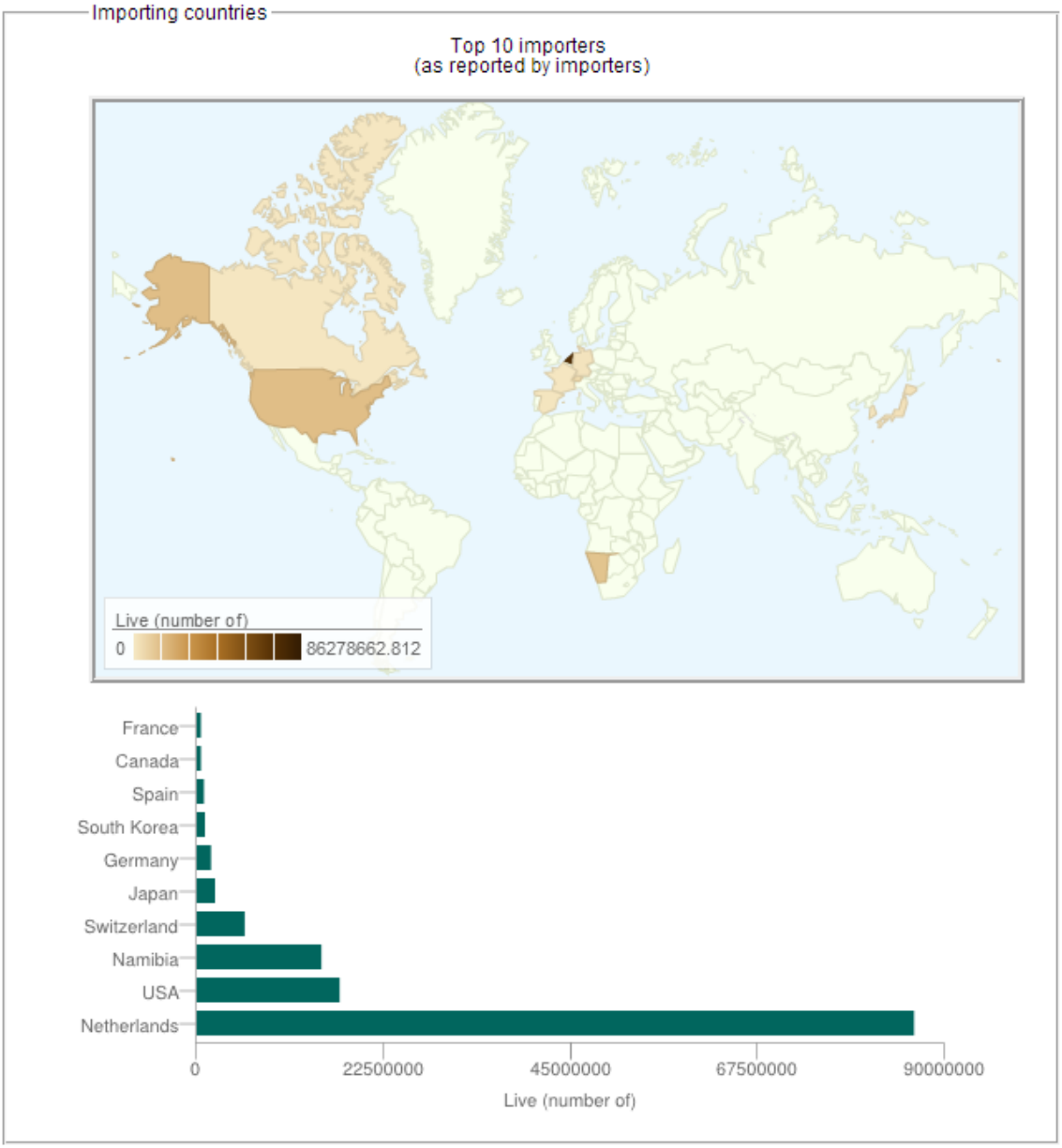


Figure 7 Global trade in plants (excluding cacti & orchids): Top 10 importers (as reported by importers)

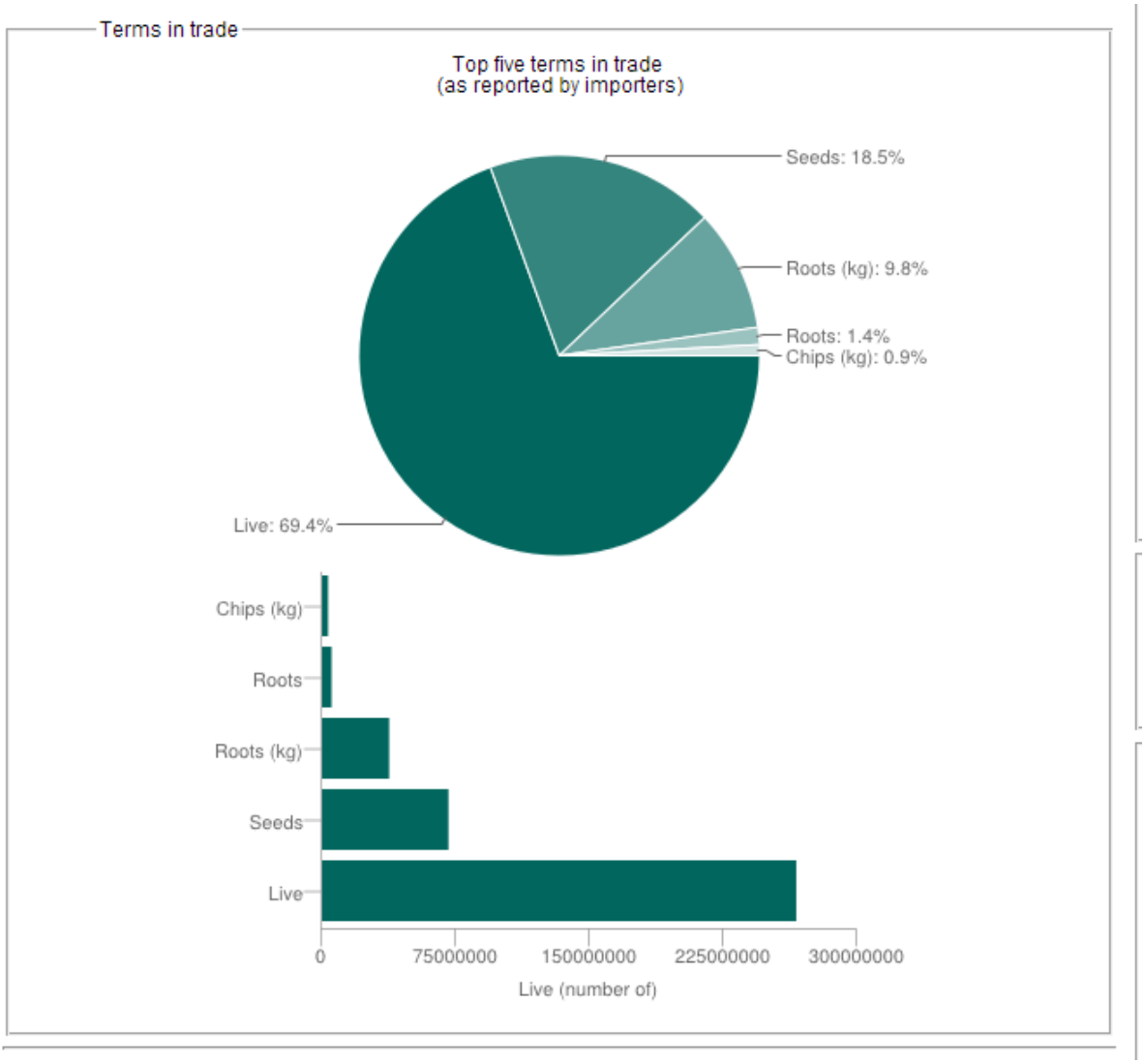


Figure 8 Global trade in plants (excluding cacti & orchids): Top five terms in trade (as reported by importers)

The advantage of the dashboard approach is that it provides a clear insight into the flows of biodiversity trade as reported by the providers (beneficiaries) and the importers. These data can be interpreted in terms of benefit sharing.

National queries can also made, such as in Figure 9 for trade in roots by France, as reported by France and the various exporting countries from which France has sourced the products.

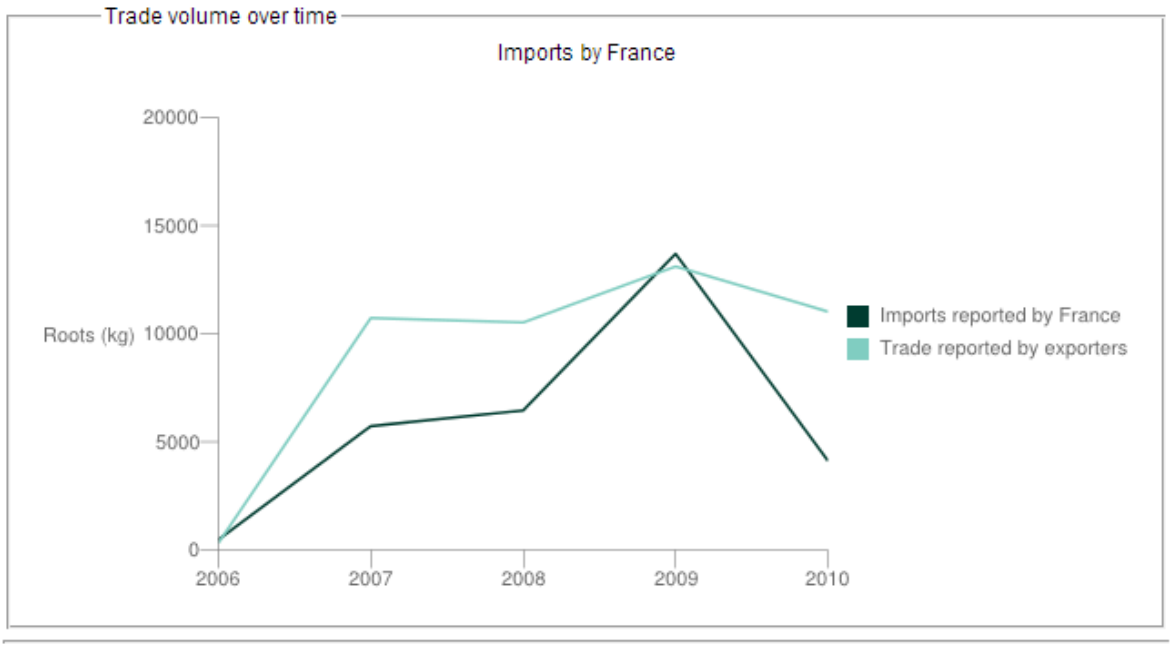


Figure 9 Imports of root by France from the World

XI. Indicators for objectives contained in the CITES strategic vision: 2008-2013 - CITES

The indicators listed and described in this document refer to the wider strategic vision of CITES (CITES) which is principally focused on reducing illegal trade in plants and animals. However, the CITES objectives indirectly overlap with access and benefit sharing, for example in the distribution of foregone benefits from illegally obtained and traded animals and plants. Also the precise linking of indicators to specific goals of the Strategic Vision can be used as an example to determine those indicators best suited to described, assess and monitor a similarly complex issue as access and benefit sharing. In the following pages, selected objectives and indicators from the Strategic Vision that might be relevant for ABS are reproduced.

Parties comply with their obligations under the Convention through appropriate policies, legislation and procedures.

Indicators

1.1.1 The number of Parties that are in category 1 under the national legislation project.

1.1.2 The number of Parties that have designated Management Authorities and Scientific Authorities.

1.1.3 The number of Parties subject to CITES recommendations on trade.

Best available scientific information is the basis for non-detriment findings.

Indicators

1.5.1 The number of surveys undertaken by exporting countries of:

a) the population status as well as the trends and impact of trade upon Appendix-II species; and

b) the status of and trend in Appendix I species and the impact of any recovery plans.

1.5.2 The number of Parties that have adopted standard procedures for making non-detriment findings.

1.5.3 The number and proportion of annual export quotas based on population surveys.

1.5.4 The number of Appendix-II species for which trade is determined to be non-detrimental to the survival of the species as a result of implementing recommendations from the Review of Significant Trade.

Parties cooperate in managing shared wildlife resources.

Indicators

1.6.1 The number of bilateral and multilateral cooperative agreements that specifically provide for co-management of shared species by range states.

1.6.2 The number of cooperative management plans including recovery plans in place for shared populations of CITES listed species

1.6.3 The number of workshops and other capacity-building activities that bring range states together to address the conservation and management needs of shared species.

Parties and the Secretariat have adequate capacity-building programmes in place.

Indicators

1.8.1 The number of Parties with national and regional training programmes and information resources in place to implement CITES including the making of non-detriment findings, issuance of permits and enforcement.

1.8.2 The number of training and capacity-building programmes conducted or assisted by the Secretariat.

1.8.3 The proportion of Parties having received capacity building support from the Secretariat on request.

Cooperation between CITES and international financial mechanisms and other related institutions is enhanced in order to support CITES-related conservation and sustainable development projects, without diminishing funding for currently prioritized activities.

Indicators

3.1.1 The number of Parties funded by international financial mechanisms and other related institutions to develop activities that include CITES-related conservation and sustainable development elements.

3.1.2 The number of international projects funded by international financial mechanisms and other related institutions that include CITES-related conservation and sustainable development elements.

Cooperation with relevant international environmental, trade and development organizations is enhanced.

Indicators

3.3.1 The number of biodiversity conservation goals, objectives and principles of CITES and those of relevant multilateral environmental, trade and development agreements and conventions that are identified and implemented in an integrated manner.

3.3.2 The number of additional biodiversity conservation, trade and development goals, scientific and technical programmes that integrate CITES requirements agreed between environmental and trade agreements and programmes and international financial mechanisms.

XII. Patent applications based on genetic resources (SEBI indicator 24) – European Environmental Agency

The indicator on ABS developed in the framework of SEBI relates biodiversity access and benefit sharing to the patent applications based on genetic resources (SEBI indicator 24). This indicator is also being calculated at national level in some Member States such as the Czech Republic or France (see separate document "Overview of EU MS measures on ABS").

Biodiversity has served as a major resource for patent activity across a wide swathe of science and technology sectors ranging from agriculture to cosmetics, functional foods, traditional medicines, pharmaceuticals, biotechnology and emerging developments such as synthetic biology. About 9 % of European patent activity relates to biodiversity, rising to 16 % if the full spectrum of pharmaceutical activity is included. After rapid growth, patent activity for biodiversity now shows a declining trend (EEA 2010).

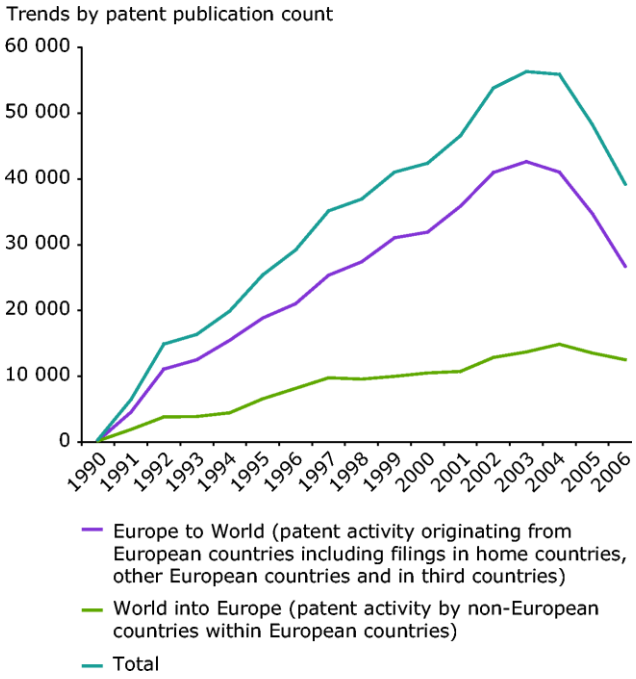


Figure 10 Biodiversity patent trends for European countries (publication portfolio)

The decrease from 2005 seen in Figure 10 is due to the time lag between the filing of a patent and its publication (2 years and more). This means that for recent years, the data may not yet be in the database (Oldham and Hall 2009). Additional work is required to link the data with wider economic and geographical information.

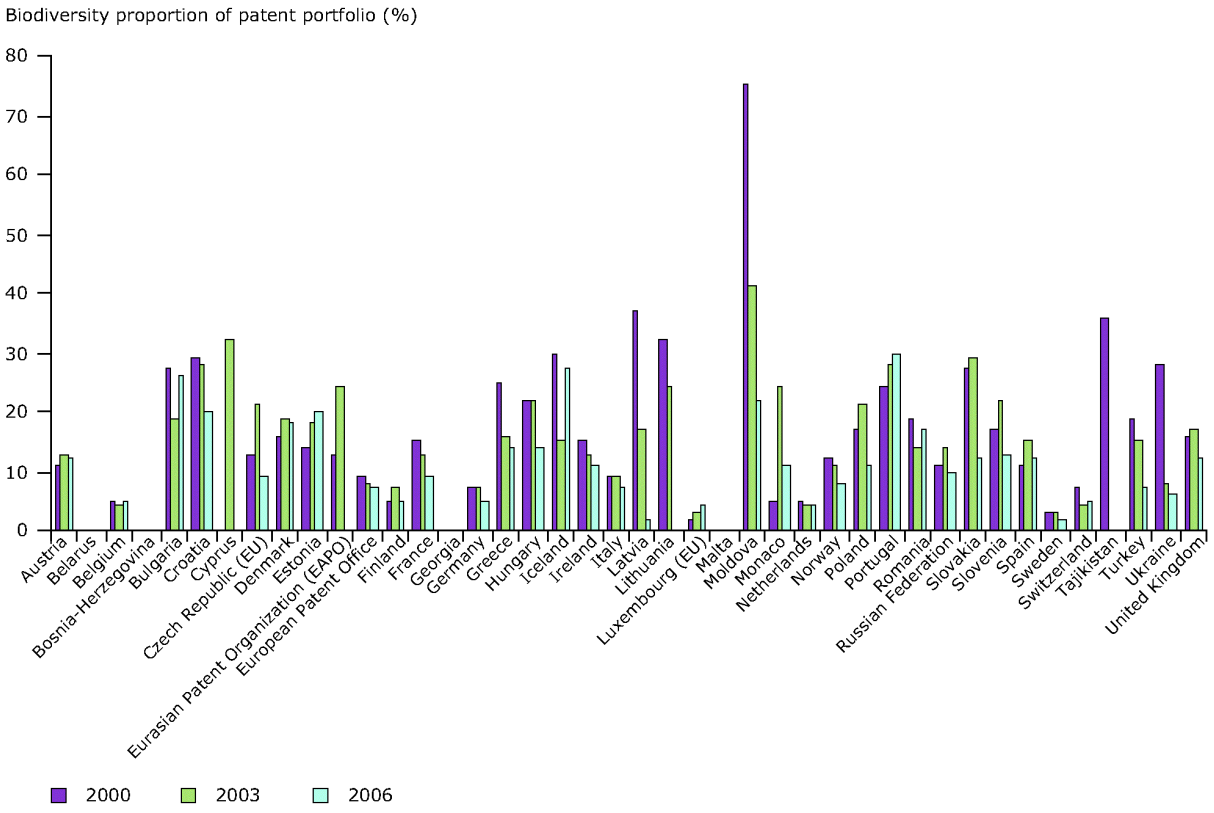


Figure 11 Biodiversity as a share of European patent portfolios for target years

According to the SEBI interpretation of the indicator, trends in biodiversity related patents are of direct relevance to the access and benefit sharing provisions of the Convention on Biological Diversity in four areas (EEA 2010):

- first, patent applicants must disclose information on the materials used in a claimed invention. This provides a means to examine access to biodiversity and traditional knowledge in relation to its origin
- second, sectoral trends (i.e. agriculture, traditional medicines, biotechnology) can be examined and linked to economic and geographical data. This provides a bridge to addressing issues of relevance to benefit-sharing;
- third, patents provide a measure of international cooperation where inventors and companies from more than one country are involved and this is linked with the promotion of technology transfer as an important cross-cutting issue under the Convention;

- fourth, as a standardised global information system, the patent system allows for the detailed monitoring of trends in activity for patents and related forms of intellectual property across multiple areas of science and technology.

Within the context of the Convention on Biological Diversity work is currently ongoing to clarify the meaning and scope of the utilisation of genetic resources and related subjects such as the traditional knowledge of indigenous peoples and local communities. The indicator can contribute to this process and be refined in accordance with the outcomes of these debates. In particular the treatment of patent activity for the pharmaceutical sector has major impacts on the indicator and requires further clarification. Additional work is also required to link the data with wider economic and geographical information and to advance understanding of the origins of material submitted for patent protection from particular countries and indigenous peoples and local communities. The use of emerging information technology and electronic whole-text patent databases will facilitate this process.

Access to genetic resources and benefit-sharing is one facet of the growing appreciation for the social and economic value of biological diversity. In the realm of innovation, new and more 'open' models for innovation and access and benefit-sharing are being proposed to serve the needs of the 21st Century and to reflect these wider values. The patent indicator can contribute to evidence-based approaches to existing trends and be adapted to meet longer term needs as new models emerge.

Growing appreciation for the economic value of biodiversity is being achieved more broadly, as documented by The Economics of Ecosystems and Biodiversity (TEEB) report under preparation and different statements by G8, the United Nations General Assembly and the Conference of the Parties to CBD.

The relationship between genetic resources and chemical compounds for use in the pharmaceutical and other industry sectors, known as 'derivatives', has a major impact on the indicator requiring clarification. The indicator is designed to be flexible in order to accommodate emerging understandings under the Convention.

Main advantages of the indicator:

- Data availability (freely available) and geographic coverage are good.
- The indicator may encourage further work to refine the classification codes.

XIII. Biodiversity Action Plan Report 2010 – European Union

The 2010 assessment on implementation of the EU Biodiversity Action Plan provides a comprehensive overview of progress at both European Community and Member State levels. The report studies all four main policy areas of the EU Biodiversity Action Plan: biodiversity in the EU, the EU and global biodiversity, biodiversity and climate change,

and the knowledge base; and its supporting measures: financing, EU decision making, partnerships, and awareness raising.

Information provided by the Member States as part of the EU BAP Report 2010 under objective 8 ("To substantially reduce the impact of international trade on global biodiversity and ecosystem services") could be considered as a measure towards implementation of ABS. Specifically target: A8.1 ("Impact on biodiversity of EU trade significantly reduced by 2010 and again by 2013") includes action A8.1.3 ("Promote full implementation of the CBD Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of Benefits (ABS) arising out of their Utilisation, and other agreements relating to ABS such as the FAO International Treaty on Plant Genetic Resources for Food and Agriculture – and continue to contribute to negotiation of an international regime on ABS according to the mandate adopted at the 7th Conference of the Parties of the CBD [2006 onwards].)

Specifically, and relevant to this report, this action required the Member States among other things to report on:

1. implementation of the Bonn Guidelines into national legislation
2. awareness raising about the Bonn Guidelines
3. implementation of *MAT*s into national legislation
4. awareness raising about the *MAT*s
5. provision of funds for the *CBD* Access & Benefit-sharing Working Group

The information provided by Member States under this reporting obligation and presented on BISE, allowed us to draw up some graphs that give some indication about the state of implementation of access and benefit sharing policy.

The following figures summarise the information relevant to ABS in the BAP reporting. Figure 12 and Figure 13 show the state of progress with respect to the implementation of the Bonn Guidelines into national legislation; awareness raising about the Bonn Guidelines; implementation of *MAT*s into national legislation and awareness raising about the *MAT*s. For each action, Member States were requested to answer whether this had been not / partly / entirely implemented. In order to visually present the results, the value "0" was assigned to actions not implemented, the value "0.5" to actions partly implemented and the value "1" to actions fully implemented. The results are shown in two graphs. In the first the MS are ordered in decreasing order of implementation score; in the second, the MS are ordered alphabetically. The data for these graphs can be found in the document "Overview of EU MS measures on ABS" (separate document).

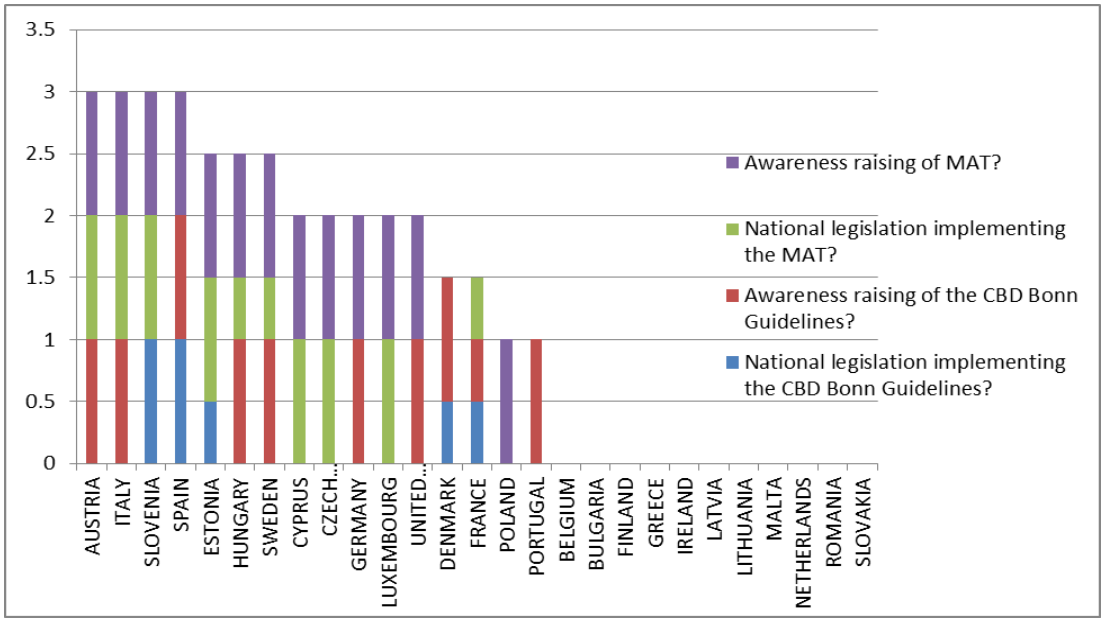


Figure 12 Implementation and awareness raising of the Bonn Guidelines and MAT's in the EU Member States. Each of the four criteria has been given the following ranking: no: 0; partly / in progress: 0.5 and completed: 1. [descending] (graph: ECNC; data: EU BAP Report 2010 on BISE)

Figure 12 shows that in 2010 only 2 out of the 27 EU Member States (Slovenia and Spain) reported having fully implemented the Bonn Guidelines in their national legislation. Partial implementation of the Bonn Guidelines was only reported by three countries (Denmark, Estonia and France). Eleven of the 27 EU Member States (40.7 %) did not report any actions related to the implementation of the Bonn Guidelines or MATs.

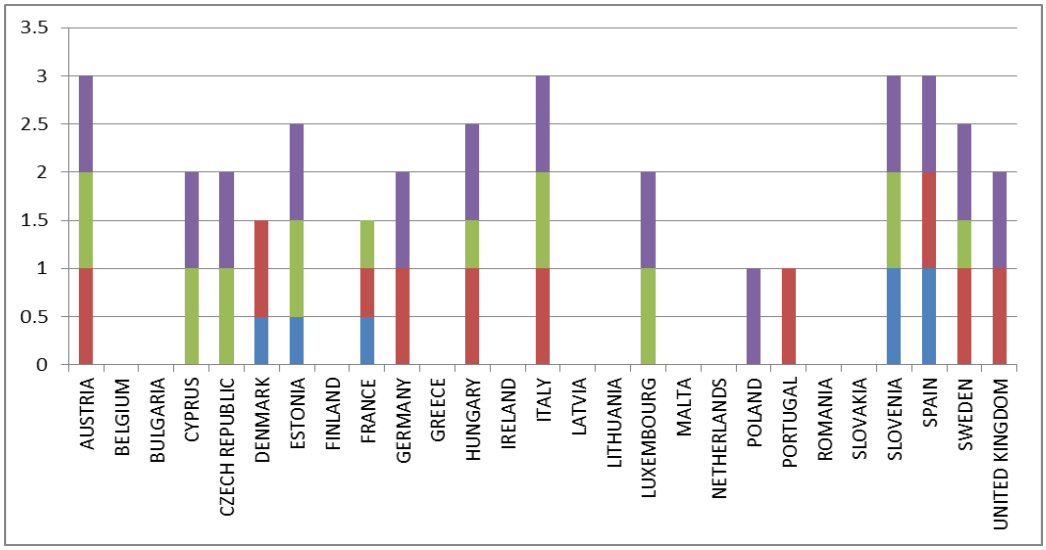


Figure 13 Implementation and awareness raising of the Bonn Guidelines and MAT's in the EU Member States. Each of the four criteria has been given the following ranking: no: 0; partly / in progress: 0.5 and completed: 1. [alphabetical] (graph: ECNC; data: EU BAP Report 2010 on BISE)

Figure 14 and Figure 15 show the financial contributions (in euro) of Member States to the Working Group on ABS. This can be considered as a measure of a countries dedication to the implementation of ABS policy.

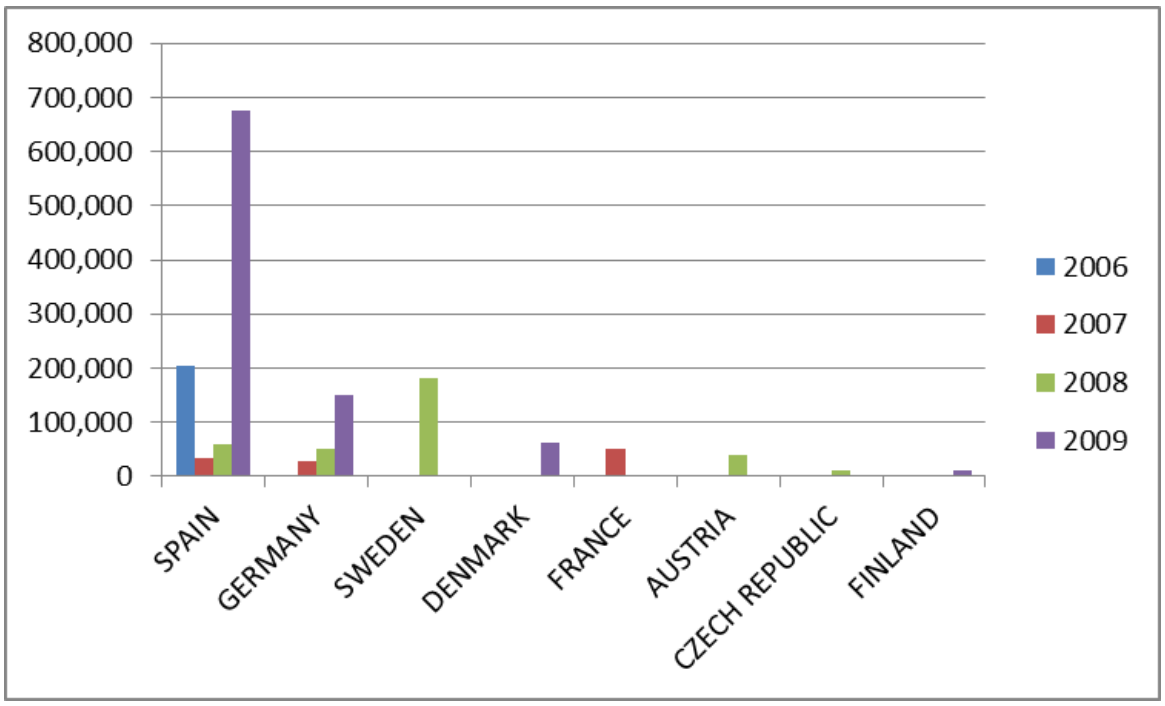


Figure 14 Contributions (in euro) of Member States to the Working Group on ABS, in decreasing order of contribution per MS (graph: ECNC; data BAP Report 2010 on BISE)

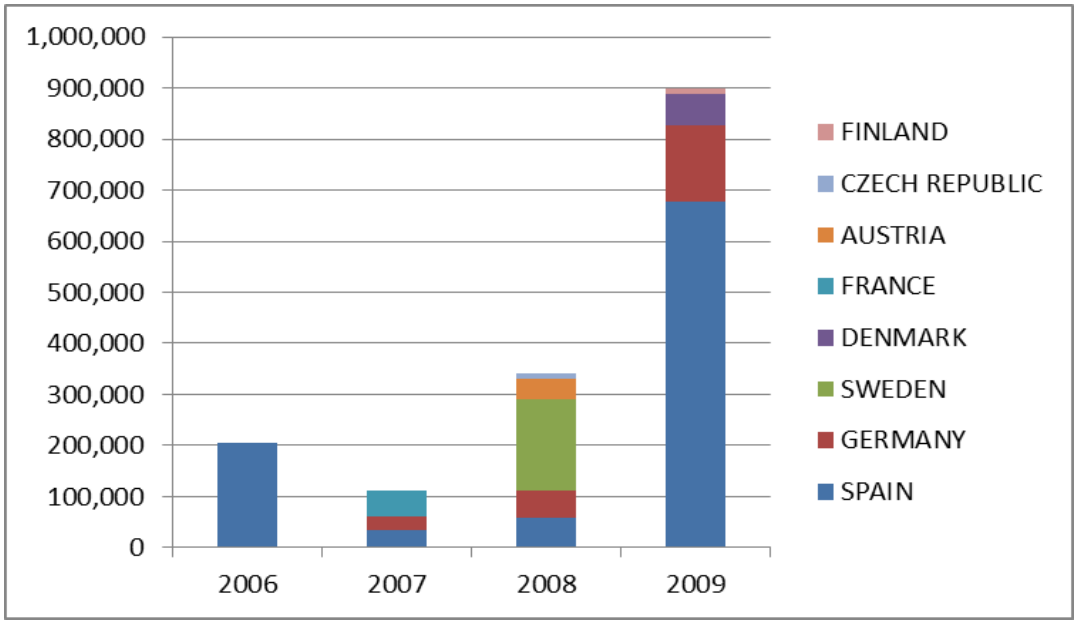


Figure 15 Contributions per year (in euro) of Member States to the Working Group on ABS (graph: ECNC; data BAP Report 2010 on BISE)

Eight of the 27 EU Member States (29.6 %) reported to have financially contributed to the Working Group on ABS, with Spain providing the lion's share.

The advantage of these data and their use as a crude indicator is that they have been collected as part of a previous reporting obligation. A repeat of this exercise would provide an opportunity to measure progress in ABS implementation since the last BAP reporting round.

XIV. International Treaty on Plant Genetic Resources for Food and Agriculture

The International Treaty on Plant Genetic Resources for Food and Agriculture (Plant Treaty or ITPGRFA[6]) is very relevant to reaching the objectives of the Nagoya Protocol as it aims at:

- recognizing the enormous contribution of farmers to the diversity of crops that feed the world;
- establishing a global system to provide farmers, plant breeders and scientists with access to plant genetic materials;
- ensuring that recipients share benefits they derive from the use of these genetic materials with the countries where they have been originated.

The Treaty explicitly works in the field of access and benefit sharing of genetic material, as exemplified through the Multilateral System (MLS)[7]. On ratifying the Treaty, Parties agree to make their genetic diversity and related information about the crops stored in their gene banks available to all through the Multilateral System (MLS).

Within the Treaty a Benefit Sharing Fund[8] was established that invests directly in high impact projects supporting farmers in developing countries conserve crop diversity in their fields and assisting farmers and breeders globally adapt crops to our changing needs and demands.

Indicators illustrating the progress with the implementation and operationalization of ABS or MLS could not be found.

XV. Cultural indicators of Indigenous Peoples' food and agro ecological systems – FAO, International Indian Treaty Council (IITC) & Sustainable Agriculture and Rural Development (SARD)

This document provides a summary of a literature review that elaborates on and validates Indigenous Peoples' views about some of the most important cultural

[6] http://www.planttreaty.org
[7] http://www.planttreaty.org/content/multilateral-system
[8] http://www.planttreaty.org/content/benefit-sharing-fund

indicators of food security, food sovereignty, agro-ecological systems and sustainable development.

Table 9 Extract from the "Long table of Cultural Indicator Areas" (Woodley 2006)

INDICATORS
8. Number and effectiveness of consultations for planning, implementation and evaluation; use of the principle of free, prior informed consent (pic) and the extent to which cultural concerns are considered and addressed
8.1. Intellectual property rights
8.1. 1. Level of knowledge and awareness of IPR among community members
8.1. 2. Protection mechanisms in place for traditional knowledge and innovation
8.2. Access and benefit sharing
8.2.1. Support for indigenous capacity, leadership, policy and programme development by state and indigenous governance, including number of programs and persons participating in and completing training
8.2.2. Participation in the creation of protected areas and management of forest concessions
8.2.3. Number of development programs that involve collaborative partnerships with participating community (co-management)
8.2.4. Number of development activities that include free, prior and informed consent
8.2.5. Legislation to regulate access to genetic resources and benefit sharing

These proposed indicators are more focused on the providers, benefit-sharing and intellectual property rights dimension of ABS and therefore form a good complement to the indicators that address the access and user dimension of ABS.

XVI. Making the Forest Sector Transparent - Global Witness

"*Making the Forest Sector Transparent*"[9] builds on the extensive work undertaken and expertise gained by Global Witness over the last fifteen years in extractive industry transparency and forest monitoring. As part of its awareness raising and campaigning activities, Global Witness has developed a set of 20 indicators to monitor the development of the forestry sector especially in relation to the social value of forest resources in terms of social equity and justice. Since 2009 "*Making the Forest Sector Transparent*" has documented how well governments have met commitments to improve forest sector governance and transparency. Although the indicators do not directly and explicitly refer to the fair and equitable access to biodiversity and the sharing of its benefits, some indicators can provide a basis for inspiration. The assessment of the state of each indicator is done on a qualitative basis, assessing the absence or presence of specific legislation or regulation to address issues relating to the fair and equitable use of the forest (and its products). This last point makes the link with biodiversity access and benefit sharing possible. Twelve indicators focus on whether the legal, policy and

[9] http://www.foresttransparency.info

regulatory framework includes provisions for forest sector transparency and good governance ('framework indicators') and eight on whether key documents and data on forest sector activities are comprehensively and regularly published ('data indicators'), as shown below.

Table 10 Overview of framework and data indicators used in "Making the Forest Sector Transparent" campaign

Framework Indicators	Data Indicators
• Freedom of Information Legislation • National Forest Policy • Codified Forest Law and Supporting Norms • Signed VPAs and Other Agreements on Forest Products • Provisions for Transparency in Forest Laws and Norms • Recognition of Customary Rights in Forest Laws and Norms • Formal Procedures for Consultation on New Forest Norms • Legal Right to Free Prior and Informed Consent • National Land Tenure Policy • Consultation before Commercial Logging Allocation • Regulation of Environmental Services • Strategic Environmental Assessment	• Forest Ownership and Resource Use Maps • Legal Documents for Commercial Logging Operations • Reports on the Verification Process of Eligibility of Commercial Operators • Forest Management Plans • Reports from Independent Forest Monitoring • Data on the Distribution of Forest Royalties and Incentives • Information on Forest Law Infractions • Annual Forest Authority Report

Table 11 Criteria for attributing the traffic light class for selected indicators

Framework Indicators	Information Indicators
Yes = **all** of the following criteria are met • the law, policy or norm has been passed by the government • all of these legal documents are freely available in the public domain (i.e. on the internet and/or from official offices)	Yes = **all** of the following criteria are met • the documents or data are produced for all activities in the country • the documents or data are routinely published on the internet or made available through other channels
Partial = **one or more** of the following criteria applies • the law, policy or norm has been drafted but not yet passed by the government • some of the legal documents are only available following a specific request • some of the key supporting norms to implement the law have not been established (this applies to particular indicators)	Partial = **one or more** of the following criteria applies • the documents or data are produced for only some activities in parts of the country • some of the documents or data are only available following a specific request • some of the documents or data are only irregularly published (i.e. out of date) on the internet and/or other channels
No = **one or more** of the following criteria applies • the law, policy or norm has not been drafted or passed by the government • none of the legal documents are available in the public domain, even on specific request	No = **one or more** of the following criteria applies • there is no system to produce the specified documents or data • none of the documents or data are publicly available, even on specific request

Two of the indicators listed in Table 10 seem particularly relevant for some of the themes of the ABS framework:

- Signed Voluntary Partnership Agreements (VPA) and other agreements on forest products
- Legal right to free Prior and Informed Consent

	Cameroon	Ghana	Liberia	Peru	Ecuador	Guatemala	DRC
Freedom of Information Legislation	Cameroon still does not have a specific law on freedom of informa Read more	The Right to Information Bill was first tabled in Parliament in F Read more	The Freedom of Information Act was signed into law in 2010 and is Read more	Peru has a Law on Transparency and Access to Public Information a Read more	The Organic Law on Transparency and Access to Public Information Read more	The Law on Access to Public Information seeks to guarantee the tr Read more	Article 24 sub-paragraph 1 of the constitution of the DRC of 18 F Read more
National Forest Policy	The current forest policy was issued in 1993 and reviewed in 1995 Read more	The policy framework, as contained in the 1994 Forest and Wildlif Read more	The National Forest Policy in 2006 sets out to address immediate Read more	A third preliminary version of the proposed National Forest Polic Read more	The Under-Secretariat for Natural Heritage at the Ministry of Env Read more	Guatemala's Forest Policy of 1999 forms the general framework for Read more	The priority agenda drawn up by the World Bank in 2007 serves as Read more
Codified Forest Law and Supporting Norms	The Forest Law was under review in 2012 through a participative p Read more	There are the several laws that regulate the protection and manag Read more	The National Forestry Reform Law 2006, Ten Core Regulations 2007 Read more	There is forest sector legislation and lower level regulations wh Read more	There are numerous laws connected with the environment sector whi Read more	Guatemala has a specific legal framework for forest issues. There Read more	There is a Forest Code and 37 regulatory measures of the 45 initi Read more

Figure 16 First part of the Forest Transparency indicators: example of the presentation of the "Making the Forestry Sector Transparent" campaign indicator set (http://www.foresttransparency.info)

Figure 16 has been included as an example for the presentation of a set of related indicators based on the traffic light approach.

XVII. Biodiversity Barometer - Union for Ethical Biotrade

The Union for Ethical Biotrade produces Biodiversity Barometers since 2009. This is a report on the perception of biodiversity by citizen. The data are obtained through interviews in a similar manner to the Eurobarometers[10], and essentially measure the progress in public perception of and awareness about biodiversity. However, in addition to the general questions about knowledge, perception and awareness of the public, the UEBT Biodiversity Barometer also includes an analysis of how companies that depend on biodiversity (such cosmetics industry) report on biodiversity. These figures, if linking companies to countries can provide some insight in the effectiveness of how the Nagoya Protocol has been transposed into national legislation and implemented.

[10] http://ec.europa.eu/public_opinion/index_en.htm

	Out of top 100 Companies	Out of top 20 Companies Nb	%
Companies reporting on sustainability issues	44	18	90%
Companies mentioning biodiversity	13	9	45%
Companies reporting on biodiversity sourcing practices	9	8	40%
Companies mentioning explicitly biodiversity related issues such as traditional knowledge and intellectual property rights	2	2	10%
But only one company mentions the issue of access benefit sharing in its reporting	1	1	5%

Base: 100 - Union for Ethical BioTrade research conducted by internet: review of web-sites, annual reports and sustainability reports

Figure 17 Industry engagement in ethical sourcing (source: http://ethicalbiotrade.org)

The last published Biodiversity Barometer (for 2012) presents a table with the progress in reporting by companies since 2009.

What are companies saying about biodiversity?	2009	2010	2011	2012	Variation 2012 vs 2009
Companies reporting on sustainability development	44%	52%	52%	54%	+10
Companies reporting biodiversity	13%	21%	27%	31%	+18
Companies reporting on biodiversity sourcing practices	9%	12%	19%	21%	+12
Companies mentioning biodiversity related issues like traditional knowledge and intellectual property rights	2%	3%	5%	4%	+ 2

Basis : UEBT analysis of top 100 beauty companies (WWD)

Figure 18 Industry engagement in ethical sourcing - evolution over four years (source: http://ethicalbiotrade.org)

XVIII. National ABS frameworks operational score as recorded by the GEF tracking tool (to be developed) - Biodiversity Strategy for GEF-5

As part of its Biodiversity Strategy aims to financially support activities that help achieve the targets of the Convention on Biological Diversity.

Table 12 Biodiversity results framework for Target 4 of GEF-5 Biodiversity Strategy[11]

Objectives	Expected Outcomes and Indicators	Outcome targets for $4.2 billion Target	Core Outputs
Objective 4: Build Capacity on Access to Genetic Resources and Benefit Sharing	Outcome 4.1: Legal and regulatory frameworks, and administrative procedures established that enable access to genetic resources and benefit sharing in accordance with the CBD provisions **Indicator 4.1: National ABS frameworks operational score as recorded by the GEF tracking tool (to be developed)**	$ 40 million Eighty-percent (80%) of projects meet or exceed their target for a fully operational and effective ABS framework.	Access and benefit sharing agreements (number) that recognize the core ABS principles of Prior Informed Consent (PIC) and Mutually Agreed Terms (MAT) including the fair and equitable sharing of benefits.

GEF recognises the need to develop an indicator to measure progress and effectiveness of financing programmes for genetic resources and benefit sharing, but this report could not find any evidence that such an indicator has yet been developed.

XIX. Sales of Fair Trade Products – Fairtrade Foundation (UK)

Fair trade is an alternative approach to conventional trade and is based on a partnership between producers and consumers. Fair trade offers producers a better deal and improved terms of trade. This allows them the opportunity to improve their lives and plan for their future. Fair trade offers consumers a powerful way to reduce poverty through their everyday shopping.

Many of the products produced under fair trade scheme are directly related to biodiversity and ecosystem services. In addition, fair trade is not only concerned with the material wellbeing of the producers but also with the sustainable and environmental record of their production methods. In addition to making sure a fair return of the

[11] www.thegef.org/gef/sites/thegef.org/files/documents/document/GEF-5_Bio_strategy.pdf

benefits of retail flow back to the producers, the producers participating in Fairtrade are requested to abide by the Fairtrade Standard for Contract Production, which gives much attention to biodiversity and sustainability, and explicitly recognises that the local biodiversity and ecosystem services it supports are key elements in providing a sustainable, just and environmentally friendly production (Fairtrade Labelling Organizations International e.V. 2012).

Therefore we consider that the figures of Fairtrade sales in consumer countries might provide an indication about benefit sharing with producer countries.

Table 13 Estimated Fairtrade Retail Sales by Country (Fairtrade 2013)

Country	2009 (in €)	2010 (in €)	Growth Rate
AUS/NZ	28,733,986	125,940,187	258%*
Austria	72,000,000	87,000,000	21%
Belgium	56,431,496	60,243,537	7%
Canada	201,978,074	248,772,680	6%*
Czech Republic	556,540	2,704,370	386%**
Denmark	54,436,609	61,837,026	14%*
Estonia	295,045	606,247	105%
Finland	86,865,284	93,001,210	7%
FLO / Rest of World	18,099,255	39,443,874	118%
France	287,742,792	303,314,314	5%
Germany	267,473,584	340,000,000	27%
Ireland	118,574,416	138,000,000	16%
Italy	43,382,860	49,400,006	14%
Japan	11,283,451	14,434,289	14%*
Latvia	153,500	425,936	177%
Lithuania	315,380	751,776	138%
Luxembourg	5,327,122	6,200,000	16%
Netherlands	85,818,400	119,000,000	39%
Norway	34,689,522	43,756,694	16%*
South Africa	458,075	1,898,889	315%**
Spain	8,030,724	14,886,675	85%
Sweden	82,662,331	108,477,630	18%*
Switzerland	180,160,263	219,918,679	12%*
UK	946,540,300	1,343,956,837	40%*
USA	851,403,590	936,973,359	5%*
GRAND TOTAL	3,443,412,599	4,360,944,215	27%

* Growth rate is based on the percentage increase as reported in the local currency and not on the value converted into euros.

** These countries submitted their 2009 sales values in euros and their 2010 results in local currency. The growth rate was calculated by converting the 2010 value into euros.

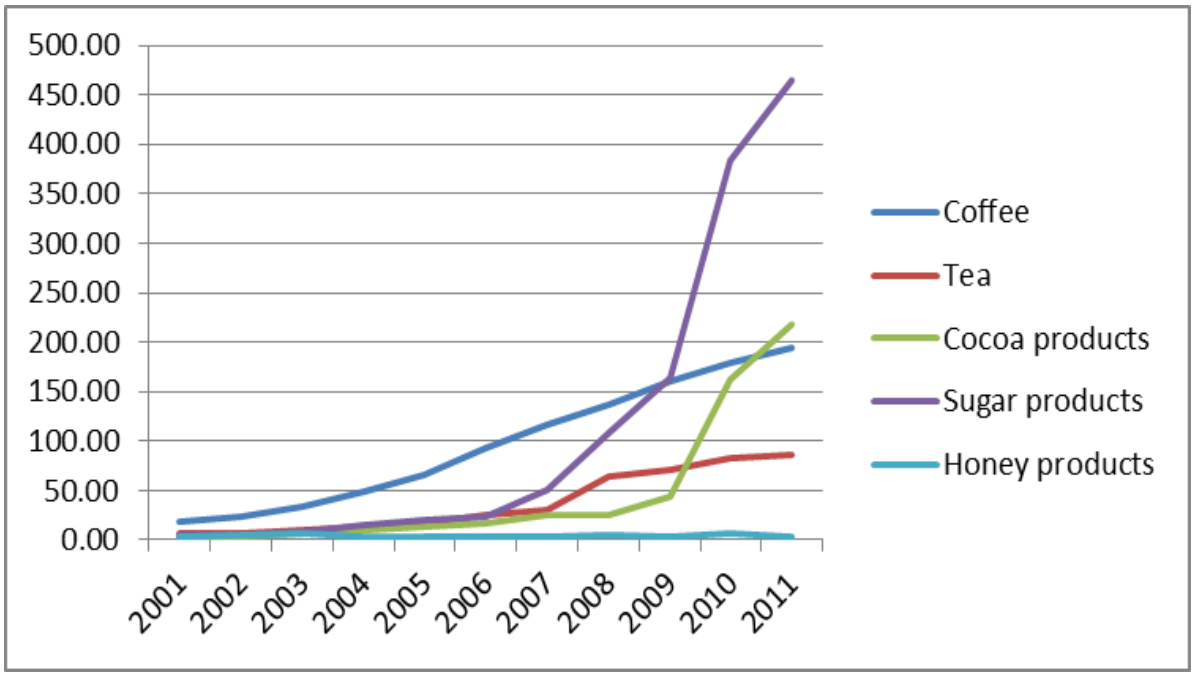


Figure 19 Sale of Fairtrade © products in the UK (in £/year)[12]

XX. Trade value of biodiversity related commodities - United Nations Commodity Trade Statistics Database

Values of commodities traded on the international market are recorded by the United Nations Commodity Trade Statistics Database. Several categories of commodities refer directly or indirectly to biodiversity products and their derivatives. The analysis of trade value for importing and exporting countries can give an indication of the benefits for the providers and users of these commodities. As an example, a graph has been produced of the development between 2007 and 2011 of the trade value of some animal products including ambergris, castoreum, civet and musk from exporters around the world to the EU 27.

The data recorded in the database are widely used by several authors to illustrate aspects and trends of ABS implementation. But as they reflect officially reported trade data, much of the so-called bio-piracy, intellectual property rights and benefit sharing goes unrecorded.

[12] http://www.fairtrade.org.uk/what_is_fairtrade/facts_and_figures.aspx

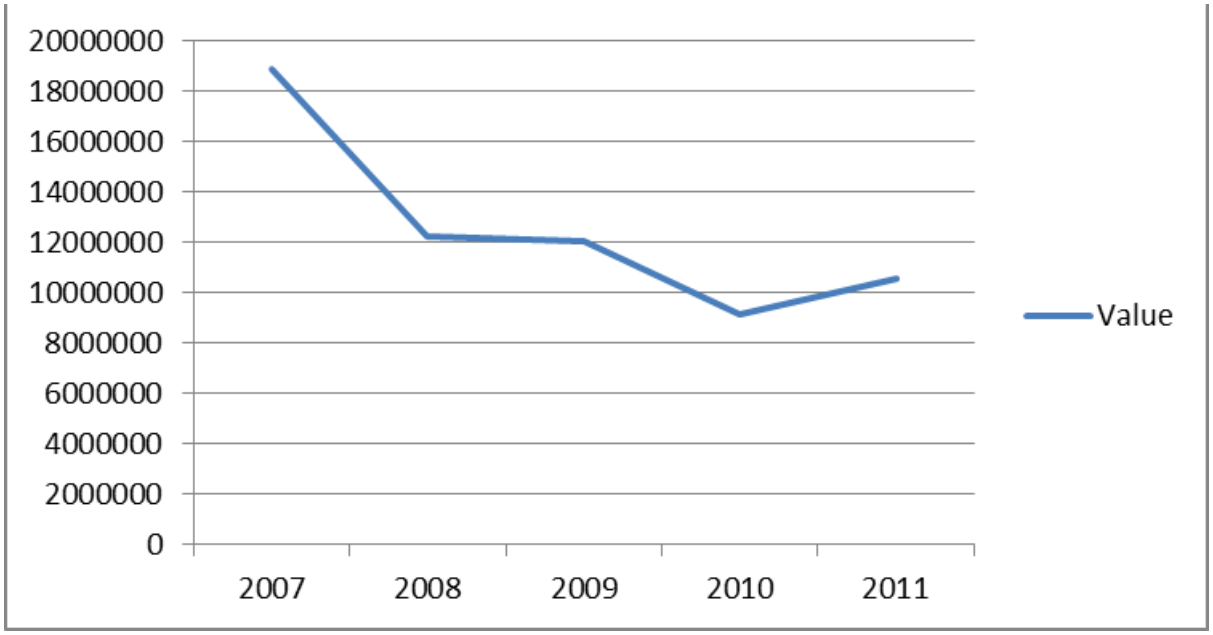


Figure 20 Trade value in USD of "Products of animal origin, not elsewhere specified or included"[13] from the World to the EU 27. Source: UNComtrade http://comtrade.un.org/

Figure 21 shows the top exporters of medicinal plants in 1999 and 2009. Trade value of medicinal plants as an export commodity increased in this period. One can suppose that the income gained from the sale and export of medicinal plants can be considered as a direct benefit to the exporting country. This figure does not tell anything about the sharing of the benefits possibly arising further down the value chain.

[13] Category 051000: ambergris, castoreum, civet and musk; cantharides; bile, whether or not dried; glands and other animal products used in the preparation of pharmaceutical products, fresh, chilled, frozen or otherwise provisionally preserved.

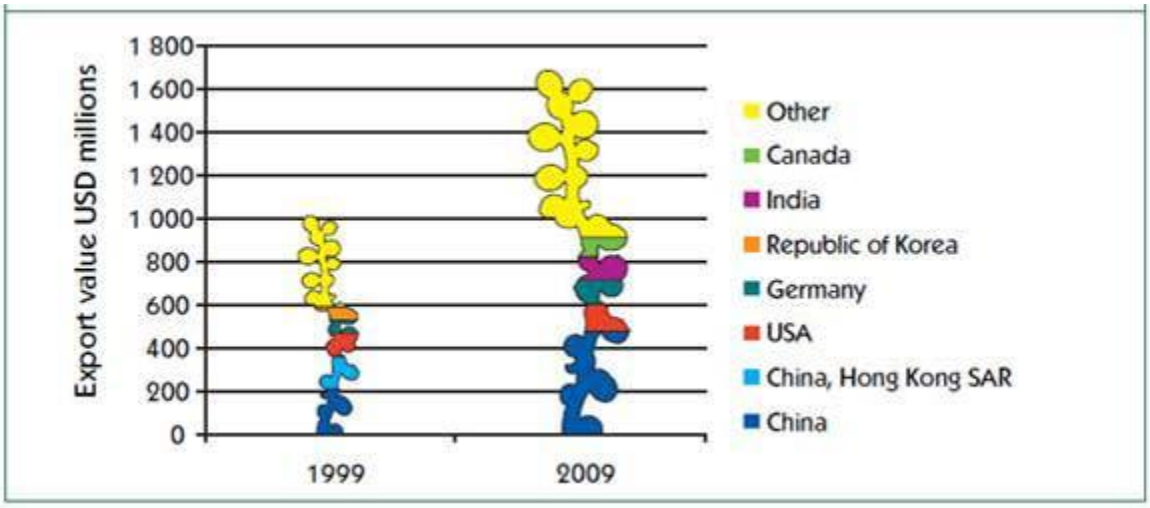


Figure 21 Total export values of medicinal plants, showing the top exporters in 1999 and 2009. Source: UNComtrade http://comtrade.un.org/

Figure 22 gives an indication of the increase in imports of medicinal plants, and indication that the importing countries are benefiting from these products they purchase on the international market.

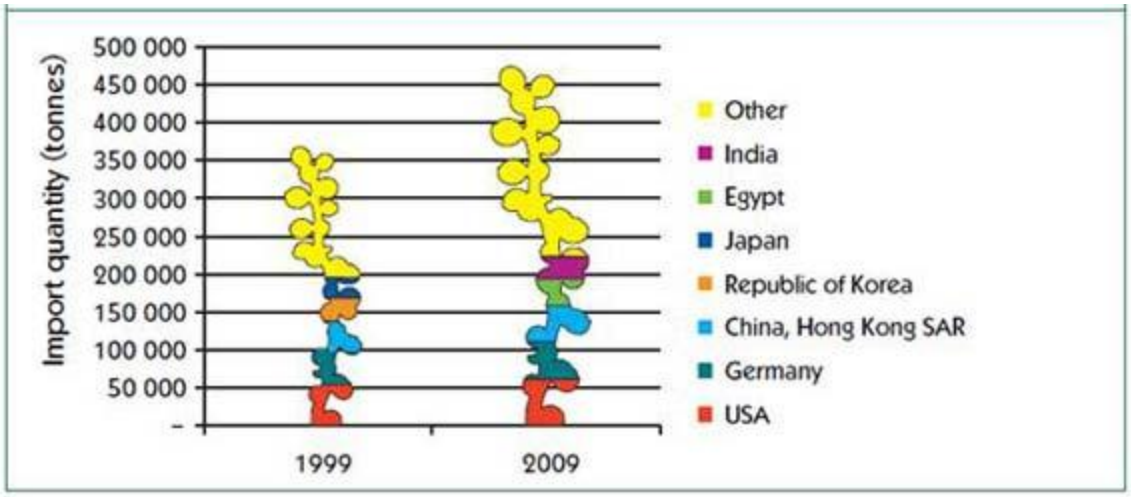


Figure 22 Total import quantities of medicinal plants, showing the top importers in 1999 and 2009. Source: UNComtrade http://comtrade.un.org/

6. Annexes

Annex 1 Signature and ratification of the Nagoya Protocol in the EU

Table 14 Dates of signature and ratification of the Nagoya Protocol by the EU and its Member States (sources (www.cbd.int)

Country	Signature	Ratification
(Albania)		2013-01-29
Austria	2011-06-23	-
Belgium	2011-09-20	-
Bulgaria	2011-06-23	-
Cyprus	2011-12-29	-
Czech Republic	2011-06-23	-
Denmark	2011-06-23	-
Estonia	-	-
Finland	2011-06-23	-
France	2011-09-20	-
Germany	2011-06-23	-
Greece	2011-09-20	-
Hungary	2011-06-23	-
Ireland	2012-02-01	-
Italy	2011-06-23	-
Latvia	-	
Lithuania	2011-12-29	-
Luxembourg	2011-06-23	-
Malta	-	-
Netherlands	2011-06-23	-
Poland	2011-09-20	-
Portugal	2011-09-20	-
Romania	2011-09-20	-
Slovakia	-	-
Slovenia	2011-09-27	-
Spain	2011-07-21	-
Sweden	2011-06-23	-
UK	2011-06-23	-
European Union	2011-06-23	-

Annex 2. Selection of Indicators for determining use of ecosystem services (de Groot et al. 2010). Only those indicators that might be of relevance to ABS have been kept in this table.

Services comments and examples	Ecological process component providing the service (or influencing its availability) = functions	State indicator (how much of the service is present)	Performance indicator (how much can be used/provided in sustainable way)
Provisioning			
4. Genetic materials: genes for resistance to plant pathogens	Presence of species with (potentially) useful genetic material	Total 'gene bank' value (e.g. number of species and sub-species)	Maximum sustainable harvest
5. Biochemical products and medicinal resources	Presence of species or abiotic components with potentially useful chemicals and/or medicinal use	Total amount of useful substances that can be extracted (kg/ha)	Maximum sustainable harvest (in unit mass/area/time)
6. Ornamental species and/or resources	Presence of species or abiotic resources with ornamental use	Total biomass (kg/ha)	Maximum sustainable harvest
Regulating			
14. Pollination Abundance and effectiveness of pollinators	Number and impact of pollinating species	Dependence of crops on natural pollination	
15. Biological regulation	Control of pest populations through trophic relations	Number and impact of pest-control species	Reduction of human diseases, live-stock pests
Habitat or Supporting			
17. Genepool protection	Maintenance of a given ecological balance and evolutionary processes	Natural biodiversity (especially endemic species); Habitat integrity (irt min. critical size)	Ecological value (i.e. difference between actual and potential biodiversity value)
Culture and amenity			
23. Education and science opportunities for formal and informal education and training	Features with special educational and scientific value/interest	Presence of features with special educational and scientific value/interest	Number of classes visiting. Number of scientific studies

Annex 3: List of organisations and initiatives involved in ABS

ABS Capacity building initiative
http://www.abs-initiative.info/

Bioprospecting Information Resource
http://www.bioprospector.org

Biotrade Initiative
http://www.biotrade.org/index.asp

Botanic Gardens Conservation International
http://www.bgci.org/

Centre for International Environmental Law
http://www.ciel.org/

Ecosystem market place
http://www.ecosystemmarketplace.com

ETC Group
http://www.etcgroup.org

Fairtrade
www.fairtrade.net

Fair Wild
http://www.fairwild.org

FAO Commission on Genetic Resources for Food and Agriculture
http://www.fao.org/nr/cgrfa/en/

Forest Transparency / Global Witness
http://www.foresttransparency.info

Global Crop Diversity Trust
http://www.croptrust.org

Global Environmental Facility
www.thegef.org

Global Strategy for Plant Conservation
http://www.plants2020.net

GRAIN
http://www.grain.org/

Intellectual Property Watch
http://www.ip-watch.org/

International Cooperative Biodiversity Groups
http://www.icbg.org

International Institute for Sustainable Development
http://www.iisd.org/

International Institute for Environment and Development
http://www.iied.org/

International Union for the Protection of New Varieties of Plants (UPOV)
http://www.upov.int

International Centre for Trade and Sustainable Development
http://ictsd.org/

Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (WIPO)
http://www.wipo.int/tk/en/igc/index.html

International Plant Exchange Network (IPEN)
http://www.bgci.org/resources/ipen/

IUCN
www.iucn.org

European Commission
http://ec.europa.eu/environment/biodiversity/international/abs/index_en.htm

Organisation for Economic Cooperation and Development (OECD)

www.oecd.org

People and plants
http://www.peopleandplants.org/

Public Interest Intellectual Property Advisers
http://www.piipa.org

Secretariat of the Convention on Biological Diversity CBD
www.cbd.int

TRAFFIC, the wildlife trade monitoring network
www.traffic.org

Union for Ethical Biotrade UEBT
http://www.ethicalbiotrade.org/

UN Comtrade
http://comtrade.un.org/

United Nations Conference on Trade and Development UNCTAD
http://unctad.org/en/Pages/Home.aspx

United Nations Information Portal on Multilateral Environmental Agreements
http://www.informea.org

UNEP-UNCTAD Capacity Building Task Force on Trade, Environment and Development
http://www.unep-unctad.org/cbtf/index.htm

World Intellectual Property Organisation WIPO
http://www.wipo.int

World Patent Statistical Database (PATSTAT)

World Trade Organisation (WTO)
www.wto.com

Annex 4. Possible useful data sources for the computation of ABS indicators

Database of Biodiversity-related Access and Benefit-sharing Agreements
http://www.wipo.int/tk/en/databases/contracts/background/index.html

Legislative Texts on the Protection of Traditional Knowledge and Traditional Cultural Expressions (Expressions of Folklore) and Legislative Texts relevant to Genetic Resources
http://www.wipo.int/tk/en/laws/index.html

United Nations Commodity Trade Statistics Database - Statistics Division
http://comtrade.un.org/

CITES Trade Dashboards
http://dashboards.cites.org/

Annex 4: Policies, treaties and conventions related to ABS

Convention on Biological Diversity
www.cbd.int

Cartagena Protocol on Biosafety
http://bch.cbd.int/about/

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS) to the Convention on Biological Diversity
http://www.cbd.int/abs/about/

Global Strategy for Plant Conservation
www.plants2020.net

Convention on Migratory Species
http://www.cms.int/

Ramsar Convention on Wetlands
http://www.ramsar.org

Convention on International Trade in Endangered Species of Wild Fauna and Flora CITES
http://www.cites.org/

International Treaty on Plant Genetic Resources for Food and Agriculture
http://www.planttreaty.org/

Millennium Development Goals
http://www.un.org/millenniumgoals/

European Patent Convention
http://www.epo.org/law-practice/legal-texts/epc.html

Patent Cooperation Treaty (PCT)
http://www.wipo.int/pct/en/texts/articles/atoc.htm

International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants (ISSC-MAP)
http://www.floraweb.de/map-pro/

Annex 5: Overview of ABS Implementation in EU Member States

(separate document)

7. Glossary and acronyms

List of acronyms

- BIP: Biodiversity Indicators Partnership
- BT IAS: BioTrade Impact Assessment System
- CBD: Convention on Biological Diversity
- CESAGen: Centre for Economic and Social Aspects of Genomics
- CGIAR: Consultative Group on International Agricultural Research
- CHM: Clearing House Mechanism
- CITES: Convention on International Trade in Endangered Species of Wild Fauna and Flora
- CoO: Certificate of Origin
- CSOLP: Certificate of Source, Origin or Legal Provenance
- CSR: Corporate Social Responsibility
- ESCR: International Network for Economic, Social and Cultural Rights
- FAO: Food and Agriculture Organization of the United Nations
- GATT: General Agreement on Tariffs and Trade
- GMO: Genetically Modified Organism
- GR: Genetic Resource
- IDHGD: International Declaration on Human Genetic Data
- INBio: National Biodiversity Institute (Costa Rica)
- IPEN: International Plant Exchange Network
- IPR: Intellectual Property Rights
- ITPGRFA: International Treaty on Plant Genetic Resources for Food and Agriculture
- MAT: Mutually Agreed Terms
- MLS: Multilateral System of Access and Benefit-Sharing
- MTA: Material Transfer Agreement
- MTDS: Monitoring, Tracking and Documentation System
- Nagoya Protocol: short for the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity
- NCA: National Competent Authority
- NFP: National Focal Point
- PBR: Plant Breeders' Rights
- PCT: Patent Cooperation Treaty
- PGRFA: Plant Genetic Resources for Food and Agriculture
- PIC: Prior Informed Consent
- SEBI: Streamlining European Biodiversity Indicators
- SMTA: Standard Material Transfer Agreement
- TEV: Total Economic Value of biodiversity
- TK: Traditional Knowledge

- TMOIFGR: Tracking and Monitoring the International Flow of Genetic Resources
- TRIPs: Trade-Related Aspects of Intellectual Property Rights Agreement (WTO)
- UNCTAD: United Nations Conference on Trade and Development
- WIPO: World Intellectual Property Organization
- WTO: World Trade Organization

Glossary of access and benefit sharing

- **Access and Benefit-sharing Clearing-House:** the global information-sharing portal established under Article 14(1) Nagoya Protocol (European Union 2012).
- **Access**: the acquisition of genetic resources or of traditional knowledge associated with genetic resources in a Party to the Nagoya Protocol in accordance with the applicable domestic access and benefit-sharing legislation or regulatory requirements of that Party (European Union 2012).
- **Association of users**: a legal person representing the interests of users that is involved in developing and overseeing best practices under Article 8 of this Regulation (European Union 2012).
- **Biological diversity**: the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems (UNEP 1992).
- **Biological resources**: includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity (UNEP 1992).
- **Biopiracy** is a situation where indigenous knowledge of nature, originating with indigenous peoples, is used by others for profit, without permission from and with little or no compensation or recognition to the indigenous people themselves. For example when bioprospectors draw on indigenous knowledge of medicinal plants which is later patented by medical companies without recognizing the fact that the knowledge is not new, or invented by the patenter, and depriving the indigenous community to the rights to commercial exploitation of the technology that they themselves had developed. Critics of this practice such as Greenpeace, claim these practices contribute to inequality between developing countries rich in biodiversity, and developed countries hosting companies that engage in 'biopiracy' (Wikipedia, 2013).
- **Bioprospecting** is an umbrella term describing the process of discovery and commercialization of new products based in biological resources, typically in less-developed countries. Bioprospecting often draws on indigenous knowledge about uses and characteristics of plants and animals. In this way, bioprospecting includes biopiracy, the exploitative appropriation of indigenous forms of knowledge by commercial actors, as well as the search for previously unknown compounds in organisms that have never been used in traditional medicine (Wikipedia, 2013).
- **Biotechnology**: any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use (UNEP 1992).

- **Collection**: an ensemble of collected samples of genetic resources and related information that is accumulated, stored, and taxonomically identified, whether owned by public or private entities (European Union 2012);
- **Competent Authority**: Responsible body designated by the member state for the application of the EU Regulation on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (European Union 2012)
- **Country of origin of genetic resources**: the country which possesses those genetic resources in in-situ conditions (UNEP 1992).
- **Country providing genetic resources**: the country supplying genetic resources collected from in-situ sources, including populations of both wild and domesticated species, or taken from ex-situ sources, which may or may not have originated in that country (UNEP 1992).
- **Domesticated or cultivated species**: species in which the evolutionary process has been influenced by humans to meet their needs (UNEP 1992).
- **Due diligence**:
- **Ecosystem**: a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit (UNEP 1992).
- **Ex-situ conservation**: the conservation of components of biological diversity outside their natural habitats (UNEP 1992).
- **Genetic material**: any material of plant, animal, microbial or other origin containing functional units of heredity (UNEP 1992).
- **Genetic resources**: genetic material of actual or potential value (UNEP 1992).
- **Germplasm**: a collection of genetic resources for an organism. For plants, the germplasm may be stored as a seed collection or, for trees, in a nursery (www.wikipedia.org).
- **Habitat**: the place or type of site where an organism or population naturally occurs (UNEP 1992).
- **In-situ conditions**: conditions where genetic resources exist within ecosystems and natural habitats, and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties (UNEP 1992).
- **In-situ conservation**: the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties (UNEP 1992).
- **Internationally recognised certificate of compliance**: an access permit or its equivalent issued by a competent national authority in accordance with Article 6(3)(e) Nagoya Protocol, that is made available to the Access and Benefit-sharing Clearing-House (European Union 2012);
- **Material Transfer Agreement** (MTA)
- **Multilateral System of Access and Benefit-Sharing** (MLS) ITPGRFA
- **Mutually agreed terms**: the contractual arrangement concluded between a provider of genetic resources or of traditional knowledge associated with genetic resources and a user of such resources or knowledge, that sets out specific conditions for the fair and equitable sharing of benefits arising from such use, and that may also include further conditions and terms for the use of such resources or knowledge (European Union 2012);

- **Nagoya Protocol**: the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity (European Union 2012);
- **Protected area**: a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives (UNEP 1992).
- **Regional economic integration organization**: an organization constituted by sovereign States of a given region, to which its member States have transferred competence in respect of matters governed by this Convention and which has been duly authorized, in accordance with its internal procedures, to sign, ratify, accept, approve or accede to it (UNEP 1992).
- **Standard Material Transfer Agreement** (SMTA) ITPGRFA
- **Sustainable use**: the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations (UNEP 1992).
- **Technology**: includes biotechnology (UNEP 1992).
- **Traditional knowledge associated with genetic resources**: traditional knowledge held by an indigenous or local community that is relevant for the use of genetic resources and that is as such described in the mutually agreed terms applying to the use of genetic resources (European Union 2012);
- **Use of genetic resources**: to conduct research and development on the genetic or biochemical composition of genetic resources (European Union 2012);
- **User**: a natural or legal person using genetic resources or traditional knowledge associated with genetic resources (European Union 2012);

8. Literature cited

BCCM. 2011. 'MOSAICC Micro-Organisms Sustainable Use and Access Regulation International Code of Conduct'. BCCM. http://bccm.belspo.be/projects/mosaicc/.

Biodiversity Indicators Partnership. 'Indicator of Access and Benefit Sharing'. http://www.bipindicators.net/indicators/accessbenefitsharing/accessbenefitsharing/2010.

CBD. 2002. 'Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising Out of Their Utilization'. Convention on Biological Diversity. http://www.cbd.int/doc/publications/cbd-bonn-gdls-en.pdf.

———. 2008. 'Access and Benefit-sharing in Practice: Trends in Partnerships Across Sectors'. 38. CBD Technical Series. Montréal: Secretariat of the Convention on Biological Diversity. http://www.cbd.int/doc/publications/cbd-ts-38-en.pdf.

———. 2012. 'Status of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization and Related Developments. Decision XI.1. of COP 11'. Secretariat of the Convention on Biological Diversity. http://www.cbd.int/doc/decisions/cop-11/cop-11-dec-01-en.pdf.

CITES. 'Indicators for Objectives Contained in the CITES Strategic Vision: 2008-2013'. Convention on Internastional Trade in Endangered Species of Wild Fauna and Flora. http://www.cites.org/eng/disc/E-SV-indicators.pdf.

Davis, K. 2008. 'A CBD Manual for Botanic Gardens'. Richmond, United Kingdom: Botanic Gardens Conservation International. http://www.bgci.org/resources/cbdmanual/.

EEA. 2010. 'Patent Applications Based on Genetic Resources (SEBI 024)'. European Environmental Agency. http://www.eea.europa.eu/data-and-maps/indicators/patent-applications-based-on-genetic-resources/patent-applications-based-on-genetic.

European Commission. N.D. 'Genetic Resources and ABS'. http://ec.europa.eu/environment/biodiversity/international/abs/index_en.htm.

———. 2012. 'Commission Staff Working Document - Impact Assessment Accompanying the Document "Proposal for a Regulation of the European Parliament and of the Council on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization in the Union" - Part 1'. SWD(2012) 292 final. Brussels, Belgium. http://ec.europa.eu/environment/biodiversity/international/abs/pdf/IMPACT_ASSESMENT_P1_EN.pdf.

European Union. 2012. 'Proposal for a Regulation of the European Parliament and of the Council on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization in the Union (Text with EEA Relevance)'. COM(2012) 576 final 2012/0278 (COD). Luxembourg: European Union. http://ec.europa.eu/environment/biodiversity/international/abs/pdf/PROPOSAL_FOR_A_REGULATION_EN.pdf.

Fairtrade. 2013. 'Challenge and Opportunity: Supplement to Annual Review 2010-11 2010 Financials and Global Sales Figures'. Bonn: Fairtrade Foundation. http://www.fairtrade.net/fileadmin/user_upload/content/2009/about_us/FLO_Annual-Financials-Sales_2010.pdf.

Fairtrade Labelling Organizations International e.V. 2012. 'Fairtrade Standard for Contract Production'. http://www.fairtrade.net/fileadmin/user_upload/content/2009/standards/documents/2012-09-25_CP_EN.pdf.

FAO. 2007. 'The State of the World's Animal Genetic Resources for Food and Agriculture'. edited by Dafydd Pilling & Barbara Rischkowsky. Rome: FAO. http://www.fao.org/docrep/010/a1250e/a1250e00.htm.

———. 2010. 'The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture'. Rome: Commission on Genetic Resources of the FAO. http://www.fao.org/docrep/013/i1500e/i1500e.pdf.

De Groot, R.S., R. Alkemade, L. Braat, L. Hein, and L. Willemen. 2010. 'Challenges in Integrating the Concept of Ecosystem Services and Values in Landscape Planning, Management and Decision Making'. *Ecological Complexity* 7 (3) (September): 260–272. doi:10.1016/j.ecocom.2009.10.006.

IEEP, Ecologic, and GHK Consulting. 2012a. 'Study to Analyse Legal and Economic Aspects of Implementing the Nagoya Protocol on ABS in the European Union. Annexes'. Brussels and London: Institute for Eurpean Environmental Policy. http://ec.europa.eu/environment/biodiversity/international/abs/pdf/ABS%20FINAL%20REPORT%20-%20Annexes.pdf.

———. 2012b. ‘Study to analyse legal and economic aspects of implementing the Nagoya Protocol on ABS in the European Union. Final report for the European Commission, DG Environment.’ Brussels and London: Institute for Eurpean Environmental Policy.
IPEN. 2003. ‘Code of Conduct for Botanic Gardens Governing the Acquisition, Maintenance and Supply of Living Plant Material’. http://www.bgci.org/files/ABS/IPEN/ipencodeofconduct.doc.
Kew Botanic Gardens. n.d. ‘Principles on Access to Genetic Resources and Benefit-sharing for Participating Institutions’. Kew Botanic Gardens. http://www.kew.org/conservation/principles.html.
Oldham, Paul, and Stephen Hall. 2009. ‘A European Patent Indicator for Access to Genetic Resources and Benefit-Sharing’. SSRN Working Paper. http://papers.ssrn.com/abstract=1397108.
Ruiz, Manuel, and Isabel Lapeña. 2007. ‘A Moving Target: Genetic Resources and Options for Tracking and Monitoring Their International Flows’. IUCN Environmental Policy and Law Paper No. 67/3 No. 3. ABS Series. Gland: IUCN. http://data.iucn.org/dbtw-wpd/edocs/EPLP-067-3.pdf.
Secretariat of the Convention on Biological Diversity. 2006. ‘Global Biodiversity Outlook 2’. Montreal. http://www.cbd.int/doc/gbo/gbo2/cbd-gbo2-en.pdf.
———. 2010. ‘Global Biodiversity Outlook 3’. Montréal: CBD. http://www.cbd.int/doc/publications/gbo/gbo3-final-en.pdf.
UNCTAD. 2012. ‘The BioTrade Impact Assessment System’. New York: UNCTAD. http://www.biotrade.org/ResourcesPublications/UNCTAD_DITC_TED_2010_9.pdf.
UNEP. 1992. ‘Convention on Biological Diversity’. http://www.cbd.int/convention/text/.
UNEP-WCMC. 2011. ‘Developing Ecosystem Service Indicators: Experiences and Lessons Learned from Sub-global Assessments and Other Initiatives’. 58. CBD Technical Series. Montréal: Secretariat of the Convention on Biological Diversity. http://www.cbd.int/doc/publications/cbd-ts-58-en.pdf.
Woodley, Ellen. 2006. ‘Cultural Indicators of Indigenous Peoples’ Food and Agro-ecological Systems’. Sustainable Agriculture and Rural Development. http://www.fao.org/sard/common/ecg/2653/en/CulturalIndicators_exsum16oct.pdf.
Young, T. 2005. ‘Gaps and Obstacles in Developing/Implementing National ABS Legislation’. In *Report of the International Expert Workshop on Access to Genetic Resources and Benefit Sharing*. Cape Town: South Africa and Norway.

9. List of further references

Artuso, Anthony. ‘Bioprospecting, Benefit Sharing, and Biotechnological Capacity Building’. World Development 30, no. 8 (2002): 1355–1368.

BCCM. ‘MOSAICC Micro-Organisms Sustainable use and Access regulation International Code of Conduct’. BCCM, n.d. http://bccm.belspo.be/projects/mosaicc/.

Bhatti, Shakeel, Santiago Carrizosa, Patrick McGuire, and Tomme Young. Contracting for

ABS: The Legal and Scientific Implications of Bioprospecting Contracts. IUCN Environmental Policy and Law Paper No. 67/4. ABS Series. Gland: IUCN, 2009. http://data.iucn.org/dbtw-wpd/edocs/EPLP-067-4.pdf.

Biodiversity Indicators Partnership. 'Access & Benefit Sharing'. Accessed 14 January 2013. http://www.bipindicators.net/indicators/accessbenefitsharing/accessbenefitsharing/2010.

———. 'Indicator of Access and Benefit Sharing', n.d. http://www.bipindicators.net/indicators/accessbenefitsharing/accessbenefitsharing/2010.

———. 'Nagoya Protocol Ratification', n.d. http://www.bipindicators.net/NagoyaProtocolratification.

———. 'Ratification Status of the Nagoya Protocol'. Accessed 14 January 2013. http://www.bipindicators.net/NagoyaProtocolratification.

Biotrade Initiative. UNCTAD Biotrade: Some considerations on Access, Benefit Sharing and Traditional Knowledge Working paper. Working Paper. Geneva: UNCTAD, 30 October 2004. http://www.biotrade.org/ResourcesPublications/Some%20considerations%20on%20ABS%20and%20TK.pdf.

Botanic Gardens Conservation International. 'Access and Benefit Sharing', n.d. http://www.bgci.org/resources/abs/.

Burton, Geoff. 'The Nagoya Protocol -The New Governance Regime for Research: Its Impact on Ex-situ Collections - Plus or Minus?' presented at the Forum on Marine Biotechnology, 30-31 May 2012, Vancouver, 30 May 2012. http://www.oecd.org/sti/biotechnologypolicies/Session%202%20Burton%20final.pdf.

Cabrera Medaglia, Jorge, Jeff Burton, George Greene, and Michael Gullo. ABS Management Tool. Best Practice Standard and Handbook for Implementing Genetic Resources Access and Benefit Sharing Activities. Swiss State Secretariat for Economic Affairs (SECO), May 2012. http://www.sib.admin.ch/uploads/media/Updated_ABS_Management_Tool_May_2012_01.pdf.

Cabrera Medaglia, Jorge, and Christian López Silva. Addressing the Problems of Access: Protecting Sources, While Giving Users Certainty. IUCN Environmental Policy and Law Paper No. 67/1. ABS Series. Gland: IUCN, 2007. http://data.iucn.org/dbtw-wpd/edocs/EPLP-067-1.pdf.

Cabrera Medaglia, Jorge, Frederic Perron-Welch, and Olivier Rukundo. Overview of National and Regional Measures on Access to Genetic Resources and Benefit-sharing - Challenges and Opportunities in Implementing the Nagoya Protocol. Montréal: Centre for International Sustainable Development Law, July 2012. http://cisdl.org/biodiversity-biosafety/public//CISDL_Overview_of_ABS_Measures_2nd_Ed.pdf.

Carrizosa, Santiago, Stephen Brush, Brian Wright, and Patrick McGuire. Accessing Biodiversity and Sharing the Benefits: Lessons from Implementing the Convention on Biological Diversity. IUCN Environmental Law Paper. Gland: World Conservation Union, 2004. http://data.iucn.org/dbtw-wpd/edocs/EPLP-054.pdf.

CBD. 'Access and Benefit Sharing', n.d. http://www.cbd.int/abs/.

———. Access and benefit-sharing in practice: trends in partnerships across sectors. CBD Technical Series. Montréal: Secretariat of the Convention on Biological Diversity, 2008. http://www.cbd.int/doc/publications/cbd-ts-38-en.pdf.

———. Biodiversity Indicators and the 2010 Biodiversity Target Outputs, experiences and lessons learnt from the 2010 Biodiversity Indicators Partnership. CBD Technical Series. Montréal: Secretariat of the Convention on Biological Diversity, 2010. http://www.cbd.int/doc/publications/cbd-ts-53-en.pdf.

———. 'Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising Out of Their Utilization'. Convention on Biological Diversity, 2002. http://www.cbd.int/doc/publications/cbd-bonn-gdls-en.pdf.

———. 'National Focal Points for ABS', n.d. http://www.cbd.int/doc/lists/nfp-abs-icnp.pdf.

CGN. First National Report on Forest Genetic Resources for Food and Agriculture. CGN Report. Wageningen: Centre for Genetic Resources, November 2012. http://documents.plant.wur.nl/cgn/literature/reports/Rapport%20CGN-23.pdf.

Chiarolla, Claudio. 'FAO International Treaty on Plant Genetic Resources and Farmers' Rights'. Accessed 16 January 2013. http://www.ias.unu.edu/sub_page.aspx?catID=35&ddlID=191.

———. Making Sense of the Draft Protocol on Access and Benefit Sharing for COP 10. Working Papers. Paris, France: IDDRI, 2010. http://www.iddri.org/Publications/Collections/Idees-pour-le-debat/ID_1007_chiarolla_abs.pdf.

Crouch, Neil R., Errol Douwes, Maureen M. Wolfson, Gideon F. Smith, and Trevor J. Edwards. 'South Africa's Bioprospecting, Access and Benefit-sharing Legislation: Current Realities, Future Complications, and a Proposed Alternative'. South African Journal of Science 104, no. 9–10 (October 2008): 355–366.

Davis, K. A CBD manual for botanic gardens. Richmond, United Kingdom: Botanic Gardens Conservation International, 2008. http://www.bgci.org/resources/cbdmanual/.

Dross, Miriam, and Franziska Wolff. New Elements of the International Regime on Access and Benefit Sharing of Genetic Resources - the Role of Certificates of Origin -. BfN - Skripten. Bonn: Bundesamt für Naturschutz, 2005. http://www.bfn.de/fileadmin/MDB/documents/skript127.pdf.

EEA. 'Patent applications based on genetic resources (SEBI 024)'. European Environmental Agency, 2010. http://www.eea.europa.eu/data-and-maps/indicators/patent-applications-based-on-genetic-resources/patent-applications-based-on-genetic.

EPO, Ruth. 'Interview with Prof Ruth Chadwick'. EPO, 2012. http://documents.epo.org/projects/babylon/eponet.nsf/0/04DE75A31EA2F9EDC12572D80037CEB0/$File/Interview_Chadwick.pdf.

European Commission. Commission Staff Working Document - Executive Summary of the Impact Assessment Accompanying the document 'Proposal for a Regulation of the European Parliament and of the Council on Access to Genetic Resources and the Fair and

Equitable Sharing of Benefits Arising from their Utilization in the Union'. Brussels, Belgium, 4 October 2012. http://ec.europa.eu/environment/biodiversity/international/abs/pdf/IMPACT_ASSESSMENT_SUMMARY_EN.pdf.

———. Commission Staff Working Document - Impact Assessment Accompanying the document 'Proposal for a Regulation of the European Parliament and of the Council on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union' - Part 1. Brussels, Belgium, 4 October 2012. http://ec.europa.eu/environment/biodiversity/international/abs/pdf/IMPACT_ASSESMENT_P1_EN.pdf.

———. Commission Staff Working Document - Impact Assessment Accompanying the document 'Proposal for a Regulation of the European Parliament and of the Council on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union' - Part 2 Annexes. Brussels, Belgium, 4 October 2012. http://ec.europa.eu/environment/biodiversity/international/abs/pdf/IMPACT_ASSESMENT_P2_EN.pdf.

———. Disclosure of origin or source of genetic resources and associated traditional knowledge in patent applications - Proposal of the European Community and its Member States to WIPO. Brussels: European Commission, 16 December 2004. http://www.wipo.int/tk/en/genetic/proposals/european_community.pdf.

———. 'Environment: Commission proposes measures to tackle "biopiracy" and facilitate nature-based research'. European Commission, 4 October 2012. http://europa.eu/rapid/press-release_IP-12-1063_en.htm?locale=en.

———. 'Genetic Resources and ABS', N.D. http://ec.europa.eu/environment/biodiversity/international/abs/index_en.htm.

———. 'Questions and answers on access and benefit-sharing', 4 October 2012. http://europa.eu/rapid/press-release_MEMO-12-738_en.htm?locale=en.

European Union. Commission Communication on a Bioeconomy for Europe. European Commission, 2012.

———. Progress Towards Ratification and Implementation of the Nagoya Protocol. Brussels, Belgium: European Commission, n.d. http://www.cbd.int/abs/submissions/cop-11/eu-en.pdf.

———. Proposal for a Regulation of the European Parliament and of the Council on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union (Text with EEA relevance). Luxembourg: European Union, 2012. http://ec.europa.eu/environment/biodiversity/international/abs/pdf/PROPOSAL_FOR_A_REGULATION_EN.pdf.

FAO. Surveying and Monitoring of Animal Genetic REsources. Animal Production and Health Guidelines. Rome: FAO, n.d. http://www.fao.org/docrep/014/ba0055e/ba0055e00.pdf.

———. The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture. Rome: Commission on Genetic Resources of the FAO, 2010.

http://www.fao.org/docrep/013/i1500e/i1500e.pdf.

———. The State of the World's Animal Genetic Resources for Food and Agriculture. Rome: FAO, 2007. http://www.fao.org/docrep/010/a1250e/a1250e00.htm.

Garrity, G.M., L.M. Thompson, D.W. Ussery, N. Paskin, D. Baker, P. Desmeth, D.E. Schindel, and P.S. Ong. Studies on Monitoring and Tracking Genetic Resources. ABS Studies on Monitoring and Tracking. CBD, n.d. https://www.cbd.int/doc/programmes/abs/studies/study-regime-05-en.pdf.

GEF. Biodiversity for GEF 5, n.d. http://www.thegef.org/gef/sites/thegef.org/files/documents/document/GEF-5_Bio_strategy.pdf.

———. 'GEF Establishes the Nagoya Protocol Implementation Fund'. Accessed 15 February 2013. http://www.thegef.org/gef/Press_release/GEF_establishes_NPIF.

———. Progress Report on the Nagoya Protocol Implementation Fund. Washington: Global Environment Facility, 13 November 2012. http://www.thegef.org/gef/sites/thegef.org/files/documents/GEF.C.43.Inf_.09_Progress%20Report%20on%20the%20Nagoya%20Protocol%20Implementation%20Fund.pdf.

Global Witness. Making the Forest Sector Transparent Annual Transparency Report 2012. Global Witness, February 2013. http://www.foresttransparency.info/downloads/.

Herzog, Felix, Katalin Balazs, Peter Dennis, Jurgen Friedel, Ilse Geijzendorffer, Philippe Jeanneret, Max Kainz, and Philippe Pointereau. Biodiversity Indicators for European Farming Systems - A Guidebook. ART Schriftenreihe. Zürich: Forschungsanstalt Agroscope Reckenholz-, 2012. http://www.biobio-indicator.org/deliverables/guidebook.pdf.

IEEP, Ecologic, and GHK Consulting. Study to analyse legal and economic aspects of implementing the Nagoya Protocol on ABS in the European Union. Annexes. Brussels and London: Institute for Eurpean Environmental Policy, 2012. http://ec.europa.eu/environment/biodiversity/international/abs/pdf/ABS%20FINAL%20REPORT%20-%20Annexes.pdf.

———. Study to analyse legal and economic aspects of implementing the Nagoya Protocol on ABS in the European Union. Executive Summary of the Final report for the European Commission, DG Environment. Brussels and London: Institute for Eurpean Environmental Policy, 2012. http://ec.europa.eu/environment/biodiversity/international/abs/pdf/FINAL%20REPORT.pdf.

———. Study to analyse legal and economic aspects of implementing the Nagoya Protocol on ABS in the European Union. Final report for the European Commission, DG Environment. Brussels and London: Institute for Eurpean Environmental Policy, April 2012.

IISD. 'WIPO IGC 23 Advances on Text on Intellectual Property and Genetic Resources - Biodiversity Policy & Practice'. Accessed 14 February 2013. http://biodiversity-l.iisd.org/news/wipo-igc-23-advances-on-text-on-intellectual-property-and-genetic-resources/.

IPEN. ‘Code of Conduct for Botanic Gardens Governing the Acquisition, Maintenance and Supply of Living Plant Material’, 2003. http://www.bgci.org/files/ABS/IPEN/ipencodeofconduct.doc.

ITGPR. Report on the First Round of the Project Cycle of the Benefiit Sharing Fund. Rome: Food and Agriculture Organisation, 2013. http://www.planttreaty.org/sites/default/files/Report_BSF.pdf.

———. ‘Sustainable Use of Plant Genetic Resources’. Accessed 14 February 2013. http://www.planttreaty.org/content/sustainable-use.

IUCN, and GMZ. The ABS Project - Facts, Expertise and Coherence in ABS Implementation, 2003. http://weavingaweb.org/absdocuments/eng_brochure.pdf.

Kew Botanic Gardens. ‘Principles on Access to Genetic Resources and Benefit-sharing for Participating Institutions’. Kew Botanic Gardens, n.d. http://www.kew.org/conservation/principles.html.

Koester, Veit. The Nagoya Protocol on ABS: ratification by the EU and its Member States and implementation challenges. Study. Paris, France: IDDRI, 20120612. http://www.iddri.org/Publications/Collections/Analyses/STUDY0312_VK_nagoya%20abs.pdf.

Ministère de l’écologie, de l’énergie du développement durable et de la mer. Stratégie nationale pour la biodiversité Présentation des indicateurs de suivi de la biodiversité proposés pour la métropole. Paris, France: Ministere de l’écologie, du développement durable, des transports et du logement, n.d. http://www.developpement-durable.gouv.fr/IMG/pdf/DGALN__1_indicateurs-biodiv-SNB-metropole.pdf.

Moore, Gerald, and Witold Tymowski. Explanatory Guide to the International Treaty on Plant Genetic Resources for Food and Agriculture. IUCN Environmental Law Paper. Gland: World Conservation Union, 2005. http://data.iucn.org/dbtw-wpd/edocs/EPLP-057.pdf.

Oldham, Paul. ‘An Access and Benefit-Sharing Commons? The Role of Commons/Open Source Licenses in the International Regime on Access to Genetic Resources and Benefit Sharing Discussion Paper’. 79. Montréal: Centre for Economic and Social Aspects of Genomics, 2009. http://sacredseedssanctuary.org/files/An%20Access%20and%20Benefit-Sharing%20Commons.pdf.

———. ‘Biodiversity and the Patent System: Towards International Indicators’. 105. Montréal: CBD Secretariat, 2007. http://www.cbd.int/doc/meetings/abs/abswg-05/information/abswg-05-inf-06-en.pdf.

Oldham, Paul, and Stephen Hall. A European Patent Indicator for Access to Genetic Resources and Benefit-Sharing. SSRN Working Paper, 30 April 2009. http://papers.ssrn.com/abstract=1397108.

Ruiz, Manuel, and Isabel Lapeña. A Moving Target: Genetic Resources and Options for Tracking and Monitoring their International Flows. IUCN Environmental Policy and Law Paper No. 67/3. ABS Series. Gland: IUCN, 2007. http://data.iucn.org/dbtw-wpd/edocs/EPLP-067-3.pdf.

Secretariat of the Convention on Biological Diversity. Access and Benefit-Sharing in Practice: Trends in Partnerships Across Sectors. Technical Series. Montréal, 2008.

http://www.cbd.int/doc/publications/cbd-ts-38-en.pdf.

———. ‘Global Strategy for Plant Conservation’. Secretariat of the Convention on Biological Diversity, 2002. http://www.bgci.org/files/Worldwide/GSPC/globalstrategyeng.pdf.

Smith, Mitchell. The Relationship Between TRIPs and the CBD: A Way Forward? SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, 18 May 2009. http://papers.ssrn.com/abstract=1403000.

Suneetha, M.S., and M.G. Chandrakanth. ‘Establishing a Multi-stakeholder Value Index in Medicinal Plants—an Economic Study on Selected Plants in Kerala and Tamilnadu States of India’. Ecological Economics 60, no. 1 (1 November 2006): 36–48. doi:10.1016/j.ecolecon.2006.02.010.

Sureetha, MS, and Balakrishna Pisupati. Benefit Sharing in ABS: Options and Elaborations. UNU-IAS Report. Yokohama, Japan: United Nations University Institute for Advanced Studies, 2009. http://www.ias.unu.edu/resource_centre/UNU_ABS_Report_Final_lowres.pdf.

Twarog, Sophie, and Promilia Kapoor. Protecting and Promoting Traditional Knowledge: Systems, National Experiences and International Dimensions. Geneva: United Nations, 2004. http://unctad.org/en/docs/ditcted10_en.pdf.

UEBT. ‘Access and benefit sharing: Understanding implications for industry’. Union for Ethical Biotrade, n.d. http://ro.unctad.org/biotrade/congress/BackgroundDocs/UEBT.ABS.2O12.pdf.

———. ‘Biodiversity Barometer 2012’. Union for Ethical Biotrade, 2012. http://www.ethicalbiotrade.org/news/wp-content/uploads/BAROMETER.2O12.web_1.pdf.

UPOV. Developments of Relevance to UPOV in Other International Fora. Geneva: International Union for the Ptotection of New Varieties of Plants, 31 October 2012. http://www.upov.int/edocs/mdocs/upov/en/cc_84/cc_84_9.pdf.

Walløe Tvedt, Morten, and Tomme Young. Beyond Access: Exploring Implementation of the Fair and Equitable Sharing Commitment in the CBD. ABS Series. Gland: IUCN, 2007. http://data.iucn.org/dbtw-wpd/edocs/EPLP-067-2.pdf.

WHO. WHO Guidelines on Good Agricultural and Collection Practices (GACP) for Medicinal Plants. Geneva: World Health Organisation, 2003. http://whqlibdoc.who.int/publications/2003/9241546271.pdf.

WIPO. ‘Database of Biodiversity-related Access and Benefit-sharing Agreements’. Accessed 17 January 2013. http://www.wipo.int/tk/en/databases/contracts/.

———. ‘IGC 23 Update: Negotiators Advance on Text on Intellectual Property and Genetic Resources’. Accessed 14 February 2013. http://www.wipo.int/tk/en/news/2013/news_0004.html.