Training Course in Access and Benefit Sharing from Genetic Resources and Associated Traditional Knowledge

1-5 June 2015
Harare, Zimbabwe

COURSE MANUAL AND RESOURCE BOOK

Prepared by:
The University of Cape Town
In collaboration with the ABS Capacity Development Initiative

THE ABS CAPACITY DEVELOPMENT INITIATIVE

Universiteit van Kaapstad · University of Cape Town · iYunivesithi yaseKapa

Access and Benefit Sharing from Genetic Resources and Associated Traditional Knowledge

Course manual and resource book for a training course in access and benefit sharing. The views and interpretations in this publication are those of the various contributors and are not attributable to the ABS Capacity Development Initiative, or the University of Cape Town.

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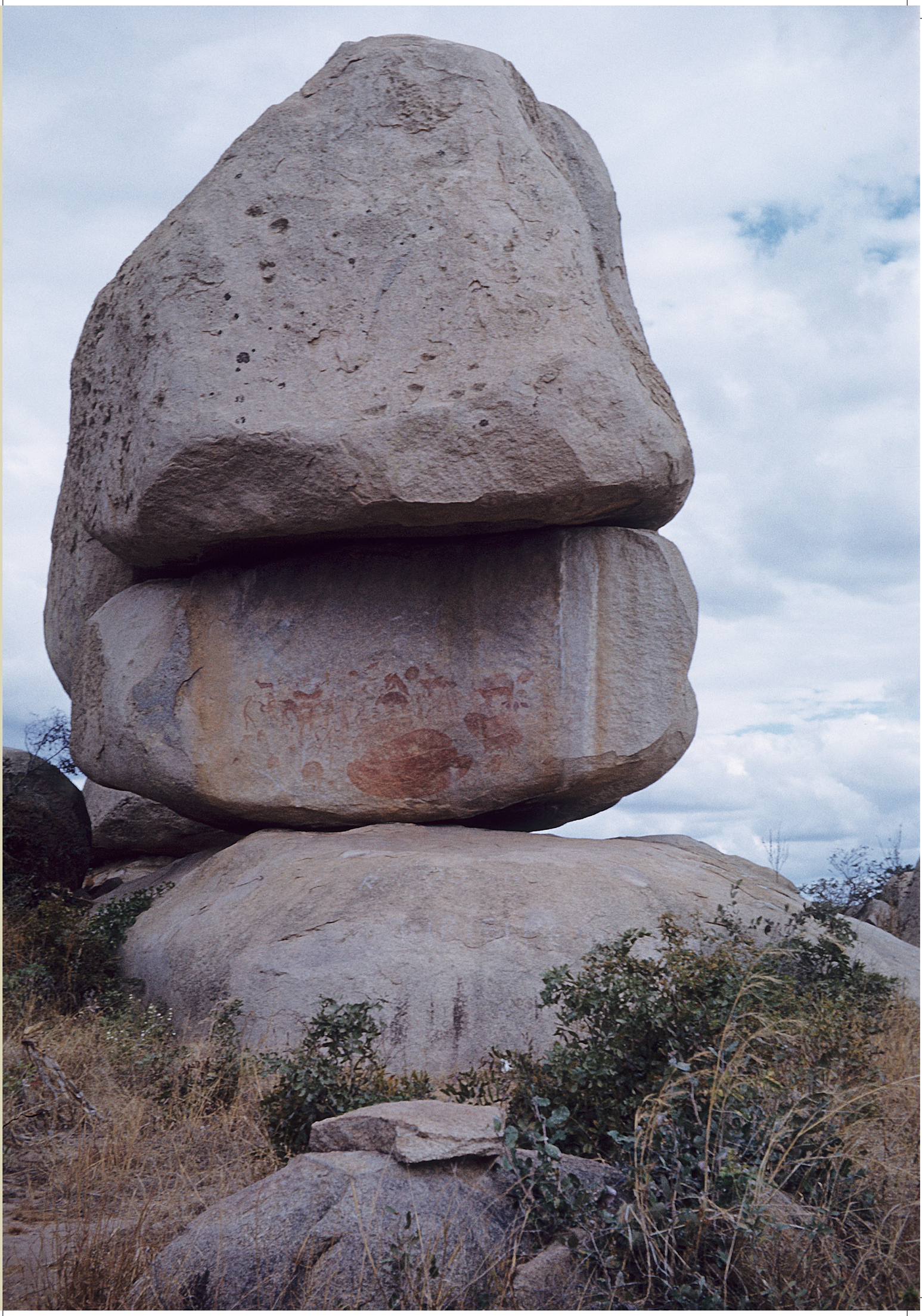


TRAINING PROGRAMME

DAY 1: MONDAY 1 JUNE 2015		
8:00	Registration	
8:30	**SESSION 1**: Welcome, Introductions, Training Objectives	Core Team
9:30	**SESSION 2**: ABS in Context	Rachel Wynberg
10:30	**TEA**	
11:00	**SESSION 3**: The ABC of ABS	Rachel Wynberg
12:00	**SESSION 4**: Mapping International Frameworks for ABS	Peter Munyi
12:30	**LUNCH**	
13:30	**SESSION 5**: The Nagoya Protocol	Andreas Drews
15:00	**TEA**	
15:30	**SESSION 6**: ABS Policies and National Laws in Africa	Andreas Drews
16:30	The ABS Race*	
17:00	Closure	
18:30	**Opening Ceremony: Drinks and Dinner**	
DAY 2: TUESDAY 2 JUNE 2015		
8:30	Recap of Day 1, Housekeeping issues	
9:00	**SESSION 7**: Intellectual Property Rights	Roger Chennells
10:30	**TEA**	
11:00	**SESSION 8**: Benefit Sharing and Biotrade	Gus Le Breton
13:00	**LUNCH**	
14:00	**SESSION 9**: Traditional Knowledge	Roger Chennells
15:30	**TEA**	
16:00	**SESSION 10**: Farmers' Rights	Peter Munyi
17:00	The ABS Race	
17:30	Closure	
DAY 3: WEDNESDAY 3 JUNE 2015		
8:30	**SESSION 11**: Field Trip	Core team and local partners
13:00	**LUNCH**	
14:00	Field Trip continues	
16:00	Return to hotel	

DAY 4: THURSDAY 4 JUNE 2015		
8:30	Recap of Days 2 and 3, Housekeeping issues	
9:00	**SESSION 12**: Understanding the Bioprospecting Process and Industry	Rachel Wynberg
11:00	**TEA**	
11:30	**SESSION 13**: Agriculture and ABS	Peter Munyi
13:30	**LUNCH**	
14:15	**SESSION 14**: Ex-situ Access and Benefit Sharing	Andreas Drews
15:30	**TEA**	
16:00	**SESSION 15**: Biopiracy, Rights and Benefits	Rachel Wynberg and the team
17:30	The ABS Race	
18:00	Closure	
DAY 5: FRIDAY 5 JUNE 2015		
8:30	Recap of Day 4, Housekeeping issues	
9:00	**SESSION 16**: Tools to Engage in the ABS Process	Andreas Drews and Roger Chennells
10:30	**TEA**	
11:00	**SESSION 16**: [Continued] Tools to Engage in the ABS Process	Rachel Wynberg and Core Team
12:00	**SESSION 17**: Negotiation	Roger Chennells
13:00	The ABS Race	
13:15	**LUNCH**	
14:00	**SESSION 18**: The Way Forward	Core Team
14:30	**SESSION 19**: Course Evaluation, Award Ceremony and Wrap Up	Core Team
15:30	**TEA AND CLOSURE**	

***The 'ABC Race' refers to a compulsory multiple choice test based on the day's sessions and key readings.**

CONTENTS

CONTENTS

LIST OF FIGURES

LIST OF TABLES

FOREWORD

ABS – THREE LETTERS FOR DEVELOPMENT

The global transfer of natural resources is at the basis of human development. For centuries, societies have transferred and traded biological and genetic resources. In doing so, they have drawn on the indigenous knowledge related to using these resources: coffee beans and aloes are just two historical examples. Today, the pharmaceutical, cosmetic, horticultural and many other industries continue to search globally for genetic resources to use in product development. The gains and benefits arising from those transfers, however, are hardly ever shared with the communities of origin. Until recently, developing countries had no recourse to ensure that the use of their resources, traditional knowledge and cultural practices could be recompensed.

The access and benefit-sharing principle of the Convention on Biological Diversity (CBD) provides development opportunities in this regard. It is the third objective of the Convention which is aimed at 'regulating access to genetic resources and ensuring the fair and equitable sharing of benefits arising out of their utilisation'. In a nutshell, this means that where genetic resources are used for scientific or commercial purposes, the country of origin should benefit from this use. 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' (Nagoya Protocol), which was adopted at the 10th Conference of the Parties (COP) to the CBD in 2010, entered into force in October 2014. As of the end of April 2015, 58 countries had ratified the Protocol, including Benin, Botswana, Burkina Faso, Burundi, Comoros, Côte d'Ivoire, Democratic Republic of Congo, Egypt, Ethiopia, Gabon, Gambia, Guinea, Guinea-Bissau, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Niger, Rwanda, the Seychelles, South Africa, Sudan and Uganda. Other African countries are expected to deposit their instruments of ratification in the coming months at the United Nations. The Nagoya Protocol provides for a legally binding global framework for its Parties to implement ABS provisions of the CBD at the national level. The third objective of the CBD will thus be brought into reality through the setting up of the required governance structures and processes.

The overall objectives of the ABS framework are to:

- Generate benefits for poverty alleviation and nature conservation
- Support capacity development by transferring technologies, knowledge and skills
- Enhance social development
- Ensure accountability and good governance at all levels

Awareness of the contribution ABS can make to development and poverty alleviation in Africa is growing slowly at all levels, yet skills to harness this potential remain insufficiently developed.

For example, many actors at the political-administrative level are not aware of the development potential of ABS for Africa. There are barely any functioning national ABS regulations in place, and there are problems in implementing them if regulations exist at all. There is minimal dialogue between stakeholders, and as a result there is little awareness of their mutual (and often common) interests. Regional harmonisation of approaches at the AU level is in its early stages although the adoption of the African Union Strategic Guidelines for the Coordinated Implementation of the Nagoya Protocol on ABS in March 2015 by the 15th meeting of the African Ministerial Conference on the Environment (AMCEN) is an important step in this regard. However, inventories and information on the value of genetic resources are not available, and negotiation skills are not sufficiently developed. These factors are hampering the capacity of developing countries to develop and implement national regulations for the benefit of their people.

To address these challenges the ABS Capacity Development Initiative is supporting countries and sub-regional organisations to develop functioning and efficient regulatory ABS frameworks, Further, the ABS Initiative facilitates upon request the negotiation of ABS agreements between the different ABS stakeholders and supports them in developing the capacities and skills that are necessary to achieve mutually satisfactory outcomes. These include training in communication and negotiation skills, and sharing knowledge, information and best practice.

The contents of this training course are based on similar courses which were held in 2010 at the University of Cape Town, in 2011 at Strathmore University in Nairobi, in 2013 in Gaborone and in 2014 in Zanzibar. The material has been developed by the team at the Bio-economy Chair at the University of Cape Town in close cooperation with the ABS Capacity Development Initiative.

The training course will broaden the base of professionals who are familiar with ABS issues and enable them to be better prepared to face the various implementation challenges at national and regional level.

Andreas Drews
Manager, ABS Capacity Development Initiative
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

ACKNOWLEDGEMENTS

The production of this manual and the course which it accompanies would not have been possible without the generous financial support of the ABS Capacity Development Initiative.

This training manual has evolved over the past five years but its original template was the 'Training of the Trainers and Resource Manual on Access and Benefit Sharing from Genetic Resources and Associated Traditional Knowledge' (2009), prepared by the International Centre for Integrated Mountain Development (ICIMOD) in Kathmandu. Warm thanks are extended to Krishna Prasad Oli and Tara Devi Dhakal for their permission to use this material.

We also wish to thank the instructors who shared their knowledge, made time in their busy schedules to write summaries for inclusion in the manual, and presented on their work during the training programme – thereby making an invaluable contribution to strengthening capacity for implementing ABS on the African continent.

ACRONYMS AND ABBREVIATIONS

ABS	Access and Benefit Sharing
AMCEN	African Ministerial Conference on the Environment
ARIPO	African Regional Intellectual Property Organization
ATS	Antarctic Treaty System
BGCI	Botanic Gardens Conservation International
CBD	Convention on Biological Diversity
CBNRM	Community Based Natural Resource Management
CBO	Community Based Organisation
CGRFA	Commission on Genetic Resources for Food and Agriculture
COP	Conference of the Parties
CSIR	Council for Scientific and Industrial Research (South Africa)
DNA	Deoxyribonucleic Acid
EEU	Environmental Evaluation Unit
EITI	Extractive Industries Transparency Initiative
EMCA	Environmental Management and Coordination Act (Kenya)
EPA	Environmental Protection Agency (Liberia)
EPO	European Patent Office
FAO	Food and Agriculture Organization
FDA	Forest Development Authority (Liberia)
FDEA	Swiss Federal Department for Economic Affairs
FLO	Fairtrade Labelling Organization International
GIZ	German Agency for International Cooperation
GMO	Genetically Modified Organism
ICIMOD	International Centre for Integrated Mountain Development
IFPMA	International Federation of Pharmaceutical Manufacturers and Associations
IGC	WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore
IIED	International Institute for Environment and Development
ILO	International Labour Organization
ING	Interregional Negotiating Group
IPEN	International Plant Exchange Network
IPR	intellectual property right
ISE	International Society of Ethnobiology
ISSC-MAP	International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
IUCN	The World Conservation Union

LEITI	Liberian Extractive Industries Transparency Initiative
MAP	Medicinal and Aromatic Plants
MAT	Mutually Agreed Terms
MGR	Marine Genetic Resource
MOSAIICC	Microorganisms Sustainable Use and Access Regulation
MTA	Material Transfer Agreement
NCSTI	National Commission for Science, Technology and Innovation (Kenya)
NGO	Non-Governmental Organisation
NEMA	National Environmental Management Authority (Kenya)
OAU	Organization of African Unity
PBR	Plant Breeder's Right
PES	Payment for Ecosystem Services
PGRFA	Plant Genetic Resources for Food and Agriculture
PIC	Prior Informed Consent
PVP	Plant Variety Protection
PVR	Plant Variety Rights
R&D	Research and Development
REDD	Reduced Emissions from Deforestation and Forest Degradation
RNA	Ribonucleic Acid
SfAA	Society for Applied Anthropology
SMTA	Standard Material Transfer Agreement
TEG	Technical Expert Group
TK	Traditional Knowledge
TRIPS	Trade Related Aspects of Intellectual Property Rights
UCT	University of Cape Town
UEBT	Union for Ethical Biotrade
UNCCD	United Nations Convention to Combat Desertification
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNFF	United Nations Forum on Forests
UPOV	International Union for the Protection of New Varieties of Plants
WG 8(j)	Working Group on Article 8(j)
WGABS	Working Group on Access and Benefit Sharing
WHO	World Health Organization
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

INTRODUCTION

This manual has been developed by the team working through the Bio-economy Research Chair at the University of Cape Town, with support from the ABS Capacity Development Initiative. The manual is designed to accompany a course aimed at strengthening capacity in access and benefit sharing (ABS) implementation on the African continent, but also functions as a resource book.

Considerable attention has been placed on access and benefit sharing from the utilisation of genetic resources since the inception of the Convention on Biological Diversity (CBD) in 1992. However, due to the complex nature of ABS which combines aspects of science, conservation, trade, and legal elements – touching on a wide range of controversial and difficult issues - its practical implementation presents a substantial challenge.

Those responsible for implementing ABS in Africa are faced by further constraints. The continent is home to a diverse and unique range of biodiversity and rich repositories of associated traditional knowledge, both of which attract high levels of bioprospecting. However, with other urgent needs on the agenda such as spiralling poverty levels, environmental degradation and lack of infrastructural development, African nations are already hampered by limited technical capacity and find it demanding to also deal with the complexities of ABS in a constructive manner.

Prepared in order to strengthen the knowledge base of those responsible for implementing ABS in Africa and those affected by its implementation, this manual is thus aimed at policy-makers; parliamentarians; legislators; government officials; as well as members of NGOs, CBOs, national and international research institutions, and the private sector. Through this manual and the accompanying course, members of these groups will be exposed to practical experiences relating to bioprospecting and the diversity of sectors involved in ABS. Participants will also be provided with a suite of tools that can be used inter alia, to negotiate, develop and implement ABS agreements, policies and laws in their respective countries as well as track and monitor the use of genetic resources and traditional knowledge. Furthermore, it is envisioned that the course which this manual complements will contribute towards the development of an extensive African ABS network and strengthened regional cooperation on ABS issues.

READER'S GUIDE

This manual is divided into five sections – each representing one day of the course. Each section is divided into a number of sessions. An introductory heading indicates the duration, structure, instructor, and objectives of the session, and also lists key references. Each session consists of a summary or background information relating to the topic being presented and where appropriate, case studies are included and a list of additional resources given. The key references, additional resources as well as other useful material such as codes of conduct, pieces of legislation pertaining to ABS and peer-reviewed journal articles on ABS are included on a CD which can be found at the back of the manual.

Seminars will be complemented by group work and discussion sessions as deemed fit by the presenter. When necessary, instructions for activities will be handed out separately.

Towards the end of the manual information regarding the contributors and additional resources such as a glossary of terms, lists of the supplementary reading material contained in the CD and useful websites can be found.

At the close of each day, participants will be required to take a short multiple choice test (known as the 'ABS Race') based on the day's sessions and accompanying key readings. Full attendance of the course and completion of these tests are requirements to be met in order to qualify for a certificate.

Participants will be asked to evaluate the usefulness and effectiveness of each of the sessions at the end of the day, appraise the facilities and course in general at the end of the week, and complete a follow-up evaluation via a questionnaire approximately six months after the training.

Enjoy the course!
The Core Team

DAY ONE

SESSION 1

TRAINING OBJECTIVES

Duration 1h
Convenors Core team
Objectives

- To welcome and introduce participants.
- To clarify the training objectives.
- For participants to note their 'burning' ABS questions in their manuals for discussion on the last day.

The 'burning' ABS questions that I hope this course will answer, are:

SESSION 2

ABS IN CONTEXT

Duration 1h
Structure Presentation; Q&A; Discussion
Instructor Rachel Wynberg
Objective

- To explore the concept of benefit sharing in contexts other than the CBD.

Key Reference

- Wynberg, R. and Hauck, M. 2014. People, Power and the Coast: A Conceptual Framework for Understanding and Implementing Benefit Sharing. Ecology and Society 19(1): 27.

BENEFIT SHARING IN OTHER SECTORS

Although the term '**benefit sharing**' is now popular, the concept is not new. In the mining sector, for example, there have been heated debates for decades about the benefits communities receive from the exploitation of mineral resources, and ways in which these are fairly distributed. Other sectors involved in natural resource management such as water, forests, wildlife and fisheries are now embracing the concepts of '**access**' and '**benefit sharing**' as a way of spreading the costs and benefits of using and conserving ecosystems and their resources across actors. In the water sector, for example, benefit sharing is increasingly used to describe the way in which the risks and benefits are shared among different users of a catchment, or those impacted by dam construction. For example, traditional users of rivers and those displaced by dam construction, typically bear the environmental and social brunt of dams while city dwellers and industries receive the benefits. Benefit sharing is thus emerging in the water sector as a practical policy tool to achieve greater social inclusiveness, improve local livelihoods and to reinforce social equity as an approach to promote sustainability. In the fisheries and wildlife sectors, co-management has emerged as a mechanism to put in place arrangements that lead to more equitable benefit sharing.

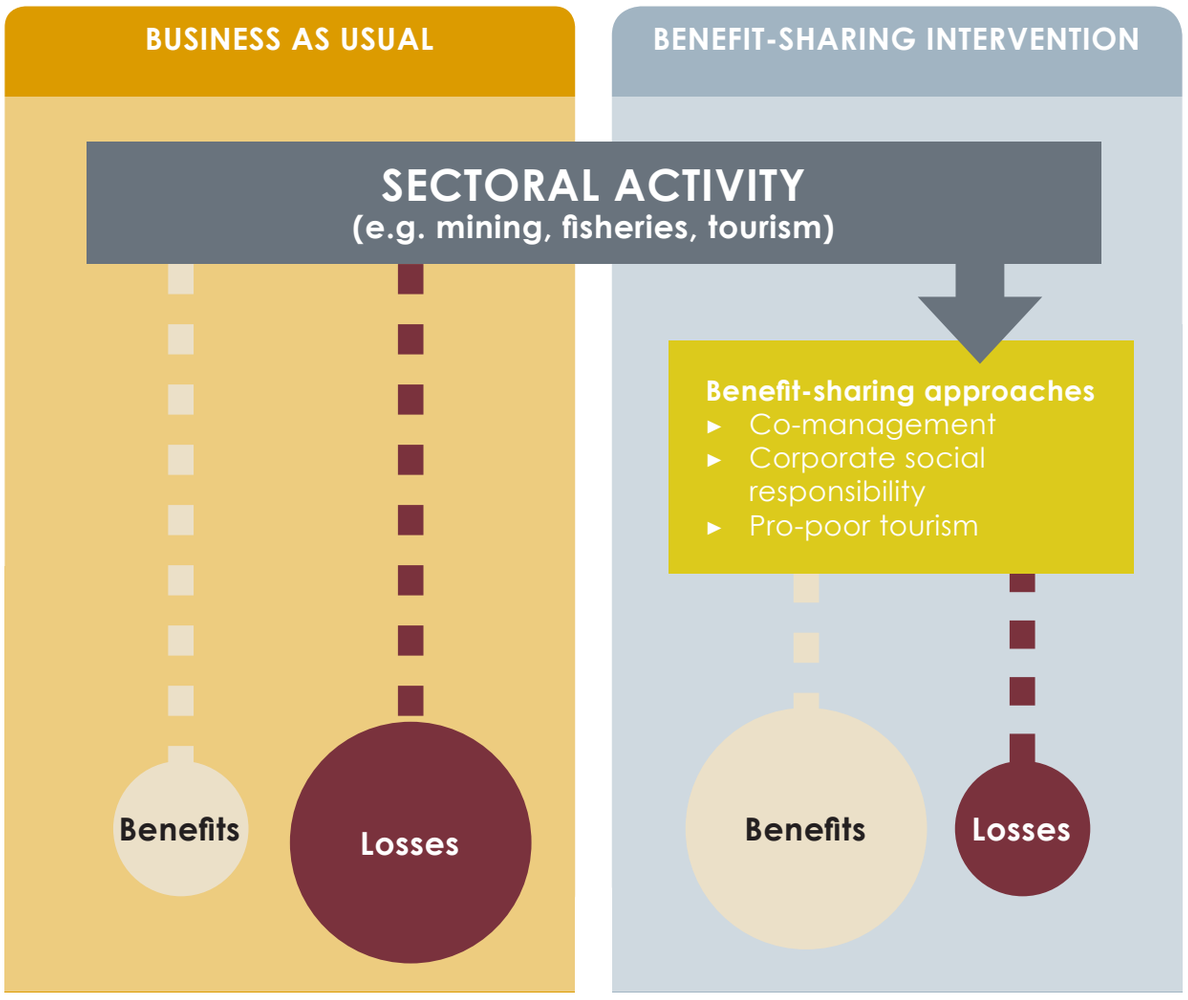


FIGURE 1. 'Business as Usual' and Benefit-Sharing Interventions in the Context of Activities Pursued by Different Economic Sectors *(Wynberg and Hauck 2014)*

There are many lessons to be learned from the experiences of community based natural resource management (CBNRM), especially in terms of community institutions and ways in which benefits are distributed at a local level. Moreover, access to natural resources requires certain procedures and community agreements to be in place and much work has taken place over the past thirty years to strengthen community rights and set in place proper processes for PIC. These are long-established ideas and processes and it is important not to reinvent the wheel and to learn from these experiences!

We can also talk of a '**spectrum**' of approaches for benefit sharing (see Figure 2). Corporate Social Responsibility, for example, is often seen as a 'soft' way of sharing benefits that does not really empower stakeholders whereas CBNRM - if properly implemented, can be a very powerful approach to improve equity.

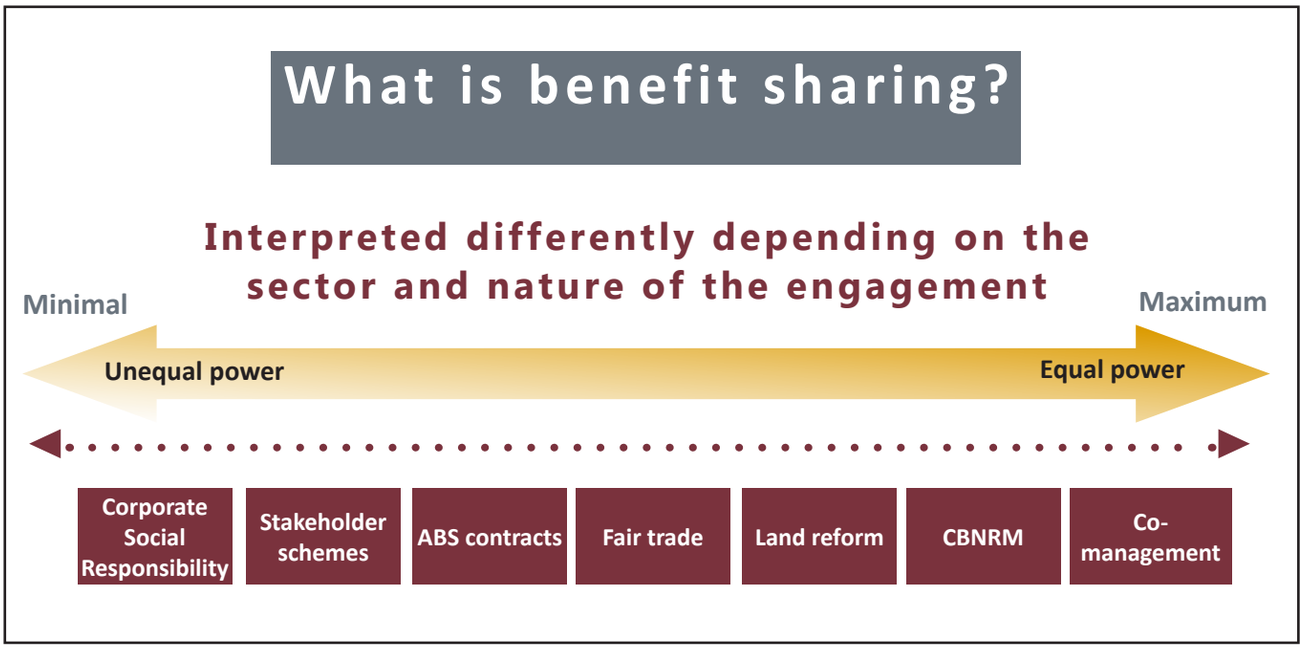


FIGURE 2. The Benefit-Sharing Spectrum *(Wynberg and Hauck 2014)*

Fair Trade and the related **FairWild Standard** are other mechanisms that can be used to support benefit sharing. A market based mechanism which provides benefits to those who increase the provision of ecosystem services is known as **Payments for Ecosystem Services (PES)**. In climate change discussions, there is much debate about **REDD** – meaning **Reduced Emissions from Deforestation and Forest Degradation**, a global mechanism to try and share the costs of climate change. These approaches are discussed in more detail below.

FAIR TRADE

Fair trade is a social movement and market-based approach that aims to promote sustainability and offers producers in developing countries improved terms of trade. The **Fairtrade Certification Mark** (pictured on the right) offers buyers the assurance that producers of goods labelled as such receive prices which not only cover the cost of sustainable production, but also an additional sum, called the Fairtrade Premium, which can be used for social, environmental, and economic development.

THE FAIRWILD STANDARD

An increasing demand for wild plants for food, cosmetics, and medicinal products has led to pressure on wild stocks and has impacted on the livelihoods of collectors around the world. In response, the FairWild Foundation was established in 2008 to promote the sustainable use of wild-collected ingredients, and ensure that those involved throughout the supply chain are given a 'fair deal'. The Foundation promotes adoption of the **FairWild Standard** and certification system for the sustainable management and collection of wild plants. The **FairWild Standard** is a tool for the implementation of the CBD by providing both public and private sectors with a means to achieve the core aims of biodiversity conservation, sustainable use and fair benefit sharing.

PAYMENT FOR ECOSYSTEM SERVICES

In the last decade, an incentive or market-based mechanism for environmental policy known as **Payments for Ecosystem Services (PES)**, has gained momentum. **PES** schemes refer to the compensation of individuals or communities for behavioural changes that improve the provision of ecosystem services such as water purification, flood mitigation, maintenance of biodiversity and landscape values, or carbon sequestration. Some believe **PES** schemes are an important answer for the environmental problems we face. Others, however, believe that market-based approaches are the reason why we ended up with such problems in the first place and therefore need to be looked at very critically.

(After Lucio Pedroni)

REDUCED EMISSIONS FROM DEFORESTATION AND FOREST DEGRADATION

It is estimated that between 15 and 20% of greenhouse gas emissions are caused by deforestation and forest degradation (Christophersen and Stahl 2011). In response to this a form of PES known as **Reduced Emissions from Deforestation and Forest Degradation (REDD)** has developed. **REDD** strategies aim to value intact forests more highly than those which have been felled for timber and roads, by attaching a monetary value to the carbon stored in trees – thus creating an incentive for forest protection. This carbon is assessed and quantified, and 'sold' to developed countries in the form of carbon offsets or credits.

Following on from the **REDD** concept, two other related programmes **REDD+** and **REDD++** have evolved. **REDD+** extends beyond deforestation and forest degradation, to include the role of conservation, sustainable forest management and enhancement of forest carbon stocks in reducing emissions. **REDD++** relates to all land uses which reduce deforestation, thus forming a landscape-based approach for reducing greenhouse gas emissions.

Like other forms of PES, **REDD** is highly controversial. For **REDD** to work, finance for actual **REDD** payments for emissions reductions needs to be in place. Some estimate this is as much as 15-25 billion US$ per year. Moreover, many are sceptical about whether **REDD** will in fact work to conserve forests, or whether it may simply perpetuate injustices and environmental degradation.

THINKING CONCEPTUALLY

Conceptually, benefit sharing comprises a number of different but strongly inter-related elements. These are illustrated in Figure 3 which shows a dynamic process by which interventions are introduced to distribute benefits in a more equitable manner to a range of actors who use natural resources. Actors will have a range of divergent or even conflicting interests, ranging from resource regulation, conservation, and human rights protection through to gleaning tax revenues, generating profit, local economic development, and poverty alleviation. Such interests are often at odds and benefit-sharing interventions are an important means to alleviate conflicts. Interventions require very careful participatory design and may have positive or negative outcomes. They are typically also located within a wider institutional, political, social and economic framework and are consequently influenced by multiple interlaced factors. Power relations and imbalances between and within actors are a central reason why benefits are distributed in the way that they are.

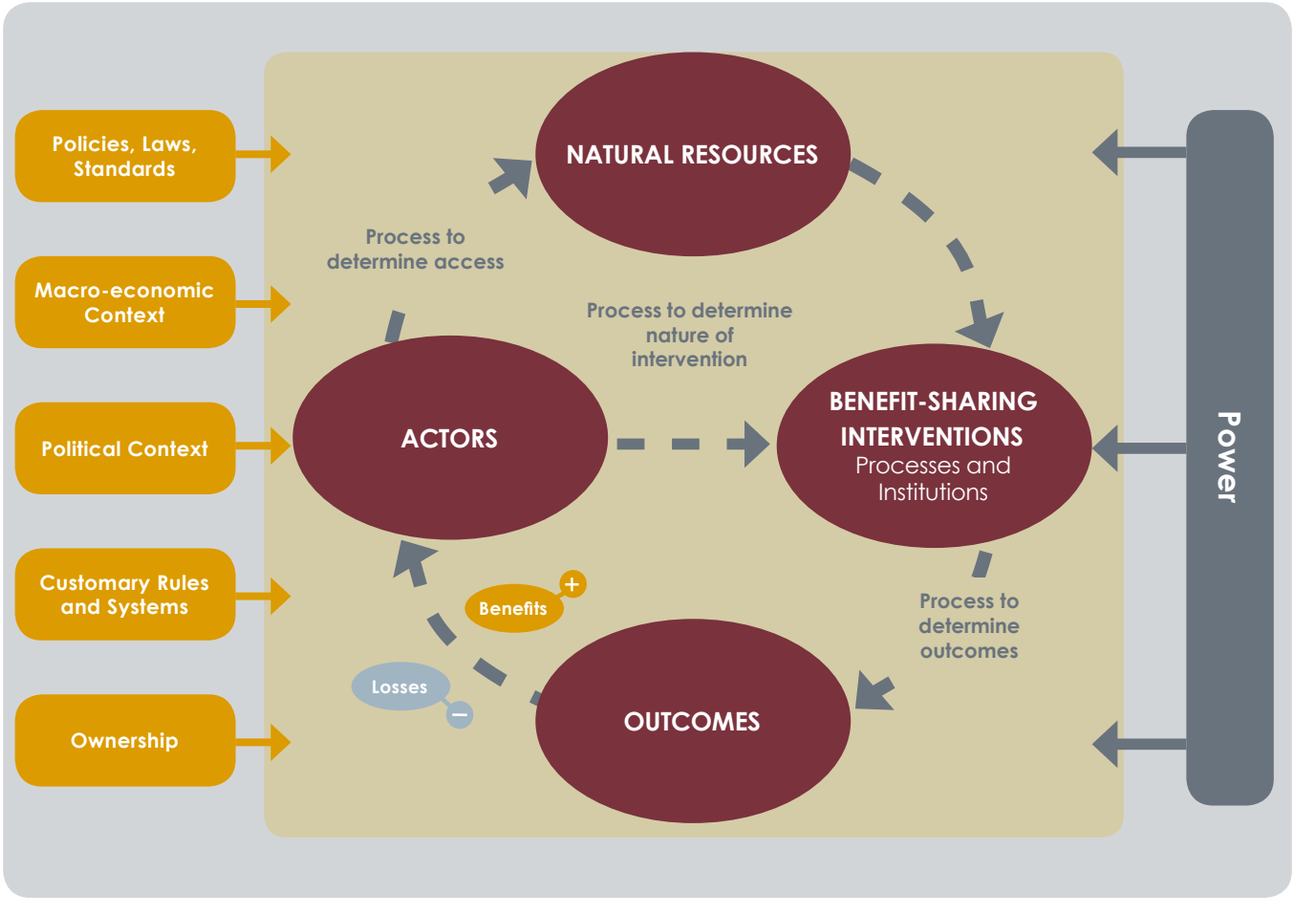


FIGURE 3. Conceptual Framework for Benefit Sharing *(Wynberg and Hauck 2014)*

THE UNION FOR ETHICAL BIOTRADE

The motto of the **Union for Ethical Biotrade (UEBT)**, a non-profit organisation established in 2007, is 'Sourcing with Respect'. The **UEBT** sets out Ethical BioTrade Principles and Criteria to promote the conservation of native biodiversity through sustainable use, and its members are encouraged to respect TK and share benefits fairly along the supply chain. The intention is that by adopting the Ethical BioTrade Principles and Criteria, companies can impact positively on provider countries and communities by contributing to local development and helping to preserve local ecosystems through equitable, long-term relationships. The **UEBT** signed an agreement with the CBD in December 2008 to cooperatively encourage the adoption of ethical biodiversity sourcing practices by companies involved in biotrade.

Union for Ethical BioTrade
SOURCING WITH RESPECT®

ADDITIONAL RESOURCES:

- Altman, J. 2009. Benefit sharing is no solution to development: Experiences from mining on Aboriginal land in Australia. In Wynberg, R. Schroeder D. and Chennells R. (eds). Indigenous peoples, Consent and Benefit Sharing. London: Springer.
- Christophersen, T. and Stahl, J. 2011. REDD-Plus and Biodiversity, CBD Technical Series No. 59. Montreal: Secretariat of the CBD.
- Kohli, K. and Bhutani, S. 2011. 'Chasing Benefits'. Issues on Access and Benefit Sharing to Genetic Resources and Traditional Knowledge with Reference to India's Biodiversity Regime. New Delhi: Kalpavriksh.
- Sunderland, T. 2011. Win-win is too simplistic a description for REDD+ - and possibly wrong. Bogor: CIFOR.
- UN Water 2008. Transboundary Waters: Sharing Benefits, Sharing Responsibilities.

USEFUL WEBSITES:

- http://www.ethicalbiotrade.org/
- http://www.fairtrade.net/
- http://www.fairwild.org/
- http://www.un-redd.org/

SESSION 3

THE ABC OF ABS

Duration 1h
Structure Presentation; Pair Work; Discussion
Instructor Rachel Wynberg
Objectives

- To review common ABS terminology and concepts.
- To introduce the principles which underpin ABS.

Key References

- ABS Management Tool http://www.sib.admin.ch/en/nagoya-protocol/abs-management-tool/index.html
- CBD 2010a. Access and Benefit Sharing Information Kit.
- CBD 2010b. Factsheet: Access and Benefit Sharing.
- Handbook of the Convention on Biological Diversity http://www.cbd.int/handbook/

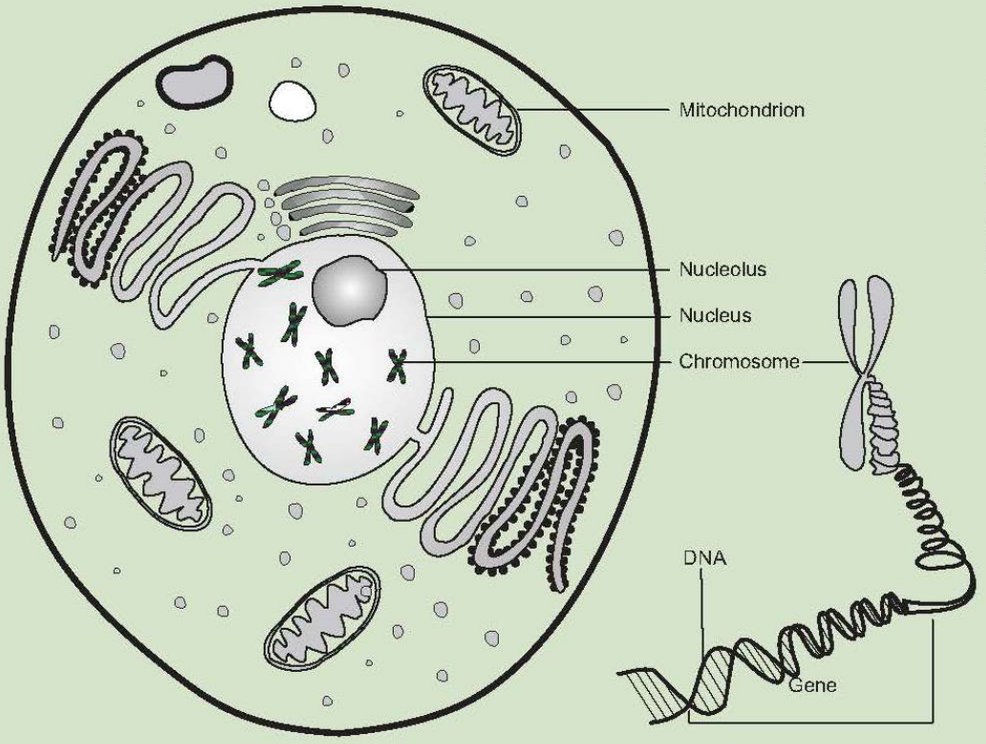
WHAT IS ABS?

Access and benefit sharing means many different things to different people. Originating from the 1992 Convention on Biological Diversity (CBD), the terms 'access and benefit sharing' stem from the unequal distribution of biodiversity throughout the world, the desire by biodiversity-poor but technology-rich industrialised countries to have continued access to these resources, and the concern of biodiversity-rich but technology-poor developing countries to benefit from exploitation of their resources. This course focuses on the use of ABS in the biodiversity sector, largely in the context of genetic resources, although the concept is increasingly being used across disciplines and sectors in different ways.

WHAT IS BIODIVERSITY?

Biodiversity refers to the variability that exists among living organisms from all sources including among other things, terrestrial, marine and other aquatic ecosystems and the ecological complexes which they are part of. This includes diversity within species, between species and their ecosystems (CBD, 2010a)

WHAT ARE GENES?



Typical animal cell showing the relationship between cell, cell nucleus, chromosomes, genes, and DNA

Living beings (animals and plants, including humans) are composed of living tissue, which is made up of numerous cells. Each cell is made up of several parts or organelles, each with specific functions, and including, for 'living beings', a cell nucleus, as shown in the diagram of a typical cell above. To understand the concepts of genes and genetic resources, it is important to look at the cell nucleus, the largest organelle and the 'brain' of the cell; and the centre for direction and coordination of the cell's metabolic and reproductive processes. The nucleus contains deoxyribonucleic acid (DNA) bound together with proteins to form bodies called chromosomes. The genes within these complexes are the cell's nuclear genome. Selected parts of the hereditary information in the DNA (particular genes) are transcribed into various forms of ribonucleic acid (RNA): messenger RNA, ribosomal RNA, and transport RNA. These all migrate to the cytoplasm through the nuclear pores; and here the ribosomal RNA is first packaged into 'ribosomes' in a nuclear body called the nucleolus. Together the different forms of RNA are used to translate the 'message' into proteins, ultimately determing all the components that together form the living organism.

THE CBD – A BRIEF INTRODUCTION

Born out of the global community's increased concern for biodiversity loss and its growing commitment towards sustainable development, the CBD was opened for signature on 5 June 1992 at the United Nations Conference on Environment and Development (the Rio 'Earth Summit'). By mid-2015 the Convention had 196 Parties. The CBD has three main objectives:

- the conservation of biodiversity,
- the sustainable use of its components, and
- the fair and equitable sharing of benefits arising from the use of genetic resources.

The Conference of the Parties (COP) to the CBD has established seven thematic programmes of work which correspond with the main biomes of the planet: Agricultural Biodiversity; Dry and Sub-humid Lands Biodiversity; Forest Biodiversity; Inland Waters Biodiversity; Island Biodiversity; Marine and Coastal Biodiversity; and Mountain Biodiversity.

In order to link these thematic programmes and thereby produce tools to facilitate the implementation of the Convention, a number of cross-cutting initiatives have been introduced by the COP, such as: the Aichi Biodiversity Targets; Access to Genetic Resources and Benefit Sharing; Protected Areas; Sustainable Use of Biodiversity; Tourism and Biodiversity; and Traditional Knowledge (TK), Innovations and Practices - to name but a few. The main focus of this course is found within the cross-cutting issue of **Access to Genetic Resources and Benefit Sharing.**

ABS: CONCEPTS AND TERMINOLOGY

The terms and concepts commonly used in ABS are listed in Table 1 - for a more comprehensive list, see the **Glossary** at the end of this manual.

ABS Terminology and the CBD

Many, but not all, of the terms commonly used in the context of ABS are defined in the CBD. The following terms (among others) are defined in **Article 2** of the CBD: biological diversity; biological resources; biotechnology; genetic resources; and genetic material.

Although **prior informed consent (PIC)** and **mutually agreed terms (MAT)** are frequently encountered in ABS, they are NOT defined in the CBD. They are however mentioned in **Article 15** of the CBD, and further expanded upon in the **Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization (Bonn Guidelines)**. (See the box below). Other terms – i.e. '**Utilisation of genetic resources**' and '**derivative**' are defined in **Article 2** of the Nagoya Protocol.

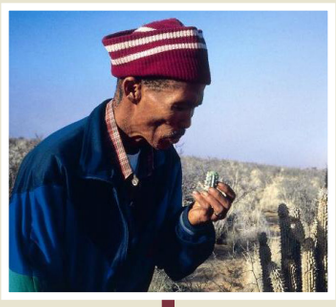
What are the Bonn Guidelines?

Adopted at the 6th COP in 2002, the **Bonn Guidelines** are a set of voluntary guidelines aimed at assisting Parties, governments and other stakeholders to develop ABS strategies and identifying the steps involved in the ABS process. The **Bonn Guidelines** define the roles of users and providers, emphasise the obligation of seeking PIC, and outline the basic requirements of MAT.

TABLE 1. Key ABS Concepts and Terms

Access	'Access' could relate to a number of activities such as entering a location or place where genetic resources are found, surveying activities or acquiring genetic resources for various purposes.
Benefit Sharing	Benefit sharing can be defined as 'the division and distribution of monetary and non-monetary benefits in a way that has equitable outcomes and is procedurally fair' (*Wynberg and Hauck 2014*).
Biological Resources	Biological resources refer to a broader category which includes genetic resources, organisms or parts thereof, populations or any other biotic component of ecosystems with actual or potential use or value for humanity.
Bioprospecting	Bioprospecting is defined as the systematic search for and development of new sources of chemical compounds, genes, microorganisms, macro-organisms, and other valuable products from nature. Thus, it entails the search for economically valuable genetic and biochemical resources from nature.
Biotrade	Activities relating to the commercial collection, processing and sale of products derived from biodiversity are known as biotrade.
Genetic Resources	Genetic resources are defined as genetic material of actual or potential value - genetic material being any material of plant, animal, microbial or other origin containing functional units of heredity (i.e. DNA or RNA).
Mutually Agreed Terms	Mutually agreed terms refer to an agreement reached between providers and users of genetic resources on the conditions of access and use of the resources, and the benefits to be shared between the parties.
Prior Informed Consent	The key elements of prior informed consent - commonly abbreviated to PIC, are: - **prior** – before access takes place, - **informed** – based on adequate disclosure of the intended use, and - **consent** – explicit consent of the government or provider of resources and/or knowledge.
Provider	Governments, private land owners, researchers or communities who provide genetic resources and/or TK are known as providers.
User	Users are those who access genetic resources and/or TK, such as researchers, traders, or members of industry investigating commercial potential.
Utilisation of Genetic Resources	The 'utilisation' of genetic resources is defined by the Nagoya Protocol as 'research and development on the genetic and/or biochemical composition of genetic resources, including through the application of biotechnology'.

WHAT IS TRADITIONAL KNOWLEDGE?



In the context of access and benefit sharing, TK refers to the knowledge, innovations and practices of indigenous and local communities related to genetic resources. This TK has been developed through the experiences of communities over centuries, adapted to local needs, cultures and environments and passed down from generation to generation (*CBD, 2010a*)

TRADITIONAL KNOWLEDGE AND THE CBD

Respecting, protecting and maintaining TK are important facets of the CBD. In fact, the CBD is the first legally-binding international instrument which recognises the important role of TK. The text of the CBD contains several references to TK and the role of indigenous and local communities, the most prominent being **Article 8(j)** which states that:

> *Each contracting Party shall, as far as possible and as appropriate:*
>
> *(j) Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilisation of such knowledge, innovations and practices.*

Other relevant sections are:

Article 10(c) which requires Parties to 'protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation and sustainable use requirements';

Article 17 which requires Parties to 'facilitate the exchange of information .... relevant to the conservation and sustainable use of biodiversity ... [including] indigenous and traditional knowledge'; and

Article 18.4 Parties are required to 'encourage and develop methods of cooperation for the development and use of technologies, including indigenous and traditional technologies'.

The COP to the CBD has since 2000 tasked the Working Group on Article 8(j) and Related Provisions to work towards implementing these provisions.

PRINCIPLES OF ACCESS AND BENEFIT SHARING

The CBD establishes **three main principles** to guide member states in implementing ABS. The first principle is known as **'prior informed consent' (PIC)**. While there is no definition for **PIC** in the text of the CBD, it entails acquiring the explicit permission of a provider country's government before access takes place, upon truthful declaration and full disclosure of the intended use of a resource. Each member state may formulate conditions under which **PIC** is to be granted. Obtaining **PIC** at a local level, for example from indigenous communities, is not a CBD requirement, but it is implied. Obtaining **PIC** from communities before using their knowledge or resources is well recognised as international best practice.

The second principle requires parties to establish the terms of exchange by mutual agreement – called '**mutually agreed terms**'. These terms commonly stipulate the legal requirements for acquisition, permitting arrangements, supply restrictions and the conditions for benefit sharing.

Finally, it is expected that benefits should be shared fairly with local providers and countries through a process termed '**fair and equitable benefit sharing**'. Fair **benefit sharing** is guided by the CBD and requires user countries to negotiate agreements with provider countries where access to genetic resources is rewarded through monetary and non-monetary means.

Examples of **monetary benefits** include up-front or milestone payments, and royalties on net sales or licensing agreements. **Non-monetary benefits** may include research exchanges, donations of equipment, sharing of technology, joint publications, local economic development, transfer of knowledge, capacity-building or training. The Bonn Guidelines give further guidance on the types of benefits that could be considered – this information is also found as an appendix to the Nagoya Protocol.

TABLE 2. CBD Provisions Relevant to ABS

ARTICLE	DETAILS
Preamble	The desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations, and practices relevant to the conservation of biological diversity and the sustainable use of its components.
Article 1	One of the three objectives of the CBD is the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources, by access to genetic resources and technology transfer.
Article 8(j)	Requires parties to the CBD to respect, preserve and maintain the knowledge, innovations and practices of indigenous and local communities, promote their wider application with the approval and involvement of knowledge holders, and encourage the equitable sharing of the benefits arising from their utilisation.
Article 10(c)	Requires parties to the CBD to protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation and sustainable use requirements.
Article 15(1)	States have the sovereign right to regulate access.
Article 15(2)	Requires parties to the CBD to facilitate access for environmentally sound purposes and not impose restrictions that are counter to the CBD.
Article 15(3)	Provides that only the country of origin or a country that has acquired genetic resources in compliance with the CBD may grant access to genetic resources.
Article 15(4)	Provides for access only on mutually agreed terms.
Article 15(5)	Provides for access subject to the prior informed consent of providers.
Article 15(6)	Provides for full participation of the provider in scientific research based on the genetic resources available.
Article 15(7)	Requires parties to the CBD to take legislative, administrative, or policy measures to share benefits from research and development and commercialisation equitably and on mutually agreed terms.
Article 16(3)	Requires parties to the CBD to take legislative, administrative, or policy measures to provide access to and transfer of technology that makes use of genetic resources accessed on mutually agreed terms and in accordance with international law.
Article 18(4)	Requires parties to the CBD to encourage and develop methods of cooperation for the development and use of technologies, including indigenous and traditional technologies.
Article 19(1)	Requires parties to the CBD to take legislative, administrative, or policy measures to ensure the effective participation by providers in biotechnological research on genetic resources.
Article 19(2)	Provides for priority access to the results and benefits from biotechnologies based on the genetic resources provided.

INTRODUCTION TO THE NAGOYA PROTOCOL

At the 10th COP to the CBD in October 2010, 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' (Nagoya Protocol on ABS)** was adopted. The Nagoya Protocol entered into force on 12 October 2014, 90 days after the date of deposit of the fiftieth instrument of ratification. As of May 2015, 59 states were parties to the agreement.

The **Nagoya Protocol on ABS** signifies new challenges for ABS regulation and implementation. On the one hand, existing national and regional ABS regulations will have to be reviewed to assess the extent to which they comply with the provisions of the protocol. On the other hand, new ABS regulations will have to be drafted in accordance with new international legal requirements. These may include, for example, the voluntary adoption of an internationally recognised certificate of compliance, the establishment of effective checkpoints, or disclosure requirements for patent applications. (For more on the Nagoya Protocol, see **SESSION 5**).

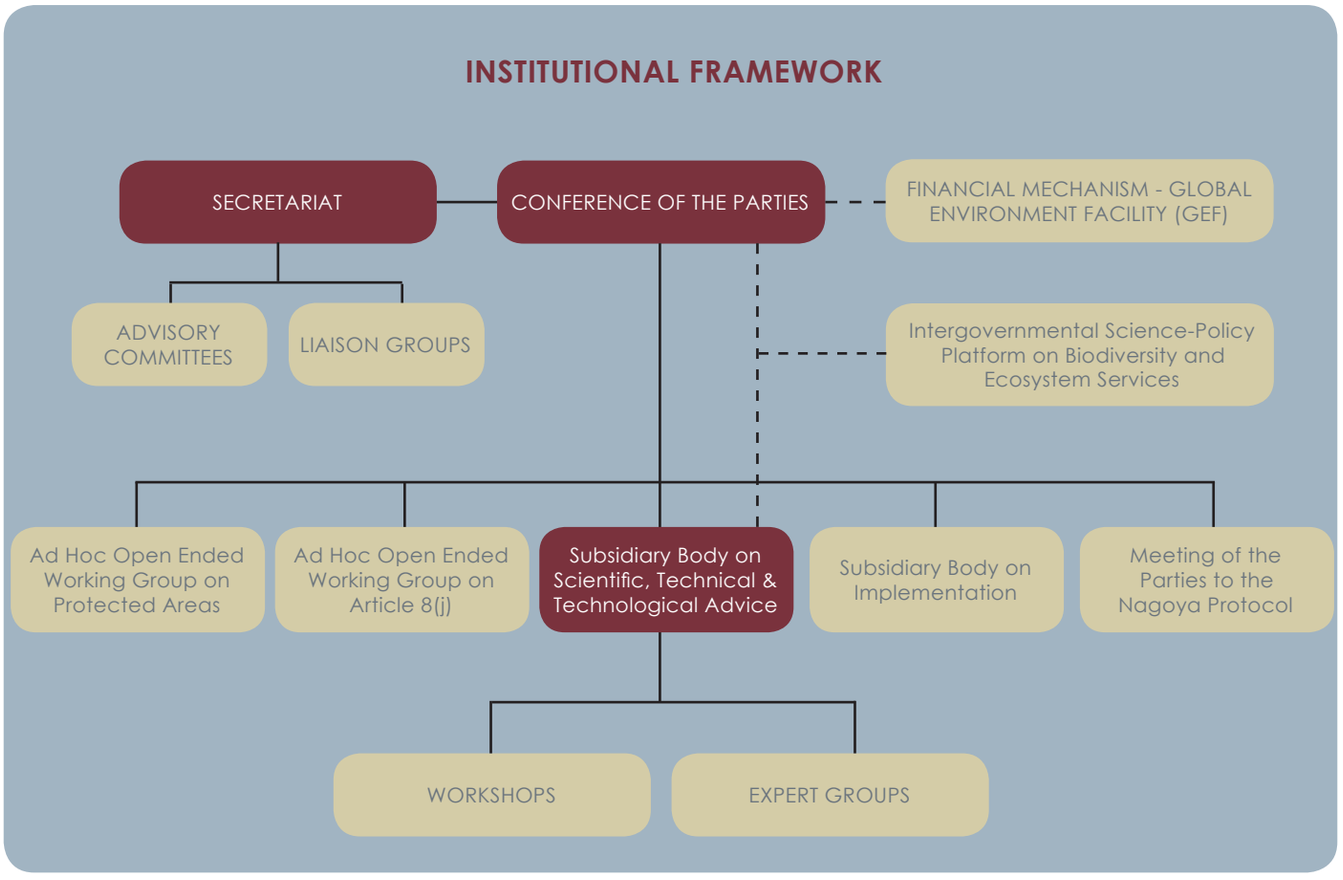


FIGURE 4. Institutional Framework of the CBD *(Secretariat of the CBD)*

TABLE 3. ABS Timeline 1998 – 2015

COP 4 May 1998	Parties decide to establish a regionally-balanced expert panel on ABS. The panel subsequently develops a set of recommendations, including on PIC, MAT, approaches for stakeholder involvement and options to address ABS within the CBD framework.
COP 5 May 2000	Parties mandate the newly established Working Group on ABS (WGABS) to develop guidelines on PIC and MAT; participation of stakeholders; benefit-sharing mechanisms; and the preservation of TK.
WGABS 1 Oct 2001	The WGABS develops the draft Bonn Guidelines; identifies elements for a capacity building action plan; and considers the role of intellectual property rights (IPRs) in the implementation of ABS agreements.
COP 6 Apr 2002	Parties adopt the Bonn Guidelines and consider the role of IPRs in the implementation of ABS arrangements, and the relationship with the Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS) of the World Trade Organization.
WSSD Sep 2002	Leaders of the world call for negotiating an international regime to promote and safeguard the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.
WGABS 2 Dec 2003	The WGABS debates the process, nature, scope, elements and modalities of an international ABS regime, and considers measures to ensure compliance with PIC, MAT, and capacity building.
COP 7 Feb 2004	Parties adopt the Action Plan on Capacity Building for ABS, mandate the WGABS to elaborate and negotiate an international ABS regime, and set out the terms of reference for the negotiations.
WGABS 3 and 4 Feb 2005 Jan 2006	The WGABS discusses options for the design of an international regime on ABS and produces a draft text to serve as the basis for future negotiations. It also addresses approaches to complement the Bonn Guidelines, such as an international certificate of origin; measures to ensure compliance with PIC and MAT; and indicators for ABS.
COP 8 Mar 2006	Parties instruct the WGABS to complete its work before COP 10 and request the Working Group on Article 8 (j) (WG 8(j)) to contribute on issues relevant to TK.
WGABS 5 and 6 Oct 2007 Jan 2008	The WGABS considers substantive elements of an international regime on ABS; and produces a short working document on the international regime, consisting of sections on the main components and lists of items to be further elaborated.
COP 9 May 2008	Parties adopt a roadmap for the negotiation of the international regime, establish three technical expert groups (TEGs); and instruct the WGABS to finalise the international regime by COP 10.
TEG on Concepts, Terms, Working Definitions and Sectoral Approaches Dec 2008	The group addresses the different ways of understanding relevant terms and the implications of each interpretation; different forms of utilisation of genetic resources; sector specific characteristics of ABS agreements; and options and approaches for taking these different characteristics into account to bring coherence to ABS-related practices in different sectors.

TEG on Compliance Jan 2009	The group of experts considers measures to facilitate access to justice by foreign plaintiffs; support recognition and enforcement of judgments across jurisdictions; provide remedies and sanctions to ensure compliance with national ABS legislation; voluntary measures to enhance compliance; the usefulness of the concept of misappropriation and misuse; compliance measures that take account of customary laws; and compliance measures for research with non-commercial intent.
WGABS 7 Apr 2009	The WGABS focuses on an operational text on the objective, scope, compliance, fair and equitable benefit sharing, and access.
TEG on TK Associated with Genetic Resources Jun 2009	The group addresses legal and technical issues concerning access to genetic resources and associated TK.
WG 8(j) 6 Nov 2009	The group works towards concluding negotiations on an ethical code of conduct to ensure respect for the cultural and intellectual heritage of indigenous and local communities.
WGABS 8 Nov 2009	The Working Group addresses operative text on all components of the regime, and discusses its legal nature.
WGABS 9 Mar, Jul, Sept and Oct 2010	After suspending the Working Group in March due to strong disagreement on key issues such as scope and disclosure requirements, the Working Group convenes an Interregional Negotiating Group (ING) which meets in Jul and Sep to continue negotiations of the draft Protocol.
COP 10 Oct 2010	Parties adopt 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.
ICNP Oct 2010	At COP 10, an Open-ended Ad Hoc Intergovernmental Committee (ICNP) for the Nagoya Protocol on ABS was established.
COP 11 Oct 2012	At the 11th COP held in Hyderabad, India, a decision on Article 8(j), relating to indigenous and local communities was adopted which provided a major component of work on customary sustainable use. Governments also provided guidance to the preparations for the entry into force of the Nagoya Protocol and agreed that a third meeting of the Intergovernmental Committee for the Nagoya Protocol (ICNP) will be needed in the upcoming two years.
COP 12 Oct 2014	At the 12th and most recent COP, held in October 2014 in Pyeongchang, Republic of Korea, the entry into force of the Nagoya Protocol was welcomed, and seen as a significant step towards meeting the third objective of the Convention.
NP COP-MOP 1 Oct 2014	The first meeting of the Conference of the Parties serving as the meeting of the Parties to the Nagoya Protocol on Access and Benefit-sharing, was held concurrently with COP 12.

(Secretariat of the ABS Capacity Development Initiative, 2011. ABS: Background Reader – Current Status and Future Prospects. Working paper, May 2011; www.cbd.int.*)*

SESSION 4

MAPPING INTERNATIONAL FRAMEWORKS FOR ABS

Duration 30min
Structure Interactive plenary exercise
Instructor Peter Munyi
Objectives

- To introduce international frameworks for ABS, the roles of each and their interactions.
- To understand the influences of international ABS frameworks on regional, national and local policies and processes.

Key References

- CBD 2009a. Study on the relationship between an international regime on ABS and other instruments and forums that govern the use of genetic resources: The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) and the Commission on Genetic Resources for Food and Agriculture (CGRFA) of the Food and Agriculture Organization (FAO) – UNEP/CBD/WG-ABS/7/INF/3/Part.1
- CBD 2009b. Study on the relationship between an international regime on ABS and other instruments and forums that govern the use of genetic resources: The World Trade Organization (WTO); the World Intellectual Property Rights Organization (WIPO); and the International Union for the Protection of New Varieties of Plants (UPOV) - UNEP/CBD/WG-ABS/7/INF/3/Part.2

INTERNATIONAL FRAMEWORKS FOR ABS

In order to implement ABS adequately in Africa, it is important to understand how the concept relates to other international frameworks. Some of these frameworks, such as the ITPGRFA of the FAO, share similarities with the CBD (although there are important differences too). Others, for example the Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement under the WTO, may be interpreted as incompatible with the CBD, and by extension the ITPGRFA and the Nagoya Protocol. This session explores these frameworks to provide an overview of those relevant to ABS.

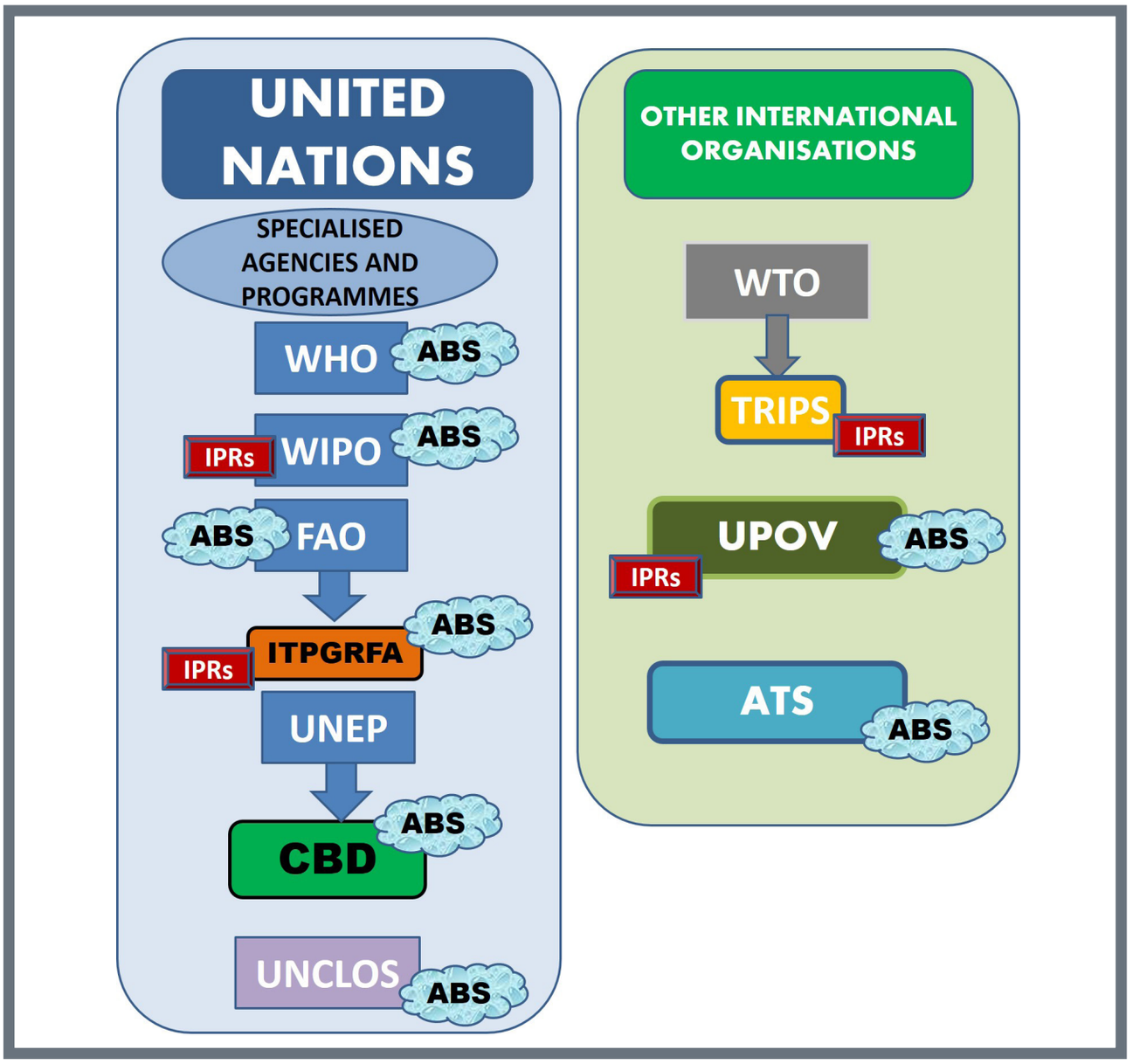


FIGURE 5. International Frameworks for ABS

ADDITIONAL RESOURCES:

- Africa Union Commission 2015. African Union Practical Guidelines for the Coordinated Implementation of the Nagoya Protocol in Africa.
- Africa Union Commission 2011. Gap Analysis Report on the Africa Model Law for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources.
- CBD 2009c. Study on the relationship between an international regime on ABS and other instruments and forums that govern the use of genetic resources: The Antarctic Treaty System (ATS) and the United Nations Convention on the Law of the Sea (UNCLOS) - UNEP/CBD/WG-ABS/7/INF/3/Part.3
- FAO Commission on Genetic Resources Background Papers Nos. 1-62. Available at: http://www.fao.org/nr/cgrfa/cgrfa-back/en/?no_cache=1

SESSION 5

THE NAGOYA PROTOCOL

Duration 1h30
Structure Presentation; Q&A; Activity; Discussion
Instructor Andreas Drews
Objectives

- To give some background on the negotiations of the Nagoya Protocol.
- To provide an overview of the key components of the Nagoya Protocol and the obligations of Parties with respect to its implementation.

Key References

- Glowka, L. and Normand, V. 2012. The Nagoya Protocol on Access and Benefit-sharing: Innovations in International Environmental Law. In Morgera, E., Buck, M. and Tsioumani, E. (eds), The 2010 Nagoya Protocol on Access and Benefit Sharing in Perspective – Implications for International Law and Implementation Challenges. Leiden: Martinus Nijhoff Publishers/Brill.
- Nagoya Protocol Portal, CBD Website: Access and Benefit-sharing Information Kit, CBD; Fact Sheet on the Nagoya Protocol on ABS. Available at http://www.cbd.int/abs

WHAT IS THE NAGOYA PROTOCOL?

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is a new international treaty that builds on the CBD, with a view to support the implementation of one of the three objectives of the Convention: **the fair and equitable sharing of benefits arising from the utilisation of genetic resources.**

It was adopted on 29 October 2010, in Nagoya, Japan, following six years of negotiations under the auspices of the CBD, and entered into force on 12 October 2014. As of May 2015, 59 states had ratified the agreement.

WHY IS THE NAGOYA PROTOCOL IMPORTANT?

The Nagoya Protocol is a response on the one hand, to concerns of developing countries related to the misappropriation and misuse of their genetic resources and associated TK, and on the other hand, to concerns of users of genetic resources regarding the absence of clear procedures for obtaining access to genetic resources in a number of countries.

The Nagoya Protocol, once implemented, will create greater legal certainty for both providers and users of genetic resources:

- by establishing clear and transparent procedures for access to genetic resources; and
- by helping to ensure the sharing of benefits once genetic resources leave the provider country through its new obligations related to compliance.

WHAT DOES THE NAGOYA PROTOCOL COVER?

The Protocol covers access to genetic resources and TK associated with genetic resources that are covered by the CBD, as well as the benefits arising from their utilisation.

The Protocol has also provided greater clarity regarding the application of ABS by establishing that '"utilisation of genetic resources" means to conduct research and development on the genetic and/or biochemical composition of genetic resources, including through the application of biotechnology...' (Article 2 of the Nagoya Protocol).

WHAT ARE KEY OBLIGATIONS OF THE NAGOYA PROTOCOL?

The Nagoya Protocol establishes clear obligations for its Parties to take measures in relation to access to genetic resources, the sharing of benefits arising from their utilisation, and compliance with PIC and MAT. It also provides for a number of supportive measures to enable the proper implementation of the international ABS system.

ACCESS

In response to the need of users for greater legal certainty, the Nagoya Protocol builds on the ABS provisions of the CBD and establishes that Parties requiring PIC are to take a number of measures with a view to:

- Provide for legal certainty, clarity and transparency
- Provide for fair and non-arbitrary rules and procedures
- Provide information on how to apply for PIC
- Provide for a clear and written decision by a competent national authority
- Provide for the issuance of a permit when access is granted
- Establish clear rules and procedures for establishing MAT, such as a dispute settlement clause, terms for benefit sharing, subsequent third party use and changes of intent

BENEFIT SHARING

In accordance with the CBD, benefit-sharing measures are to provide for the fair and equitable sharing of benefits arising from the utilisation of genetic resources, as well as subsequent applications and commercialisation, with the provider country.

The sharing of benefits is to be based on mutually agreed terms. Benefits may be monetary (such as royalties) or non-monetary (such as sharing of knowledge, sharing of the results of research or technology transfer). A list of potential benefits is contained in the Annex to the Protocol.

The Protocol also encourages users and providers to direct benefits arising from the utilisation of genetic resources towards the conservation and sustainable use of its components, thereby establishing a clear relationship with the first two objectives of the CBD.

COMPLIANCE

With a view to ensure the sharing of benefits once genetic resources have left the provider country, the Nagoya Protocol imposes a new set of obligations on Parties as users of genetic resources:

- to comply with ABS legislative and regulatory requirements of provider countries;
- to support compliance with MAT by users and providers; and
- to monitor the utilisation of genetic resources, including through the establishment of an internationally recognised certificate of compliance and the designation of at least one checkpoint.

In addition, recognising that different types of users (researchers, industry) in different sectors (e.g. pharma, cosmetics, agriculture) have different ways of using genetic resources, the development, update and use of model contractual clauses for mutually agreed terms, as well as codes of conduct, guidelines and best practices and/or standards for different sectors are to be encouraged by Parties.

INDIGENOUS AND LOCAL COMMUNITIES

The Nagoya Protocol also includes a number of provisions of direct relevance to indigenous and local communities, in particular with respect to access to TK associated with genetic resources and the fair and equitable sharing of benefits arising from its use.

The Protocol aims to ensure that indigenous and local communities obtain a fair share of benefits from the use of: their TK associated to genetic resources; genetic resources, in cases where they have established rights to grant access to them, in accordance with national legislation. Access will be subject to their PIC, taking into account their customary laws and procedures.

SUPPORTIVE MEASURES TO ASSIST IMPLEMENTATION

In order to become operational, Parties to the Protocol will need to adopt legislative, administrative or policy measures to implement the provisions of the Nagoya Protocol in light of their national circumstances. A number of tools and mechanisms are also established by the Protocol which support the implementation of a coherent international ABS system. These include: the ABS Clearing House as a central information exchange system, capacity-building to support implementation, awareness-raising, technology transfer, and financial support.

NAGOYA PROTOCOL IMPLEMENTATION

It is important to note that all of the obligations of the Protocol apply to all Parties to the Protocol and that all countries that ratify the Protocol are therefore meant to take measures to meet their obligations both as providers and users of genetic resources.

(Adapted from the 'CBD Factsheet on the Nagoya Protocol' and the 'Access and Benefit-sharing Information Kit', 2011, Secretariat of the Convention on Biological Diversity.)

ADDITIONAL RESOURCES:

- The text to the CBD.
- The text to the Nagoya Protocol.
- Greiber, T. et al. 2012. An Explanatory Guide to the Nagoya Protocol on Access and Benefit Sharing. Gland: IUCN.
- Kamau, E., Fedder, B. and Winter, G. 2010. The Nagoya Protocol on Access to Genetic Resources and Benefit Sharing: What is new and what are the implications for provider and user countries and the scientific community? Law, Environment and Development Journal 6(3) 246-264.
- Morgera, E., Buck, M. and Tsioumani, E. (eds). 2012. The 2010 Nagoya Protocol on Access and Benefit Sharing in Perspective – Implications for International Law and Implementation Challenges. Leiden: Martinus Nijhoff Publishers/Brill.

SESSION 6

ABS POLICIES AND NATIONAL LAWS IN AFRICA

Duration 1h
Structure Mapping activity; Synthesis lecture
Instructor Andreas Drews
Objectives

- To provide an overview of African countries that have signed and/or ratified the Nagoya Protocol.
- To review the evolving ABS policy framework in specific African countries.
- To outline the general legal processes for ABS, including key considerations.

Key References

- African Union Commission 2015. Practical Guidelines for the Coordinated Implementation of the Nagoya Protocol in Africa.
- Medaglia et al 2014. Overview of National and Regional Measures on Access and Benefit Sharing: Challenges and Opportunities in Implementing the Nagoya Protocol.

This session will begin with a mapping exercise of African counties that are parties to the CBD and therefore have national obligations to implement CBD provisions. Participants will also map out African countries that have signed and/or ratified the Nagoya Protocol, and also those that have ABS measures in place. Further, the session will examine the rationale for the present status of ABS legislation in African countries, given that obligations to implement ABS nationally do not only arise from CBD provisions.

INTRODUCTION

In order to further advance the implementation of the benefit-sharing objective of the CBD, the World Summit on Sustainable Development (Johannesburg, September 2002) called for the negotiation of a regime, within the framework of the CBD, to promote and safeguard the fair and equitable sharing of benefits arising from the utilisation of genetic resources. After six years of negotiation, the Nagoya Protocol was adopted in October 2010, in Nagoya, Japan.

The Protocol significantly advances the Convention's third objective by providing a strong basis for greater legal certainty and transparency for both providers and users of genetic resources. Specific innovations include obligations to support compliance with domestic legislation or regulatory requirements of the Party providing the genetic resources. These compliance provisions as well as those establishing more predictable conditions for access to genetic resources will contribute to benefit sharing. The Protocol's provisions will also strengthen the ability of indigenous and local communities to benefit from the use of their knowledge, innovations and practices.

By promoting the use of genetic resources and associated TK, and by strengthening the opportunities for sharing benefits from their use, it is intended that the Protocol will create incentives for the conservation and sustainable use of biological diversity, thereby contributing to sustainable development and human well-being.

Negotiations for an international ABS Protocol have not taken away countries' obligations under Article 15. Therefore over the last years a number of countries, some of which are African, have developed and put in place binding and non-binding legal instruments and policies on ABS.

CASE STUDY 1: KENYA

Background

Located in East Africa, Kenya is the 48th largest country in the world with a total area of close to 600 000 square kilometres. While Kenya's climate varies from tropical along the coast to arid towards the interior, the country is not extremely well endowed with mineral resources and less than 10% of the total land mass is arable. Over the last century, Kenya's forest cover has dramatically reduced from over 10% to a meagre 1.7%, mainly due to deforestation, commercial agriculture, charcoal burning, forest cultivation and replacement of indigenous forest with exotic plantations.

International obligations relevant to ABS

Kenya is a party to several international agreements that are relevant to ABS. These include the Nagoya Protocol, the CBD, the WTO, UPOV, ITPGRFA, UNCLOS, the UN Convention to Combat Desertification (UNCCD), the UN Forum on Forests (UNFF), and the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) processes.

Status of national law and policy on ABS

The Constitution of Kenya (2010) generally supports ABS principles. The law that deals squarely with ABS issues is the Environmental Management and Co-ordination Act (EMCA), the primary CBD implementing legislation. This legislation was enacted in 1999. Section 53 of this legislation, together with other sections, mandate the National Environmental Management Authority (NEMA) to issue guidelines and prescribe measures for the sustainable management and utilisation of genetic resources in Kenya for the benefit of her people. Accordingly, NEMA promulgated the Environmental Management and Coordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations (2006) (The Regulations). Related ABS policies are also found within the Seeds and Plant Varieties (Amendment) Act (2012), particularly with respect to plant genetic resources for food and agriculture.

Other national policies of relevance to ABS exist, including a National Land Policy. This policy has already been accepted by cabinet and if approved by Parliament and implemented may see land tenure systems changed for the benefit of many smallholder farmers. A Nutrition Policy is also in place and if properly implemented could spur utilisation of new genetic resources for food and agriculture.

Key elements of the law

The setting for the Regulations is framework legislation (EMCA) which has far reaching provisions. Section 42 of EMCA provides the Minister with broad powers to issue orders, regulations or standards for the management of riverbanks, lakeshores, wetlands and coastal zones. There are specific provisions authorising the Minister to issue special guidelines for access to and exploitation of living and non-living resources in the continental shelf, territorial sea and the Exclusive Economic Zone.

The Science, Technology and Innovation Act also sets the framework for scientific research and several other sectoral laws also affect the Regulations. The Regulations therefore are intended to clarify the ABS scenario. Part I of the Regulations addresses preliminary issues such as defining genetic resources and the scope of the application of the rules. The definitions generally follow those of the CBD. The section on scope provides a list of excluded activities. Exchange of genetic resources amongst local communities is specifically excluded from the scope of the Regulations. Part II of the Regulations calls for conservation of biological diversity through a requirement for Environmental Impact Assessments and biodiversity inventory measures. Part III lays down the institutional framework for the management of genetic resources and Part IV, for the principles that apply to benefit sharing. The latter generally follows the Bonn Guidelines.

Consultation process leading to the law/policy

The process leading to enactment of the ABS Regulations commenced in the late 1990s (prior to the enactment of the EMCA) through an expert group which was established by the National Council for Science and Technology - now the National Commission for Science, Technology and Innovation (NCSTI), to develop a regulatory system with a committee to implement the same. The action by the NCSTI appears to have been precipitated by the development of the First National Biodiversity Strategy and Action Plan of 1999. A second and separate initiative was undertaken by the National Museums of Kenya. Pursuant to collecting plant and seed varieties with the Royal Botanic Gardens at Kew, a sub-committee including government ministries and the Attorney General developed a preliminary draft of possible regulations. Unfortunately, these two initiatives stalled.

While NEMA appears to have adopted the outcomes of these two initiatives to develop the Regulations, the extent to which it was consultative is not entirely clear. Following the adoption of the Regulations, other policy processes have taken place. For example, a National Policy on Genetic Resources, Traditional Knowledge and Folklore is in place. However, this policy has not been implemented. The Seeds and Plant Varieties (Amendment) Act, 2012 calls for a separate process for regulation of ABS activities relating to plant genetic resources for food and agriculture. However, procedural regulations on the matter are yet to be developed.

Key issues

First, the multiplicity of national processes seeking to control ABS suggests that there is weak coordination between government agencies – creating uncertainty and inefficiencies in execution of mandates relating to ABS. Secondly, the place of customary law in ABS appears not to be known. Kenya's current legal landscape gives little prominence to involvement of customary law in ABS issues, yet there is general acceptance that customary law plays a critical role in conserving and transmitting TK associated with genetic resources. Finally, the current Regulations are not clear on the scope of exemption – particularly for non-commercial research and the identification of parties to material transfer agreements.

(Summary by Peter Munyi)

CASE STUDY 2: LIBERIA

Background

Liberia is a relatively small country located on the west coast of Africa and is known for being one of the wettest on the continent, for containing more than half of the biodiversity-rich Upper Guinean tropical forest and for its mineral wealth. Liberia's longstanding sea trade along the Atlantic coast also gave birth to it offering 'flags of convenience' to shipping through its maritime registry. The country was ravaged by a brutal civil war during the 1990s, leaving an estimated 270,000 people dead and generating massive displacement. About 90% of households were affected and urbanisation has soared since 2005. The last few years have been spent in recovery and reconstruction.

Reconstruction efforts have seen a rise in GDP from US $548 million in 2004 to US $2.9 billion in 2013 (CIA World Fact Book 2014). Forestry in Liberia plays a key role in supporting livelihoods and the national economy. The country has significant stands of climax forest vegetation, with 4.5 million hectares of dense forest, covering 50% of the country's land mass. It is estimated that the 4 million strong population derives 80-90% of total animal protein consumption from bush meat. Over 65% of Liberia's foreign exchange is earned from export of timber and forestry products. These activities continue to put immense pressure on the forests and as a result 18% of Liberia's forest disappeared between 1990 and 2000.

International obligations relevant to ABS

Liberia is a party to a number of international conventions of relevance to ABS. These include the CBD and ITPGRFA. Liberia is also a party to UNCLOS, WIPO, the International Tropical Timber Organization and is a member of the African Union (AU), a signatory to the Algiers Convention, a member of the UNFF and the WIPO IGC process. Liberia has observer status in the WTO and the African Regional Intellectual Property Organization (ARIPO). Apart from Azerbaijan, Liberia is the only country that is compliant with the Extractive Industries Transparency Initiative (EITI) and has passed a national law to give effect to this – the Liberian Extractive Industries Transparency Initiative (LEITI).

Status of national law and policy on ABS

Liberia does not have a law on ABS. However it is in the process of developing legislation based on section 86 of the Environmental Protection and Management Law (2003) which provides that the Environmental Protection Agency (EPA) shall, in consultation with the relevant line Ministry, initiate legislative proposals, issue guidelines and prescribe measures for the sustainable management and utilisation of genetic resources of Liberia for the benefit of the people of Liberia and for access to genetic resources.

While the Constitution of Liberia does not explicitly mention ABS or genetic resources, including the status of their ownership, there are provisions in the document that support the principle of ABS. The question of land tenure which is closely tied to that of ownership still remains unqualified in as much

the Constitution guarantees individual rights to property. The National Forestry Reform Law (2006) also contains provisions of relevance - particularly on access to forestry resources, community rights and benefit sharing.

The law establishing the Traditional Council is also useful - particularly in enhancing community rights. The Liberian Industrial Property Law and the Copyright Law are also key pieces of legislation as they provide the framework for intellectual property protection of genetic resources.

A Cultural Policy and National Museums Policy are important in safeguarding TK and lifestyles. The Cultural Policy is currently under review. The Food and Agricultural Policy and Strategy are also relevant with regard to agricultural genetic resources. There are other numerous draft laws and policies of relevance.

Key elements of the law

Two constitutional provisions support the principle of ABS. First is Article 7 which obliges the state to manage natural resources in a manner ensuring maximum participation of Liberians under conditions of equity. The second provision guarantees the individual right to own property, except for minerals. The latter provision suggests that ownership of genetic resources follows ownership of the land.

The Act Adopting the National Forestry Reform Law (2006) contains provisions that directly have an effect on ABS. Besides having a host of rules for community rights, one of the regulations developed by the Forest Development Authority (FDA) is on benefit sharing. Section 31 of these regulations mandates that a sum equal to 30% of all land rental fees collected is distributed for the benefit of all of the Republic's Counties. The Regulation also provides how these fees are to be managed and accessed.

The LEITI was approved in 2009. Its general objectives are to assist in ensuring that all benefits due to the Government and people of Liberia on account of the exploitation and/or extraction of the country's minerals and other resources are (1) verifiably paid or provided; (2) duly accounted for; and (3) prudently utilised for the benefit of all Liberians on the basis of equity and sustainability. These objectives are wide, far reaching, and may be interpreted to include genetic resources.

Finally, community rights which play a key role in conservation, sustainable use, access and benefit sharing are also provided for variously in the law. The Forestry Law of 2006 contains detailed provisions on community rights. It requires the FDA to undertake measures to institutionalise the participation of communities in forest management; recognise and protect community land tenure rights; formulate a code of conduct to govern relationships between concessionaires and communities;

require completion of a social agreement between concessionaires and communities that defines the parties' respective rights, roles, obligations, and benefits with respect to one another; provide for security of access by communities to non-timber forest products and other forest resources; and provide for technical assistance to community foresters.

Consultation process leading to the law/policy

A national process that is intended to be as widely consultative and inclusive as possible has been designed to develop law and policy on ABS. This process was initiated in 2009 and includes conducting situational review reports, gap analysis reports and legal drafting processes, in a consultative manner.

The first phase of the process included conducting desktop studies reviewing the laws and policies in place; stakeholder interviews; and preparation of a report for presentation and deliberation in a national workshop. The second phase involved holding a national workshop and revising the situational report. The third phase was the actual drafting of the legislation. The draft has been presented to regional and national workshops for further infusion. The process - now at the final phase, will involve presenting the final draft to the executive for enactment and thereafter preparing guidelines to explain new legislative arrangements.

Key issues

One of the challenges in Liberia is finding legal and policy documents. Although largely a result of the war, the Minister of Justice has observed that past systemic failures in the justice service caused documents to be difficult to access and led to confusion as to their status.

Secondly, in as much as the Constitution provides for individual title to land with exceptions, property rights in forestry remain unclear. Under the current law forests and forestland have become two separate properties. The legal reality of this is that even those communities which hold formal title to their customary properties (almost all of which include substantial forestlands) have no rights to the trees that are integral to the land.

Land tenure presents another problem. Community ownership of land and the rights attached thereon are not entirely clear. This creates uncertainty and disenfranchises communities. The Traditional Council presents a platform for a community decision making process in ABS. However, the key challenge faced by this institution is lack of empowerment and capacity.

The process to put ABS legislation in place presents an opportunity to turn around these and other challenges.

(Summary by Peter Munyi)

CASE STUDY 3: SOUTH AFRICA

Like many other countries, the regulation of ABS is relatively new in South Africa, despite the fact that the country has been a party to the CBD since 1995 and actively engaged in bioprospecting for decades. South Africa is also a party to the Nagoya Protocol. Until 2004, the commercial development of South Africa's biological resources took place in a legislative vacuum. Now that vacuum is being filled by a specific regulatory ABS framework, articulated through a chapter of the National Environmental Management Biodiversity Act (10 of 2004) (the Biodiversity Act) and the regulations passed under that Act, which came into effect in April 2008.

Before the Biodiversity Act came into effect, an approach to bioprospecting emerged that was characterised initially by a relatively ad hoc and minimalistic response. Most smaller bioprospecting initiatives slipped 'under the radar', whereas larger initiatives were characterised by bilateral contracts between those desiring access to genetic resources (typically a foreign company or foreign research institute) and those providing that access (typically represented by a local research institute). These contracts filled a necessary gap but were developed outside of any legal framework. Although a legal framework is now in place, there are still concerns that bioprospecting has failed to deliver optimal benefits for South Africa over the past 20 years.

Public controversies and concern that the natural and cultural heritage of South Africa was being 'sold for a song', without proper controls and oversight, combined with ongoing bioprospecting activities and South Africa's ratification of the CBD, led to the initiation in 1995 of a two-year period of public consultation, linked in part to a broader post-apartheid law reform initiative to develop a biodiversity policy that represented the interests of all South African citizens. In 1997, this culminated in the publication of a Biodiversity White Paper, the first national policy to incorporate ABS, and in 2004 South Africa's Biodiversity Act was finally promulgated.

The Biodiversity Act and ABS regulations comprise the primary legislative means for regulating ABS in South Africa, with the Biodiversity Act providing a broad framework, regulating all aspects of biodiversity conservation and use. One of the objectives of the Act is to provide for 'the fair and equitable sharing among stakeholders of benefits arising from bioprospecting involving indigenous biological resources'. The chapter dealing with this objective sets a fairly sparse legislative framework, leaving the detail to be dealt with in subordinate national legislation – the ABS regulations.

In contrast to the narrow definition of genetic resources embraced by the CBD, the Biodiversity Act defines 'indigenous biological resource' broadly in relation to bioprospecting to include any living or dead organism of an indigenous species, any genetic material or derivatives of such organisms, or any chemical compounds and products obtained through use of biotechnology. The breadth of this definition has significant implications as to the nature of activities regulated. Material of human origin is excluded from the ambit of the law, as are exotic organisms and indigenous biological resources listed in terms of the ITPGRFA.

A 2013 amendment to the Act now also explicitly includes biotrade as part of the definition for bioprospecting, raising questions about how far regulation should extend to species traded as commodities. This extended scope is in contrast to that specified by the Nagoya Protocol and many countries regulating for ABS.

The Act envisages two categories of stakeholders whose PIC to a bioprospecting project must be obtained.

They are:

- Those who give access to the indigenous biological resources – for example a land owner.
- Indigenous communities whose knowledge or traditional use of indigenous biological resources has contributed to, or may contribute to, the bioprospecting.

Benefit-sharing agreements must be entered into with both categories of stakeholders and, in addition, an MTA must be entered into with stakeholders who give access to the indigenous biological resources. Benefit-sharing agreements and MTAs must be approved by the national minister responsible for the environment and the minister may require the authority responsible for issuing permits to take steps to ensure that the negotiations around the agreement take place on an equal footing and that the resultant agreement is fair and equitable. The Act sets out what must be included in benefit-sharing agreements and MTAs. The Act also establishes a Bioprospecting Trust Fund, into which all money arising from benefit-sharing agreements must be paid, and from which all payments to stakeholders will be made.

ABS regulations to give effect to the Act were gazetted in March 2007 for public comment, following a lengthy consultative process, with a revised and final version promulgated in February 2008. These regulations came into effect on 1 April, 2008. No fewer than 14 drafts of the regulations were produced prior to their promulgation, indicating the complexity of the issues being dealt with in the regulations. Since promulgation, 15 bioprospecting permits have been issued, but many applications have not been processed and decision-making is extremely slow. There are also concerns about the multiple permits required and high levels of bureaucracy. Draft amendments to the regulations were gazetted in February 2014 but do not seem to deal with many of these concerns.

This emerging policy and legal regime marks a tremendous step forward in terms of ABS regulation in South Africa but also presents a number of challenges. These include a lack of clarity over ownership of genetic resources; the Act's failure to ensure that benefits from bioprospecting flow to the wider community; confusion as to the way in which research is regulated and the difficulties of differentiating between academic and commercial research; and a lack of clarity as to the way in which indigenous communities or individuals should be identified and their prior informed consent obtained. Because of the very wide scope of the definitions used, the differentiation of biotrade and bioprospecting in new legal frameworks also remains confusing and complex.

Coordination is a major challenge due to the involvement of a range of institutions across different levels of government, and this is exacerbated by ongoing capacity constraints. Also problematic is the lack of political will and low levels of awareness as to the rights, roles and responsibilities of different interest groups and constituencies.

Major gaps also remain with respect to the interface between the ABS legal framework in South Africa and intellectual property rights. Although the Biodiversity Act covers TK held by farmers for indigenous agricultural genetic resources, and the requirement for benefit sharing with holders of knowledge, this does not include non-indigenous genetic resources that farmers may have improved and developed. The protection of farmers' rights thus remains a key legislative gap in South Africa. This issue will become more critical if South Africa signs and ratifies the IRPGRFA, but this does not seem to be imminent.

Similarly, although legislative steps have been taken in South Africa requiring applicants to furnish information relating to the use of indigenous biological resources or TK in an invention, a broader strategy is required to ensure that the intractable issues associated with TK use and protection are adequately incorporated into a workable ABS framework. Indeed, by its nature, ABS regulations exist at the juncture of many interlacing bodies of law that 'criss-cross' the same biological material, bringing together a complex mix of scientific, conservation, trade and legal elements that fit uneasily into a regulatory whole.

While no single law is ever likely to address these collectively, bringing TK, innovation, science, biodiversity conservation, economic development, technology and equity into an overall coherent strategy remains the greatest challenge of all.

(Summary by Rachel Wynberg, drawn from Wynberg and Taylor 2009)

ADDITIONAL RESOURCES

- Morgera, E., Buck, M. and Tsioumani, E. (eds). 2012. The 2010 Nagoya Protocol on Access and Benefit Sharing in Perspective – Implications for International Law and Implementation Challenges. Leiden: Martinus Nijhoff /Brill.
- Nnadozie, K., Lettington, R., Bruch, C. Bass, S. and King, S. (eds). 2003. African Perspectives on Genetic Resources: A Handbook on Laws, Policies and Institutions. Washington DC: Environmental Law Institute.

DAY TWO

SESSION 7

INTELLECTUAL PROPERTY RIGHTS

Duration 1h30
Structure Presentation; Exercise; Discussion
Instructor Roger Chennells
Objectives

- To provide a basic understanding of what intellectual property rights are.
- To introduce the relationship between ABS and intellectual property rights.
- To instil a working knowledge of how to undertake online patent database searches of relevance.

Key Reference

- UNCTAD-ICTSD 2005. Resource Book on TRIPS and Development. Available at http://www.iprsonline.org/unctadictsd/ResourceBookIndex.htm
- World Trade Organisation (WTO) Agreement on Trade Related Aspects of Intellectual Property Rights.

INTELLECTUAL PROPERTY RIGHTS

Intellectual property rights (IPRs) are the rights given to persons over the creations of their minds (WTO). Under intellectual property, owners are granted certain exclusive rights to a variety of intangible assets, such as musical, literary, and artistic works; discoveries and inventions; and words, phrases, symbols, and designs. Common types of IPRs include copyright, trademarks, patents, industrial design rights, and plant variety protection, or plant breeders' rights.

According to Maskus (2000), there are two central economic objectives of any system of intellectual property protection. The first is to promote investments in knowledge creation and business innovation by establishing exclusive rights to use and sell newly developed technologies, goods, and services. In the absence of such rights, economically valuable information could be appropriated without compensation by competitive rivals. Firms would be less willing to incur the costs of investing in research and commercialisation activities. In economic terms, weak IPRs create a negative dynamic externality. They fail to overcome the problems of uncertainty in R&D and risks in competitive appropriation that are inherent in private markets for information.

The second goal is to promote widespread dissemination of new knowledge by encouraging (or requiring) rights holders to place their inventions and ideas on the market. Information is a form of public good in that it is inherently non-rival and, moreover, developers may find it difficult to exclude others from using it. In economic terms it is socially efficient to provide wide access to new technologies and products, once they are developed, at marginal production costs. Such costs could be quite low for they may entail simply copying a blueprint or making another copy of a compact disk or video.

PATENTS

Commercialisation of research outcomes involving genetic resources frequently involves intellectual property protection. Because of the characteristics and nature of genetic resources, patents usually offer the preferred form of protection of these research outcomes.

A patent is a legal certificate that gives an inventor an exclusive right to prevent others from producing, using, selling, or importing an invention for a fixed period (usually 20 years). Legal action can be taken against those who infringe the patent by copying the invention or selling it without permission from the patent owner. Patents can be bought, sold, hired, or licensed.

A patent application must satisfy the patent examiners that the invention is:

- **useful** (i.e., have industrial application): ideas, theories, and scientific formulas are not sufficiently useful or industrially applicable to be patentable;
- **novel**: the invention should be recent and original, but perhaps most importantly it should not already be known (in the public domain). In most countries (except the USA) the patent is awarded to the first person to apply, regardless of whether this person was the first to invent;
- **non-obvious or must involve an inventive step**: not obvious to a person skilled in the technology and more inventive than mere discovery of what already exists in nature (such as a gene with no known function). The invention must be disclosed to the patent examiners in a detailed way that would enable a skilled technician to make and use it. In the case of an invented process, the patent can cover a non-obvious way of making something already known (i.e. previously invented or discovered). In the case of an invented product, the non-obvious/inventive step requirement does not require it to be made by a novel method.

In order to clarify the legal scope of the patent, the inventor provides a list of claims, which the examiner will accept, modify or reject as invalid. These claims may cover any of the following:

- **A product**: such a claim will cover any use of the product including those as yet undiscovered. For example, a new drug patented as a cure for cancer may later be found to cure heart disease; the patent will cover this new use.
- **A use**: such a claim will cover a specific use only. Thus, it would cover the above drug only as a cure for cancer and not for any uses that are found later. In some countries new uses of existing inventions are patentable. If the patent on the existing invention is still valid, the owner of the newer patent will have to acquire a license from the owner of the earlier patent in order to exploit his or her invention.
- **A process**: such a claim will protect the process when used with any product, but would not protect a product that could be manufactured by that process but was not.
- **A product-by-a-process**: such a claim would cover only those products made by the process described in the application. Therefore, it would cover the drug, but only when made by a specified process.

It should be noted that a patent may include claims of two or more of these categories. But whether the patent covers a product, a process, a use or all of these, the invention normally must have a physical embodiment or its application must be capable of leading to one.

Not all inventions that meet the above conditions can be protected by patents. In many countries, computer programs and business methods cannot be patented at all. And in some countries certain inventions may be unpatentable because they are deemed to be immoral or contrary to the public interest. In part the differences in national patent laws are due to the fact that each country prefers to define what inventions may be patented in accordance with its perceived national interest. But there is a trend towards standardisation of national patents laws, and many common exceptions to patentability are likely to disappear in the next few years.

(Adapted from: Guide to Intellectual Property Rights, www.iprsonline.org*)*

PATENT DATABASES

One cardinal rule in patent protection is that the inventor must disclose the invention. Patent information is therefore available in numerous databases held by patent offices, such as the United States Patent Office (USPTO); World Intellectual Property Office (WIPO) Patent Cooperation Treaty (PCT) database and the European Patent Office (EPO). The information contained in these databases is usually categorised in a manner that it is searchable in various fields of art. Understanding how to undertake a patent database search is important for various reasons including the following:

- Patent databases contain massive literature on various inventions, describing in specific details the prior art, invention and the inventive steps. As such they are a source of useful knowledge and information.
- For inventors, patent databases provide useful sources on related inventions and by conducting database searches, one is able to determine whether any invention is new or infringes upon existing inventions.
- Through patent database searches, one may be able to determine patenting trends in particular fields of science, and identify potential collaborators, and competitors in the field.
- Analysis of patent databases may reveal commercial viability or otherwise, of inventions.

ADDITIONAL RESOURCES

- Maskus, K.E. 2000. Intellectual Property Rights and Economic Development. Prepared for the series 'Beyond the Treaties: A Symposium on Compliance with International Intellectual Property Law', organised by Fredrick K. Cox International Law Center at Case Western Reserve University.
- Schwander, P. 2000. An Evaluation of Patent Searching Resources: Comparing the Professional and Free Online Databases. Available at ftp://ftp.cordis.europa.eu/pub/patinnova99/docs/1_9_schwander.pdf

SESSION 8

BENEFIT SHARING AND BIOTRADE

Duration 2h
Structure Presentation; Group work; Discussion
Instructor Gus Le Breton
Objectives

- To expose participants to the concept and characteristics of biotrade.
- To explore approaches adopted towards benefit sharing within the biotrade context.
- To examine how biotrade is dealt with in the regulatory framework.

Key References

- UNEP 2012. Green Economy Sectoral Study: BioTrade – A Catalyst for Transitioning to a Green Economy in Namibia.

WHAT IS BIOTRADE?

Biotrade is a term used to describe any activity relating to the commercial collection, processing and sale of products derived from biodiversity. It is often linked to criteria of environmental, social and economic sustainability.

Biotrade represents a significant commercial opportunity for Africa, especially for rural communities living in marginal areas where the returns from rainfed agriculture are low. Increasing interest from consumers and industry in natural products, particularly in the cosmetic, food and beverage sectors, is stimulating the development of new supply chains and is encouraging more and more countries to invest in biotrade activities.

Despite the obvious opportunities presented, many African countries have been slow to respond to this. Policies and practices that support and promote biotrade are the exception rather than the norm, and many countries actively discourage biotrade, usually on conservation grounds.

EXAMPLES OF BIOTRADE IN AFRICA

Examples of biotrade from Africa include the supply of gum Arabic for the food industry, dried and sliced devil's claw tubers for the pharmaceutical industry, shea butter for the food and cosmetics industries, and cold-pressed argan oil as a cosmetic ingredient.

One country that has done much to support biotrade is Namibia. According to a 2012 UNEP study, biotrade represented around 4.5% of contribution to Namibian GDP (Gross Domestic Product) and included indigenous natural products, wildlife, agriculture (indigenous crops and vegetables, and livestock breeds), indigenous fisheries and marine resources, timber and non-timber forest products. Namibia identified biotrade as an important tool for poverty reduction efforts, where attention is given to ensure harvesters and

resource providers receive an equitable share of the benefits. It was also estimated that the contribution of biotrade to Namibia's economy could increase by 50% over the next 10 years, to 7% of GDP. It has the potential to affect a quarter of a million people through income and benefits derived, and act as a driver to a green economy (UNEP 2012).

BIOTRADE AND BENEFIT SHARING

One of the obstacles towards expanded biotrade in Africa is the perception that it does not result in an equitable sharing of benefits between producers and other players in the value chain. The lecture explores different benefit-sharing models within the overall context of biotrade, and assesses the degree to which each conforms with accepted notions of equitable benefit-sharing.

Models include:

- Creation of an enduring commercial demand for raw or value-added biological material which rural producers can supply on a profitable and sustainable basis
- Support for producers to progress further up the value chain through technology transfer, capacity building and other measures
- Shared ownership of intellectual property between resource owners and technical partners
- Sole ownership of intellectual property by resource owners

THE REGULATORY FRAMEWORK FOR BIOTRADE

The regulatory framework for biotrade is complex. Although the CBD makes indirect reference to it, the term biotrade is not used at all in the Nagoya Protocol, which is focussed on research and development of genetic materials for commercialisation and associated TK (bioprospecting). Nevertheless, some countries have included biotrade in their national ABS legislation (e.g. South Africa, which specifically addresses biotrade in its Bio-Prospecting, Access and Benefit-Sharing (BABS) Regulations).

Biotrade is also impacted by many other sets of regulations, including those covering trade in endangered species (e.g. CITES (The Convention on International Trade in Endangered Species of Wild Fauna and Flora)), national and international wildlife and conservation regulations, bilateral and multilateral trade agreements and a host of regulations aimed primarily at consumer protection (e.g. EU Novel Foods, US FDA regulations), but which often act as a barrier to expanded biotrade.

ADDITIONAL RESOURCES

- L'Oreal Canada Briefing: Responsible Sourcing of Argan Oil.
- UEBT 2014. Access and Benefit Sharing – ABS: Understanding International and National Laws.
- UEBT 2014. Frequently Asked Questions on the Nagoya Protocol on ABS.
- UEBT 2010. Nagoya Protocol on Access and Benefit Sharing – Technical Brief.

USEFUL WEBSITES

- http://www.bio-innovation.org
- http://www.biotrade.org/BTFP/BS/Benefit-sharing.htm
- http://www.ethicalbiotrade.org/abs/
- http://www.phytotradeafrica.com

SESSION 9

TRADITIONAL KNOWLEDGE

Duration 1h30
Structure Overview; Group work; Case study presentations
Instructors Roger Chennells
Objectives

- To discuss the importance of TK and examine the relevance of TK in the context of ABS.
- To understand the various forms of 'alternative' approaches to protection of TK.
- To discuss ABS case studies involving TK.

Key References

- Subramanian, S.M. and Pisupati, B. (eds). 2010. Traditional knowledge in policy and practice. Approaches to development and human well-being. Tokyo: United Nations University Press.
- WIPO 2012. Traditional Knowledge Documentation Toolkit.

TRADITIONAL KNOWLEDGE

Traditional knowledge refers to the knowledge, innovations, and practices of indigenous and local communities around the world. Developed from experience gained over centuries and adapted to the local culture and environment, TK is transmitted orally from generation to generation. It tends to be collectively owned and takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices, including the development of plant species and animal breeds. TK is mainly of a practical nature, and is mostly found in fields such as agriculture, fisheries, health, horticulture, and forestry.

RECOGNISING THE RIGHTS OF CUSTODIANS OF BIODIVERSITY

Indigenous peoples, local communities, small-scale farmers, fishers and pastoralists may be seen as the 'custodians of biodiversity'. The rights of these peoples are given recognition in several United Nations bodies through Conventions such as the CBD (Article 8(j)), the International Labour Organization's (ILO) Convention No. 169 and the Declaration on the Rights of Indigenous Peoples (UNDRIP).

Although Article 8(j) of the CBD as well as the important requirements for PIC and MAT under ABS give recognition for indigenous peoples' rights, some indigenous groups had hoped to have their rights as defined by UNDRIP included in the treaty. However, this was only noted in the preamble to the Nagoya Protocol, which is non-enforceable (Kohli and Bhutani 2011).

The Indigenous and Tribal Peoples Convention, 1989, also known as ILO-Convention 169, is the major binding international convention concerning indigenous peoples, and is a forerunner of the UNDRIP which was adopted by the UN in 2007. Although not legally binding in terms of international law, UNDRIP sets out the individual and collective rights of indigenous peoples, as well as their rights to culture, identity, language, employment, health, education, and emphasises the rights of indigenous peoples to maintain and strengthen their own institutions, cultures and traditions.

THE IMPORTANCE OF TRADITIONAL KNOWLEDGE

Indigenous and local communities have an intrinsic understanding of the area in which they live and in-depth knowledge of their natural resources. Africa is home to a number of biodiversity-rich areas which are often associated with vast repositories of TK. A variety of food crops, medicinal plants and livestock provides the basis for food and livelihood security and has been collected, selected, grown and raised by indigenous and local communities since time immemorial. Traditional knowledge related to these resources is dynamic and reflects the traditions of communities. It is also by nature collective, often viewed as the property of the entire community - not belonging to any single individual or entity.

CONCERN FOR TRADITIONAL KNOWLEDGE PROTECTION

The need for, and importance of, TK protection emerges from the fact that in the past many genetic resources and associated TK were used by companies for commercial gain. The benefits derived from the use of these resources were not shared with resource owners or custodians and in some cases, patents were taken out to protect the interests of the users. Such patents generated benefits in the form of royalties or trademarks for the company or individual and furthermore, disclosure of origin of the resource was not required.

In light of incidences of biopiracy and inequitable benefit sharing from genetic resource utilisation, it has become very important to protect these resources and the TK associated with them. In other words, there is a need to establish TK holders' rights over such knowledge. Recognising the importance of TK, the CBD acknowledges the knowledge, innovations, and practices of indigenous and local communities and requires the consent of holders of such knowledge and practices and the fair and equitable sharing of benefits arising from the use of such knowledge in bioprospecting.

REGULATING THE PROTECTION AND COMMERCIAL USE OF TK

The commercial use of TK raises a range of complex issues. For example, is all knowledge, including that which is widely known, subject to ABS regulations? Who should provide PIC, enter into a benefit-sharing agreement and receive benefits? How are the owners of TK identified? What if knowledge is shared by a number of communities? And how do concerns and conflicts about the commodification of TK get addressed?

Within a suite of global instruments and institutions, negotiated texts and processes have evolved to address these concerns, primarily the CBD, WIPO and the United Nations Permanent Forum on Indigenous Issues.

Through Article 8(j), the CBD requires member parties to 'respect, preserve and maintain' the biodiversity-related knowledge, innovations and practices of indigenous peoples and local communities. It also establishes that the 'wider application' of this knowledge should be promoted with the 'approval and involvement of the holders of such knowledge'. The CBD also encourages the equitable sharing of benefits derived from the use of knowledge, innovations and practices related to the conservation or sustainable use of biodiversity. These principles are taken further in the 2002 Bonn Guidelines, which aim 'to contribute to the development by Parties of mechanisms and ABS regimes that recognise the protection of TK, innovations and practices of indigenous and local communities, in accordance with domestic laws and relevant international instruments' (CBD, 2002, para 11(j)). An Ad Hoc Open-ended Working Group on Article 8(j) and Related Provisions provides advice on the protection of TK, by legal and other means, and is

undertaking work to identify priority elements of sui generis systems for TK protection, fair benefit-sharing and PIC.

The United Nations Declaration on the Rights of Indigenous Peoples is another important instrument in support of indigenous peoples' rights over their biodiversity-related TK, stating that:

> *Indigenous peoples have the right to maintain, control, protect and develop their... traditional knowledge and... the manifestations of their sciences, technologies and cultures, including genetic resources, seeds, medicines... [and] knowledge of the properties of fauna and flora. ... they also have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions (UN 2007, Article 31.1).*

Traditional knowledge is also a matter increasingly under consideration in relation to the TRIPS agreement of the WTO. A proposed amendment to TRIPS would bring it in line with obligations under the CBD, adding a requirement for disclosure of origin in patent applications and possibly requiring benefit sharing with communities to deter biopiracy.

Intellectual property rights issues in genetic resources also figure predominantly in the mandate of WIPO, which has set up an Intergovernmental Committee on Traditional Knowledge, Genetic Resources and Folklore (IGC). The IGC gives countries guidance, based on research and the work of fact-finding missions, on strategies for the protection of TK and genetic resources.

Some of the measures being adopted include the development of biodiversity registers or databases that record biodiversity use and knowledge in particular regions. These defensive or 'negative' methods of protection of TK may be complemented by the legal recognition of collective ownership of resources and knowledge, co-ownership of patents and products, and certificates of PIC, benefit sharing and/or origin of the resource or knowledge in patent applications. In practice, however, many of these tools and approaches are still in their early stages and present significant challenges. Many companies have therefore adopted a hands-off approach to the use of TK, while others have little awareness of the need to enter into ABS arrangements when using TK. The diverse ways in which companies use and interpret TK adds a further layer of complexity. In cases where TK is used, companies typically rely heavily on intermediary institutions such as research institutions, NGOs or governments to resolve difficult issues. The intractable nature of many of these issues means that projects involving TK are often inherently controversial. *(Summary by Rachel Wynberg)*

PROTECTING TRADITIONAL KNOWLEDGE

The concept of property ownership in the West is premised on individual ownership. In terms of IPRs, such rights are therefore granted to a person(s) who has laboured and come up with something, in other words, a person who has either created something new or improved upon existing knowledge. Such an individual is then granted monopolistic rights to exclude others from working the subject matter of the said rights.

In contrast to Western notions of intellectual property, TK is generally communally owned and passed on from generation to generation. The knowledge is mostly not in fixed form, and no individual can claim ownership to it. The limitations of modern intellectual property regimes in protecting TK are tied to the nature of TK.

A distinction is made between 'defensive' protection and 'positive' protection. **Defensive protection** is largely concerned with prohibiting the abuse of TK.

Positive protection entails enabling communities to actively assert their rights, and to benefit from their knowledge. In this regard, there is a need to apply both forms of protection to TK.

Defensive protection is provided by laws and systems that safeguard against illegitimate IPRs acquired by third parties over TK. The WIPO Intergovernmental Committee on IP and Genetic Resources, TK and Folklore is largely involved with devising such protection.

This includes:

- Measures to ensure that TK becomes 'prior art'
- Public databases of TK that constitute 'publication' and are available to patent officers
- Mechanisms to ensure that TK constituting 'prior art' is available and accessible to search authorities
- Strategies that include legal and practical aspects. Legal strategies include ensuring that publication is done in such a way as to constitute prior art. Practical strategies include ensuring that the TK is likely to be found in a patent prior art search

Positive protection is provided by laws and systems that give TK holders the right to take action or seek remedies against any form of abuse of TK. Such a system can include:

- Recognition in the law of the value of and respect for TK systems
- Prevention of misappropriation/unauthorised use of TK
- Knowledge by TK holders of their legal rights
- Support of TK systems and empowerment of TK holders
- Promotion of equitable benefit sharing from use of TK
- Promotion of the use of TK as a tool for development

Both of these two systems need to be holistically applied. Defensive protection provided by a system of databases and public records is no substitute for positive protection provided by the active assertion of rights. These two systems are entirely complementary.

ADDITIONAL RESOURCES

- ARIPO 2010. Swakopmund Protocol on the Protection of Traditional Knowledge and Expressions of Folklore.
- Wekesa, M. 2009. Traditional Knowledge - The Need for Sui Generis System of IPR Protection. In Wekesa, M. and Sihanya, B. (eds). IPRs in Kenya. Nairobi: Konrad Adenauer Stiftung and SportsLink.
- World Intellectual Property Organization (WIPO) Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore. WIPO/GRTKF/IC/5/6 and IC/3/5 and IC/3/6
- Zerbe, N. 2005. Biodiversity, Ownership and Indigenous Knowledge: Exploring Legal Frameworks for Community, Farmers, and IPRs in Africa. Ecological Economics (53): 493-506.

SESSION 10

FARMERS' RIGHTS

Duration 1h
Structure Presentation; Discussion
Instructor Peter Munyi
Objective

- To introduce the concept of Farmers' Rights.

Farmers' Rights are a precondition for the maintenance of crop genetic diversity, which is the basis of all food and agriculture production in the world. In essence, realising Farmers' Rights means enabling farmers to maintain and develop crop genetic resources as they have done since the dawn of agriculture, and recognising and rewarding them for this indispensable contribution to the global pool of genetic resources.

Plant genetic diversity is probably more important for farming than any other environmental factor, simply because it is the factor that enables adaptation to changing environmental conditions such as plant diseases and climate change. Thus, as a precondition for the maintenance of this diversity, Farmers' Rights are crucial for ensuring present and future food security in general, and in the fight against rural poverty in particular.

The realisation of Farmers' Rights is a cornerstone in the implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), as it is a precondition for the conservation and sustainable use of these vital resources in-situ as well as on-farm.

The Treaty recognises the enormous contributions made by farmers worldwide in conserving and developing crop genetic resources. This constitutes the basis of Farmers' Rights. According to Article 9, governments are to protect and promote Farmers' Rights, but can choose the measures to do so according to their needs and priorities. Measures may include the protection of traditional knowledge, equitable benefit sharing, participation in decision-making, and the right to save, use, exchange and sell farm-saved seeds and propagating material.

Several other articles in the Treaty are also important for the realisation of Farmers' Rights. However, the understanding of Farmers' Rights and the modalities for their implementation is still vague. The Governing Body of the ITPGRFA has taken steps to promote the realisation of Farmers' Rights and continues to discuss further measures.

One reason why the negotiators of the ITPGRFA were not able to agree on a definition on Farmers' Rights was that the situation of farmers differs so greatly from country to country, as do the perceptions of Farmers' Rights. With no official definition of Farmers' Rights, there is uncertainty as to what the concept involves, and thus also around how these rights can be realised. Therefore it is important to establish a common ground of understanding in order to develop a fruitful dialogue among stakeholders on necessary measures to be taken.

(Adapted from www.farmersrights.org)

ADDITIONAL RESOURCES

- Andersen, R. 2005. The History of Farmers' Rights. A Guide to Central Documents and Literature. The Farmers' Rights Project, FNI Report 8/2005. Lysaker: Fridtjof Nansen Institute.
- Bjørnstad, S.I.B. 2004. Breakthrough for 'the South'? An Analysis of the Recognition of Farmers' Rights in the International Treaty on Plant Genetic Resources for Food and Agriculture, FNI Report 13/2004. Lysaker: The Fridtjof Nansen Institute.
- FAO 1983. International Undertaking on Plant Genetic Resources.
- FAO 1985. Report of the Conference of FAO, 22ND Session, Rome, 9-28 November 1985, C 1985/REP.
- FAO 1989. Report of the Conference of FAO, 25TH Session, Rome, 11-29 November 1989, C 1989/REP.
- FAO 1991. Report of the Conference of FAO, 26TH Session, Rome, 9-27 November 1991, C 1991/REP.
- FAO 1993. Report of the Conference of FAO, 27th Session, Rome, 6-24 November 1993, C 1993/REP.
- FAO 1996. Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture.
- FAO 1996. The Leipzig Declaration adopted by the International Technical Conference on Plant Genetic Resources in Leipzig, Germany, 17-23 June 1996.
- United Nations 1992. Conference on Environment and Development, Rio de Janeiro, Brazil, 3-14 June: Agenda 21.

DAY THREE - SESSION 11: FIELD TRIP

SESSION 11

FIELD TRIP

Structure Two sites will be visited during the field trip:

- a group in Domboshawa, just north of Harare, engaged in harvesting the Resurrection bush for export to buyers in Europe.
- and an Agro-Processing and Biotrade Innovation Lab, which acts as a centre for product development and trial manufacture of new biotrade products.

During the visit, participants will also enjoy a traditional Zimbabwean lunch.

Convenor Caroline Jacquet, Bio-Innovation Zimbabwe

Objectives

- To introduce a practical example of an early stage biotrade initiative.
- To meet and talk with members of a harvesters' group involved in harvesting, processing and selling a biotrade product (Resurrection bush).
- To gain a better understanding of the product development process for biotrade products, with particular emphasis on the use of simple and relatively low-tech equipment.

RESURRECTION BUSH

The resurrection bush (Myrothamnus flabellifolia) is native to southern Africa and very widespread in Zimbabwe. It is found in full sun only in shallow soil over rock, crevices and rocky hillsides where few other plants survive. For most of the year it looks like an upright bundle of red-brownish sticks, no more than 30-50cm high. It is called the resurrection bush for the speed with which apparently dead leaves revive when the rains come.

The smaller twigs and dry leaves are collected between May and September, after the rains.

They are mostly used as a traditional medicine to treat a variety of ailments (colds, kidney problems, asthma, backaches and headaches). In Zimbabwe, the resurrection bush has been commercially marketed for several years as a herbal tea. The tea is valued for its health benefits and, although not widely consumed, it has a loyal consumer base.

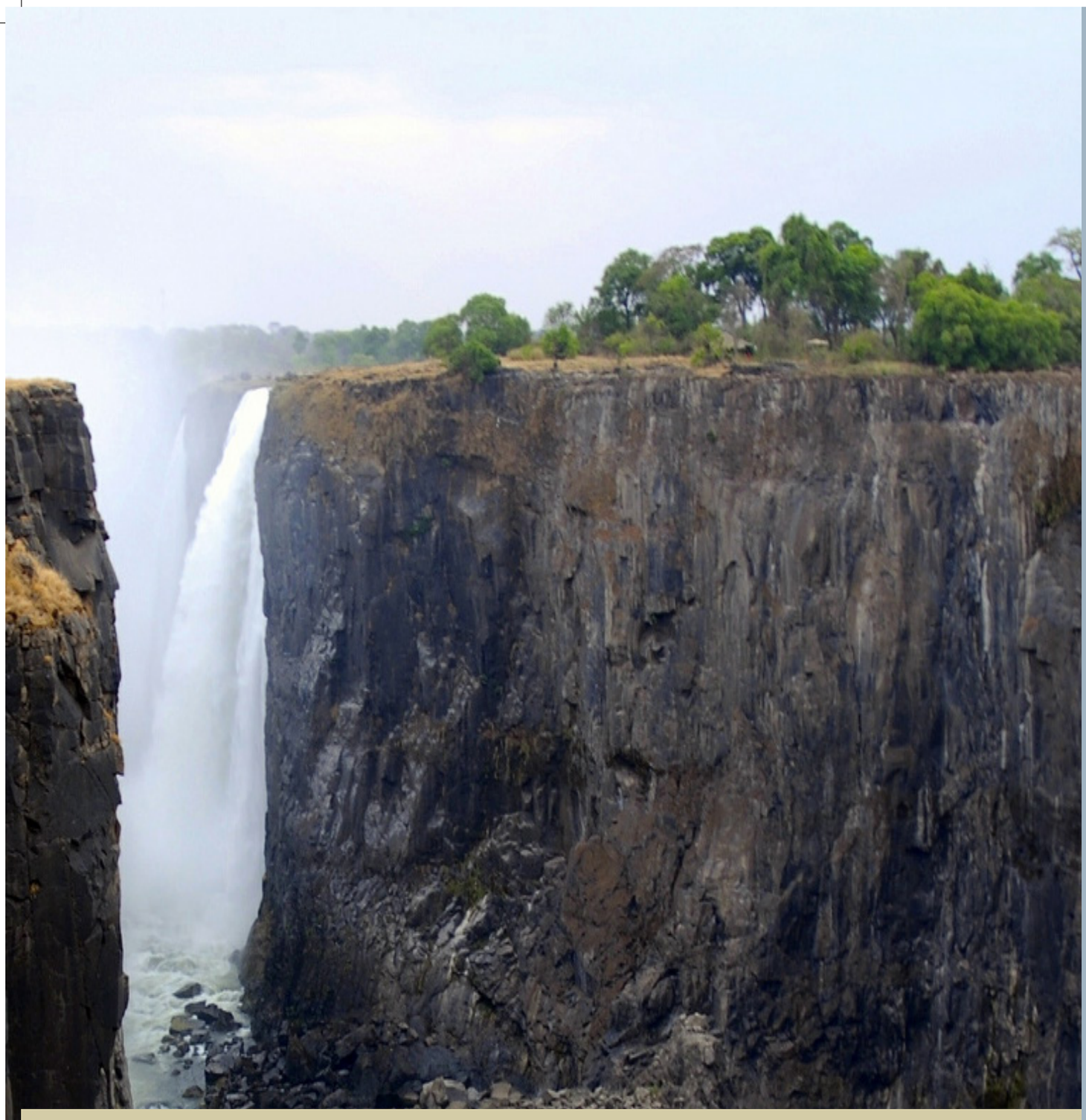
Recently, interest has developed in the resurrection bush for its potential cosmetic properties.

Although demand is still small, we will visit a group of resurrection bush harvesters in the Domboshawa area, north of Harare, who have recently begun harvesting the bush in conjunction with a local company, Organic Africa.

AGRO-PROCESSING AND BIOTRADE INNOVATION LAB

A key principle of benefit sharing in the context of biotrade relates to the need to support producers to progress as far up the value chain as possible. Whilst there are serious practical challenges involved in doing this, there are nevertheless many things that can be done. Our visit will take us to a small-scale agro-processing and value addition facility that specifically seeks to develop and pilot new biotrade value added products, including foods, cosmetics, herbal medicine and basic pharmaceutical products. In all cases, the equipment used in the lab is of a low-cost and appropriate technology, and the intention is to demonstrate what can be done in even relatively remote and rural settings.

Current activities in the lab include production of a range of baobab and marula jams, marula fruit pulping, development of new cosmetic formulations around the fruit of the Kigelia africana tree, and the production of a number of powdered and flavoured baobab beverages.



DAY FOUR

SESSION 12

UNDERSTANDING THE BIOPROSPECTING PROCESS AND INDUSTRY

Duration 2h
Structure Presentation; Group Work, Q&A
Instructor Rachel Wynberg
Objectives

- To understand the basic steps in the bioprospecting process.
- To explore the different industries which use biodiversity commercially.

Key Reference

- Laird, S. and Wynberg, R. 2012. Bioscience at a Crossroads: Implementing the Nagoya Protocol on Access and Benefit Sharing in a Time of Scientific, Technological and Industry Change. Montreal: Secretariat of the CBD.

THE BIOPROSPECTING PROCESS

The exploration of biodiversity for commercially valuable genetic resources and biochemical compounds is known as 'biodiversity prospecting', commonly shortened to 'bioprospecting'. It describes the search and collection of genetic resources with the intention to commercialise useful organic compounds found within them (see Figure 6). It can also include the collection of TK relating to genetic resources from local and indigenous communities. Bioprospecting is not a new activity, but in recent times, research and development (R&D) methods have advanced at a rapid rate. Bioprospectors, typically scientists or other researchers, search for useful organic compounds in microorganisms, plants and fungi that grow in biodiversity hotspots such as rainforests, but also in extreme environments such as deserts, the depths of the ocean or hot springs.

Modern biochemists analyse plants, microorganisms and other living things in a laboratory through experiments with chemicals, as many of the compounds they are searching for are too small to be seen with a microscope. In some cases the only way to acquire a useful organic compound is to collect the organism which contains it from nature. However, new scientific developments mean that many useful compounds can be reproduced in a laboratory of factory, or manufactured via genetic engineering.

(Adapted from http://www.nature.nps.gov/benefitssharing/whatis.cfm*)*

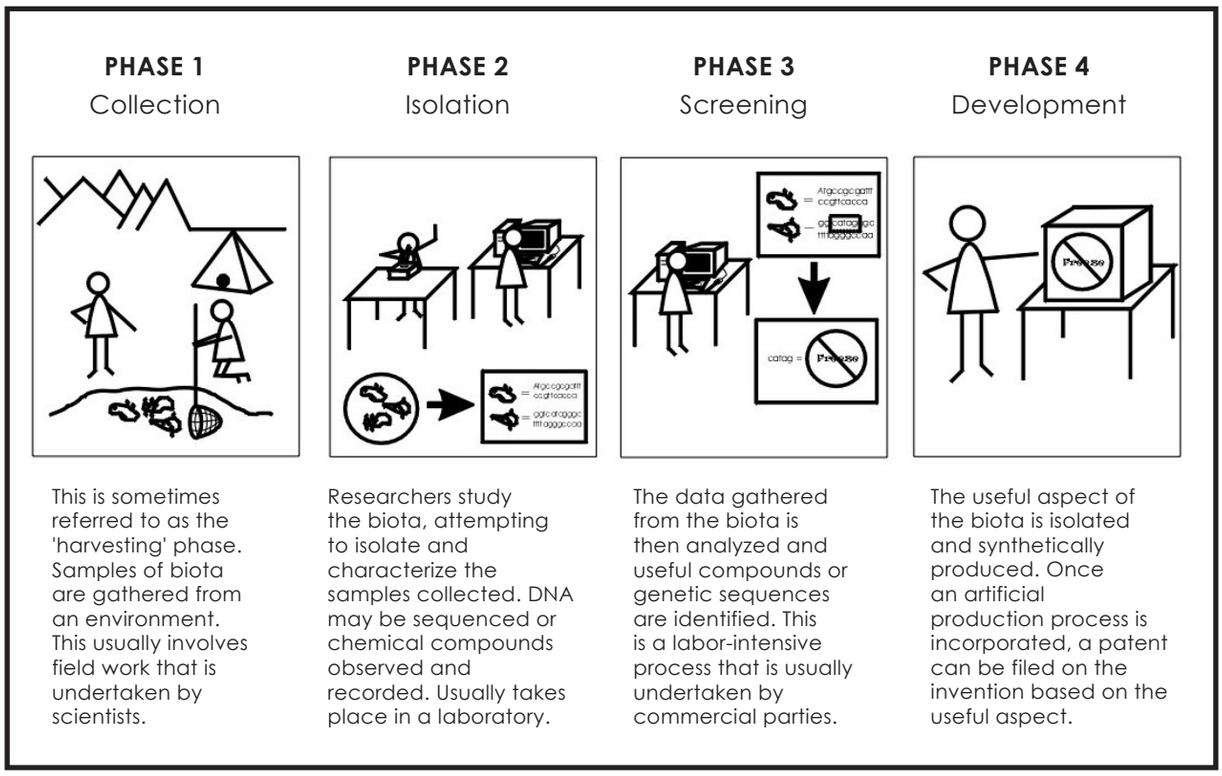


FIGURE 6. The 4-Step Process of Bioprospecting *(Jabour-Green and Nicol 2003)*

SECTORAL APPROACHES TO COMMERCIAL BIODIVERSITY USE

A wide range of sectors are engaged in the research and development of commercial products from genetic resources. They include the:

- pharmaceutical
- industrial biotechnology
- agricultural (includes seed, crop protection and ornamental horticulture)
- cosmetic and personal care
- fragrance and flavour
- botanical medicine, and
- food and beverage industries

Each sector is part of a unique market, undertakes R&D in distinct ways, and uses genetic resources and demands access to these resources very differently. Sectors are also profoundly different in their profitability, size and R&D investments (see Figure 7). For example, in the pharmaceutical industry, drug discovery and development typically take more than ten years. Only very rarely will an individual compound result in a commercial product, and the cost could be in excess of US $800 million (PhRMA 2007). At the same time, blockbuster drugs can generate over a billion dollars in sales a year for large multinational companies.

In contrast, botanical medicine companies, which produce natural medicines directly from whole plant material, work intensively on a handful of carefully selected species and might take just a few years to develop a product, the annual sales of which will likely not exceed a few million dollars. As with the personal care and cosmetics, food and beverage, and horticulture industries, botanicals are less research-intensive than the pharmaceutical and biotechnology sectors. They also tend to generate a far larger number of commercial products with significantly smaller markets than the pharmaceutical and biotechnology industries, which produce smaller numbers of high-value products.

The cyclical nature of industry interest in natural products is also significant. The recent surge of interest in natural products, for instance, is driven both by failures in alternative approaches like combinatorial chemistry, which involves the rapid synthesis or computer simulation of a large number of different but structurally related molecules, and scientific and technological developments that allow researchers to better study natural products already in their collections (Cragg et al 2005; Koehn and Carter 2005). Similarly, advances in DNA extraction technology have made available 99 % of the microbial diversity previously inaccessible through traditional cultures and have led to a heightened interest in the economic potential of microorganisms (Handelsman 2005; McAlpine et al 2005).

The US $85 billion (Ernst & Young 2011) biotechnology industry is in itself a study in diversity. It is made up of industrial, agricultural and health care biotechnology companies that range in size and scope from those that are small, dedicated and research-intensive to large, diversified ones that have greater in-house resources. Biotechnology companies have a particular interest in the astounding biochemical diversity found in genetic resources from diverse and extreme environments and ecological niches (for example, salt lakes, deserts, caves, hydrothermal vents and cold seeps in the deep seabed) as well as areas with microbial diversity associated with endemic flora and fauna (Arico and Salpin 2005).

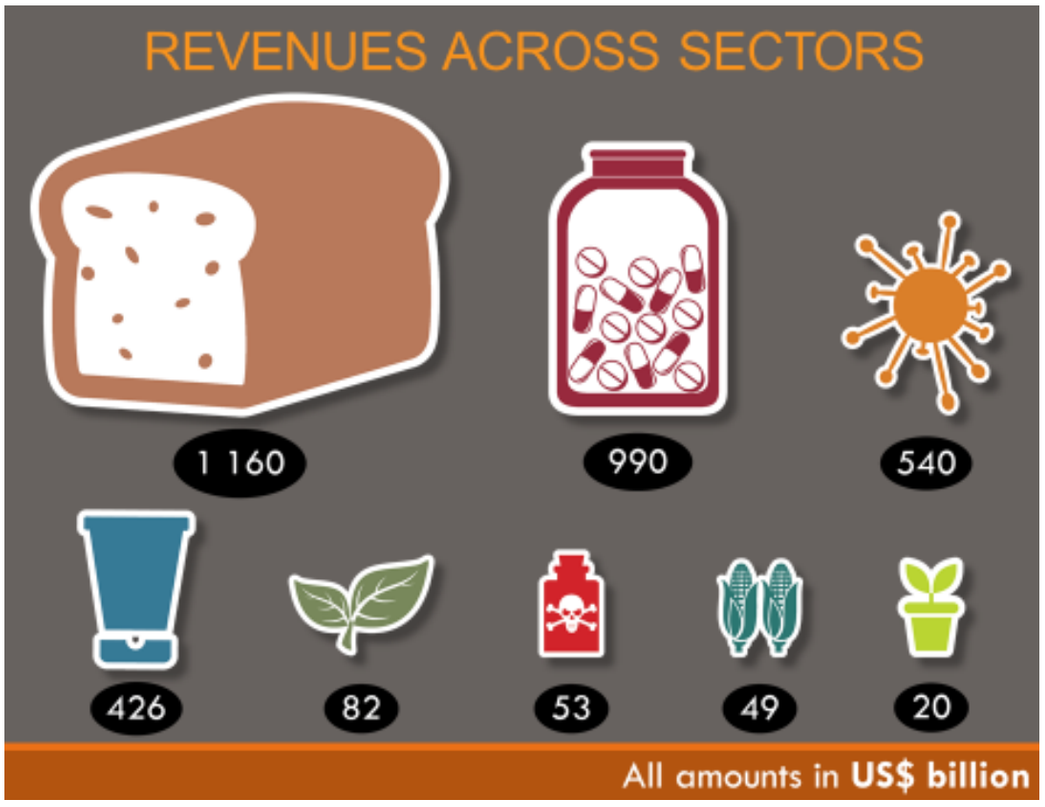


FIGURE 7. Annual Revenues across the Commercial Sectors Which Rely on Biodiversity (Based on data from 2013) *(Source: Wynberg and Laird 2015)*

While the sectors and companies that demand access to genetic resources are clearly diverse, the nature of demand for access is also constantly changing in response to markets, laws, and scientific and technological advances. For example, in the seed industry, there has been reduced demand for wild genetic resources and greater reliance on ex-situ and private collections. However, demand for wild material continues to meet consumer pressures to reduce the use of chemicals and vulnerability to pests and diseases (Rubenstein et al 2005). Similarly, the ornamental horticulture industry has a low dependence on wild genetic resources, but some companies continue to hunt for wild material with a view to introducing novel ornamental species or providing new variations of colour and other character traits. Technological advances in the pharmaceutical and biotechnology industry have stimulated renewed interest in natural products, but have also made it possible to look anew at what is found in companies' 'backyards'.

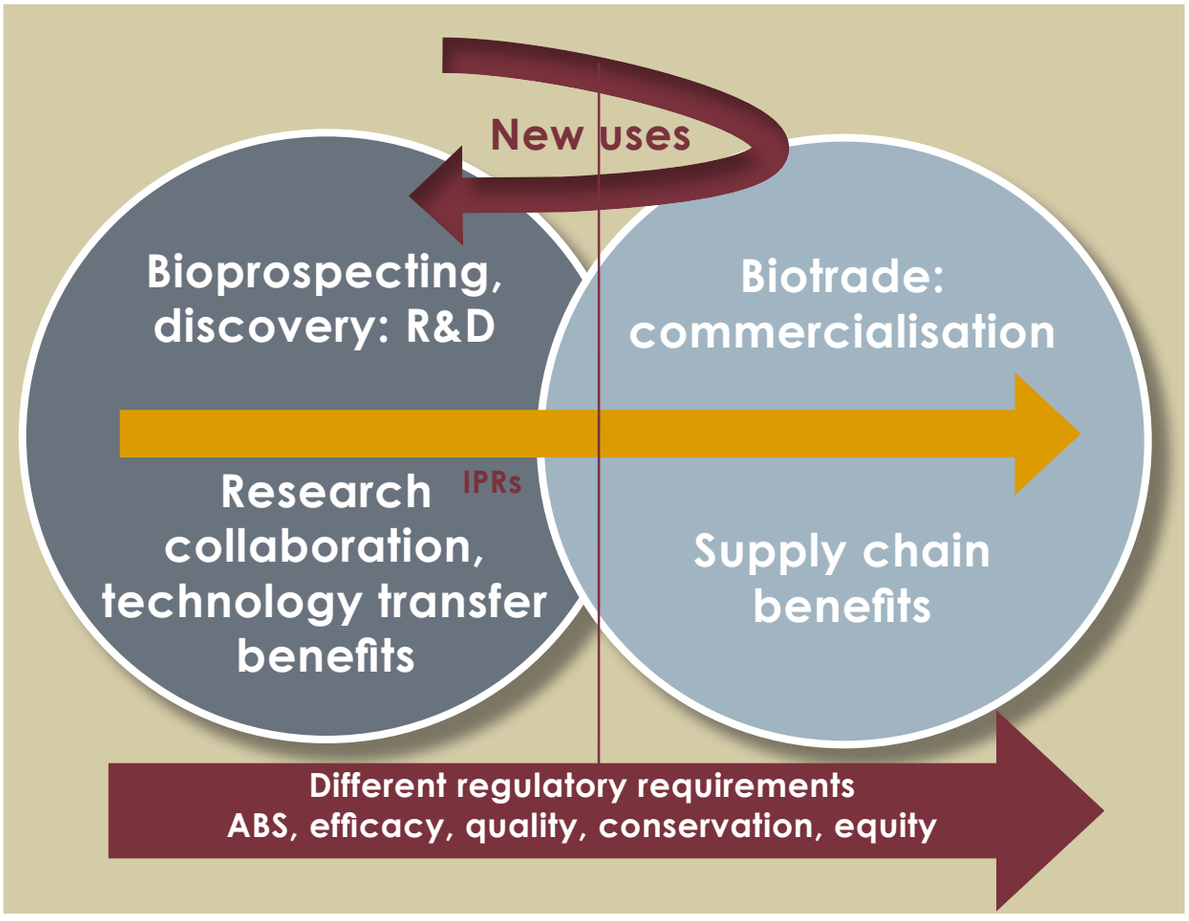


FIGURE 8. Activities, Benefits and Regulatory Requirements for Bioprospecting and Biotrade are Very Different *(Wynberg and Laird 2015)*

ADDITIONAL RESOURCES:

- Laird, S. 2013. Bioscience at a Crossroads. Access and Benefit Sharing in a Time of Scientific, Technological and Industry Change: The Pharmaceutical Industry. Montreal: Secretariat of the CBD.
- Laird, S. 2013. Bioscience at a Crossroads: Implementing the Nagoya Protocol on Access and Benefit Sharing in a Time of Scientific, Technological and Industry Change: Industrial Biotechnology. Montreal: Secretariat of the CBD.
- Laird, S. and Wynberg, R. 2013. Bioscience at a Crossroads: Implementing the Nagoya Protocol on Access and Benefit Sharing in a Time of Scientific, Technological and Industry Change. The Botanicals Sector. Montreal: Secretariat of the CBD.
- Wynberg, R. 2013. Bioscience at a Crossroads: Implementing the Nagoya Protocol on Access and Benefit Sharing in a Time of Scientific, Technological and Industry Change. The Agricultural Sector. Montreal: Secretariat of the CBD.
- Wynberg, R. 2013. Bioscience at a Crossroads: Implementing the Nagoya Protocol on Access and Benefit Sharing in a Time of Scientific, Technological and Industry Change. The Food and Beverage Sector. Montreal: Secretariat of the CBD.
- Wynberg, R. and Laird, S. 2013. Bioscience at a Crossroads: Implementing the Nagoya Protocol on Access and Benefit Sharing in a Time of Scientific, Technological and Industry Change. The Cosmetics Sector. Montreal: Secretariat of the CBD.

SESSION 13

AGRICULTURE AND ABS

Duration 2h
Structure Presentation; Group work; Reporting; Discussion
Instructor Peter Munyi
Objectives

- To provide a basic understanding of the particular situation and needs of the agricultural sector in the ABS context.
- To introduce the ITPGRFA.
- To instil a working knowledge of the Standard Material Transfer Agreement and associated processes.

Key References

- The International Treaty on Plant Genetic Resources for Food and Agriculture. Available at www.planttreaty.org
- Wynberg, R. 2013. Bioscience at a Crossroads. Access and Benefit Sharing in a Time of Scientific, Technological and Industry Change: The Agricultural Sector. Montreal: Secretariat of the CBD.

ACCESS TO AGRICULTURAL GENETIC RESOURCES

Access to genetic resources is premised upon the idea that naturally occurring chemicals, enzymes or other biological components can be identified and then either adapted or developed for use. Familiar examples today may be found in the fields of cosmetics and pharmaceuticals, although many other industrial sectors also use nature as a raw material or for inspiration. Use of genetic resources is almost as old as human activity, particularly in medicine and food production. At least since the advent of settled agriculture some 10 000 years ago, humanity has been developing and adapting a range of plant and animal species for food production. This process of development and adaptation has been, and despite the latest technologies, remains dependent on access to a range of sources of genetic material providing desired traits.

A key characteristic of the contribution of genetic resources in crop development is that most 'elite lines', or improved varieties, of crops have been developed from a wide range of parental lines, often in the tens or hundreds. The time line for such development is usually at least five years. Moreover, to the extent that the contributions of particular parental lines can be identified, these are usually modest and cumulative. Once a particular crop variety is developed to the point that it can be distributed to farmers, the commercial business tends to be more one of profit from volume rather than profit per transaction. In short, the development of new crop varieties is highly dependent upon access to a wide range of genetic resources that may individually only make modest contributions to a relatively low profit per sale of final product.

There are some exceptions to this pattern, which have become particularly notable as agricultural research, which was historically dominated by the public sector, has become increasingly driven by the private sector. These exceptions usually relate to the products of genetic engineering, but even these are dependent on underlying elite lines with more typical parentage.

In contrast to some other sectors, particularly pharmaceuticals, which usually focus on single source products generating high revenues, most actors in the agricultural sector are highly sensitive to transaction costs. Even modest additional costs in plant breeding can affect the end price of seed to farmers because of the high profit margins involved. This is not just a question of direct benefit sharing, but the costs of the whole negotiation process that goes along with it. To avoid the increasing privatisation of genetic resources causing an excessive escalation in transaction costs, FAO supported, first, the development of the International Undertaking on Plant Genetic Resources for Food and Agriculture and, subsequently, the **International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)**. The Treaty provides a framework for the conservation and sustainable use of plant genetic resources for food and agriculture including, a **Multilateral System**, which provides for access and benefit sharing for a limited range of crop species. The Multilateral System has been established for several years now and, despite some growing pains, appears to be supporting the movement of large quantities of genetic resources between countries and international collections without significant difficulties.

At first sight, the **Standard Material Transfer Agreement (SMTA)** is a highly complex, jargon-heavy document that is not readily accessible to non-specialists. However, there are two reasons why this should not be considered as intimidating in the way that it would be with an ordinary bilateral contract. First, the fact that the contract terms and conditions are not individually negotiated and may not be varied means that no individual needs to be concerned about being exploited. Second, the primary responsibility for ensuring that the terms and conditions of the SMTA are implemented does not lie with signatories to a particular agreement.

The key points that all signatories must be aware of are:

- no variation of the terms and conditions of the agreement is allowed;
- the agreement must follow the genetic resources that are its subject in any further transactions;
- the marketing of any product incorporating genetic resources from the Multilateral System that is not freely available to others for the purposes of research, training or breeding in the food and feed sector will trigger a requirement for the payment of a royalty to the Multilateral System; and
- information on transfers of genetic resources and the marketing of products must be communicated to the Multilateral System.

Besides the Multilateral System, the Treaty also and perhaps more significantly, institutionalises Farmers' Rights. Farmers' Rights are a precondition for the maintenance of crop genetic diversity, which is the basis of all food and agriculture production in the world. Realising Farmers' Rights means enabling farmers to maintain and develop crop genetic resources as they have done since the dawn of agriculture, and recognising and rewarding them for this indispensable contribution to the global pool of genetic resources. Farmers' Rights are crucial for ensuring present and future food security in general, and in the fight against rural poverty in particular.

(Adapted from a summary by Robert Lewis-Lettington, ABS Course Nairobi, 2011)

ENSURING POLICY COHERENCE: THE NAGOYA PROTOCOL AND THE ITPGRFA

The policy environment for agriculture has changed significantly over the past twenty years, leading to a variety of international policies, regulations and laws that influence ABS in this sector. The most far-reaching of these include the ITPGRFA and the Nagoya Protocol. The ITPGRFA, which entered into force in 2004, is a legally-binding international agreement that promotes the conservation and sustainable use of Plant Genetic Resources for Food and Agriculture (PGRFA) and the fair and equitable sharing of the benefits arising out of their use, in harmony with the CBD. The ITPGRFA establishes a Multilateral ABS System for 64 of the most important food security and forage crops (included in Annex 1 of the Treaty) and those on which most countries are interdependent. These comprise a pool of genetic resources that are accessible to everyone. Through this system, collections of local, national and international gene banks that are in the public domain and under the control of contracting parties share a set of rules of facilitated access. Those who access genetic materials agree that they will freely share any new developments with others for further research and, if not, will pay a percentage of any commercial benefits from their research into a common benefit-sharing fund for developing countries. A Standard Material Transfer Agreement (SMTA) sets agreed terms and conditions for the transfer and use of these crops for the purpose of research, breeding and agricultural training.

Although the International Treaty applies to all PGRFA, the multilateral system for ABS applies only to those genetic resources included in Annex 1. Genetic resources not included in Annex 1 of the treaty comprise many food and agricultural crops and all ornamental crops. Legal access to these genetic resources as well as to Annex 1 crops used outside of the scope of the ITPGRFA, for example for pharmaceutical purposes, is thus governed by the CBD – as well as the Nagoya Protocol once it enters into force. ABS for these resources, as well as for animal, invertebrate and microbial genetic resources used in the agriculture sector, can therefore only be managed by bilateral arrangements with national competent authorities in each country, who need to give their PIC for collection, before negotiating an agreement based on mutually agreed terms.

The Nagoya Protocol explicitly recognises in its preamble the importance of genetic resources to food security; its distinctive features and problems needing distinctive solutions; and the interdependence of all countries with regard to genetic resources for food and agriculture. The fundamental role of the ITPGRFA and the FAO Commission on Genetic Resources for Food and Agriculture is also acknowledged, especially with regard to the special nature and importance of genetic resources for food and agriculture for achieving food security worldwide, and for the sustainable development of agriculture in the context of poverty alleviation and climate change.

In its operational provisions, the Nagoya Protocol gives special consideration to the importance of genetic resources for food and agriculture and their special role for food security[i]. It also explicitly acknowledges the ITPGRFA, which was developed in harmony with the CBD, and is intended to be implemented in a mutually supportive manner with other international instruments relevant to the Protocol[ii]. Parties are required to encourage the development, update and use of sectoral and cross-sectoral model contractual clauses for mutually agreed terms and of voluntary codes of conduct, guidelines and best practices in relation to ABS[iii].

Important opportunities exist for collaboration between the Nagoya Protocol and the Commission on Genetic Resources for Food and Agriculture, which has a long-standing history of work on ABS and has recently established an Ad Hoc Technical Working Group on Access and Benefit Sharing for Genetic Resources for Food and Agriculture[iv] [v]. This Working Group represents an important step towards implementing the ITPGRFA and the Nagoya Protocol in a mutually supportive manner.

The ITPGRFA has been in force for almost ten years and has led to new ways of exchanging genetic resources and ensuring equitable benefit sharing. Harnessing these experiences and tailoring them to suit new technological, scientific and environmental challenges is a vital task in forthcoming years. The Nagoya Protocol represents an important next step to ensure that ABS goals are comprehensively implemented to meet food security, conservation and development goals in a world where agrobiodiversity is increasingly under threat.

[i] Article 8.

[ii] Article 4.3, Nagoya Protocol.

[iii] Articles 19 and 20.

[iv] CGRFA 2012. Commission on Genetic Resources for Food and Agriculture, Thirteenth Regular Session, Rome 18-22 July 2011, Access and Benefit Sharing for Genetic Resources for Food and Agriculture.

[v] FAO 2012. First Session of the Ad-hoc Technical Working Group on Access and Benefit Sharing for Genetic Resources for Food and Agriculture. Longyearbyen (Svalbard), Norway, 11-13 September, 2012. CCGRFA/WG-ABS-1/12/Report.

(Wynberg 2013)

ADDITIONAL RESOURCES:

- Bioversity International 2009. Guide for the CGIAR Centres' use of the SMTA.
- FAO 2001. Commission on Genetic Resources for Food and Agriculture - Transaction Costs of Germplasm Exchange under Bilateral Agreements.
- Moore, G. and Tymowski, W. 2005. Explanatory Guide to the ITPGRFA. Gland: IUCN.

SESSION 14

EX-SITU ACCESS AND BENEFIT SHARING

Duration 1h15
Structure Presentation; Facilitated discussion
Instructor Andreas Drews
Objectives

- To understand the role of ex-situ collections in the International Benefit-Sharing Regime.
- To discuss ways of linking access in ex-situ collections with national ABS frameworks.
- To explore measures which ensure that ex-situ collections can document the legal sourcing of new accessions.

INTRODUCTION

Based on the definition given by the ITPGRFA, ex-situ collections are understood as collections of genetic resources maintained outside their natural habitat. Genetic resources are either living or dead organisms or, according to the CBD, any material of plant, animal, microbial or other origin containing functional units of heredity. The following are examples of ex-situ collections: botanical gardens, living birds in a zoo, cultured bacteria in a microbial collection, dried plant parts in a herbarium, or collections comprising parts of organisms where these parts still contain functional DNA. According to this understanding, collections of alcoholic extracts, which due to the extraction method used do not contain DNA any longer, do not qualify as ex-situ collections. A well-known example of this is the extract collection of InBIO in Costa Rica. Further, 'collections' of biological data as DNA or protein sequence data banks are not regarded as ex-situ collections because they comprise information only, and do not contain material derived from genetic resources.

The function of ex-situ collections is to collect genetic resources, preserve them and, in the case of public collections, make them available to third parties for conservation, breeding or research purposes. Public ex-situ collections make their specimens available to non-commercial and commercial customers for free or they may sell them - the latter is generally the case with microbial collections.

ABS ISSUES

Ex-situ collections play an important role in ABS but defy simple models of regulation and oversight. Genetic resources stored in an ex-situ collection, which is operated under national law, are covered by Art. 15 of the CBD when they are provided by a Contracting Party which is the country of origin of the resource, or when the resource was acquired in accordance with the CBD. The topic of ex-situ collections was not prominent in negotiations to develop the Nagoya Protocol. At the second meeting of the Interregional Negotiating Group of the Working Group on ABS in October 2010, the question of how to address ex-situ collections was marked as an outstanding issue in a footnote. During the final closed-door negotiation process of COP-10 the issue of ex-situ collections disappeared from the text of the Nagoya Protocol.

It is probable that the vast majority of genetic resources stored in ex-situ collections are not covered by CDB Art. 15. To clarify the legal status of ex-situ accessions in a given collection, issues of ownership and sovereignty over the stored genetic resources have to be solved. Additionally, issues of ownership over genetic resources in the country of origin need to be addressed. While the UN General Assembly resolution 1803 (XVII) of 1962 declares the 'right of peoples and nations to permanent sovereignty over their natural wealth and resources', confirmed by the CBD in the context of ABS, issues of ownership must be clarified through national law. Ownership over genetic resources is, for example, retained by the state if this is stipulated in the constitution, even if the material is transferred to an ex-situ collection. This may change however if ownership rights are legally transferred. Despite these unresolved legal issues, it is general practice that public ex-situ collections in principle make all their genetic resources available.

ABS CODES OF CONDUCTS

Many institutions that manage ex-situ collections have started developing their own ABS guidelines. Prominent examples are the 2003 Code of Conduct of the International Plant Exchange Network (IPEN), the 2000 Principles on Access to Genetic Resources and Benefit-Sharing of Botanical Gardens Conservation International (BGCI) and the 2011 Micro-Organisms Sustainable Use and Access Regulation International Code of Conduct (MOSAICC), first developed in 1999.

The 172 members of IPEN and the 21 botanical gardens and institutes that have endorsed the BGCI principles have declared that any new accessions will be acquired on the basis of PIC and that they will develop policies on how to deal with accessions present in their collections that were not collected on the basis of PIC. Members of IPEN have also agreed to seek new PIC when accessions are sold for commercial purposes. However, endorsers of the BGCI principles consider themselves free to sell their accessions without PIC, provided they have developed a clear policy on commercialisation. The MOSAICC also advise ex-situ collections to acquire new resources with PIC and MAT and to clarify utilisation and IPR issues. In cases where no PIC is available, MOSAICC recommends that the country of origin be determined, and ex-situ collections are cautioned to only exchange samples with PIC or an identified country of origin.

MULTILATERAL SYSTEM OF ACCESS AND BENEFIT-SHARING OF THE ITPGRFA

The only example of internationally negotiated and accepted rules on ABS for ex-situ collections is the Multilateral System of Access and Benefit-sharing (MLS) of the ITPGRFA. The MLS includes all plant genetic resources for food and agriculture listed in Annex 1 that are under the management and control of the Contracting Parties and in the public domain. Annex 1 comprises 81 species of forage plants in 29 genera and a non-specified amount of species for human consumption in 51 genera. New genetic resources can only be added to Annex 1 by unanimous decision of the 134 members of the ITPGRFA. The MLS also consists of the Annex 1 genetic resources in ex-situ collections of the International Agricultural Research Centres of the Consultative Group on International Agricultural Research (CGIAR). From an African perspective the relevant CGIAR ex-situ collections are the:

- World Agroforestry Centre (ICRAF), Nairobi (Kenya)
- International Livestock Research Institute (ILRI), Nairobi (Kenya) and Addis Ababa (Ethiopia)
- International Institute of Tropical Agriculture (IITA), Ibadan (Nigeria)
- Africa Rice Center (AfricaRice), Cotonou (Benin)

Several other CGIAR centres outside of Africa also store material originating in Africa.

In contrast to the model of the Nagoya Protocol building on the principle of MAT negotiation for each access, the ITPGRFA provides for a universal Standard Material Transfer Agreement (SMTA) for facilitated access. The forms of benefit sharing are

largely non-monetary – such as exchange of information, providing/facilitating access and transfer of technology, and undertaking capacity-building. Monetary benefit sharing from users is required in cases of commercialisation whenever a product is made available with access restriction to third parties for further research and breeding. This is for example the case if seeds are protected by IPRs that restrict research and breeding. Such benefits need to be paid into the Trust Account of the Governing Body. While the Nagoya Protocol foresees that the benefits shall be shared with the original owners of the genetic resources, the ITPGRFA opted for a model of indirect benefit sharing, in part because the original owners cannot be determined.

ABS LEGAL FRAMEWORKS

Several national ABS legislative frameworks cover access to genetic resources held in ex-situ collections. Table 4 gives an overview of ex-situ provisions in the ABS frameworks of Ethiopia, Kenya, South Africa and Uganda. While all four ABS laws cover national genetic resources held under ex-situ conditions, only the 2005 ABS Regulations of Uganda state clearly that the access rules are applicable to ex-situ collections. The 2007 Ugandan ABS Guidelines even stipulate that the Competent National Authority (CNA) may issue access permits for Ugandan GR that are held in ex-situ collections in other countries. The 2009 Ethiopian ABS Regulations only deal with ex-situ collections of the Multilateral System of the ITPGRFA. The stance of the Ugandan government with regard to sovereign rights over determining access to its genetic resources was taken up by the African Union Strategic Guidelines for the Coordinated Implementation of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation, adopted by the 15th African Ministers Conference on the Environment in March 2015. Paragraph 9 of the Guidelines determines that 'having or obtaining physical access to (African) genetic resources, including from ex-situ collections, does not imply that prior informed consent for their utilisation has been granted or is not required. Utilisations without prior informed consent and without the establishment of mutually agreed terms are considered illegitimate. (AU) Member States shall cooperate to enforce their sovereign rights in this regard.'

TABLE 4: Provisions on Access to Genetic Resources in Ex-situ Conditions in Selected African ABS Frameworks

Country	ABS-relevant Acts	ABS-relevant Regulations	ABS-relevant Guidelines
Ethiopia	Applies to access to all GR (Art 4.1)	Deals only with ex-situ GR that are in the MLS	*n.a*
Kenya	Covers all GR of Kenya (Art 53)	*no provisions*	*n.a*
South Africa	Covers all indigenous biological resources (Art 80(2))	*no provisions*	*n.a*
Uganda	Covers all GR of Uganda (Art 44)	Applies to access to GR and parts thereof, also in ex-situ collections (Art 4(1))	CNA may issue permits for GR in ex-situ collections in any country when Uganda is country of origin (Para 3.4)

A recent example from a country hosting large ex-situ collections is the French Draft Law on Biodiversity (No. 1847) prescribing that the benefits arising from new uses of genetic resources, which were acquired by collections prior to the entry into force of the CBD, are to be shared directly with the collection's holder. In cases of post-CBD collections, the sharing of the benefits that arise from the utilisation of ex-situ genetic resources, which were collected in other countries, is subject to the applicable legislation of Contracting Parties to the CBD that have ratified the Nagoya Protocol.

The EU Regulation No. 511/2014 on compliance measures for users from the Nagoya Protocol on ABS also deals with ex-situ collection. While the French Draft Law includes all specimens in ex-situ collections, the EU Regulation only covers genetic

resources in ex-situ collections accessed after the entry into force of the Nagoya Protocol for the EU (Oct 2014). Furthermore, the Regulation applies only to genetic resources that were accessed in a Party to the Nagoya Protocol that has adopted ABS legislation or regulatory requirements.

The preamble of the EU ABS regulation explains that a system of registered collections within the Union should be put in place through the establishment of a voluntary register of collections to be maintained by the European Commission. Such a system would ensure that collections included in the register are guided by measures that restrict the supply of samples of genetic resources to third persons. Documentation would provide evidence of legal access, and ensure the establishment of MAT, where required. According to Art. 4.7, the aim of this system is to ensure that users who obtain a genetic resource from a registered collection are considered to have exercised due diligence as regards the seeking of all necessary information. This should prove particularly beneficial for academic, university and non-commercial researchers as well as small and medium-sized enterprises and should contribute to a reduction in administrative and compliance requirements.

Requirements for Registered Collections under EU Law

EU ABS Regulation Art. 5.3 states that in order for a collection or a part of a collection to be included in the register, a collection shall demonstrate its capacity to:

(a) apply standardised procedures for exchanging samples of genetic resources and related information with other collections, and for supplying samples of genetic resources and related information to third persons for their utilisation in line with the Convention and the Nagoya Protocol;

(b) supply genetic resources and related information to third persons for their utilisation only with documentation providing evidence that the genetic resources and the related information were accessed in accordance with applicable access and benefit-sharing legislation or regulatory requirements and, where relevant, with mutually agreed terms;

(c) keep records of all samples of genetic resources and related information supplied to third persons for their utilisation;

(d) establish or use unique identifiers, where possible, for samples of genetic resources supplied to third persons; and

(e) use appropriate tracking and monitoring tools for exchanging samples of genetic resources and related information with other collections.

TRANSBOUNDARY ISSUES

Transboundary issues with regard to ownership and sovereignty over granting access are relevant for ex-situ collections in two cases:

- Regional collections are comprised of genetic resources from different countries.
- National collections include accessions from other countries.

Two prominent examples of regional gene banks in Africa are the SADC Plant Genetic Resources Centre (SPGRC) in Zambia and the East-African Plant Genetic Resources Network (EAPGREN) in Uganda. Access to the specimens stored in these gene banks appears to be possible for member states only (in the case of the SPGRC, all SADC members, and in the case of the EAPGREN, its eight member states). Thus it seems that both collections hold the accessions in trust for their member states. Many African countries maintain national ex-situ collections, mostly for plant genetic resources.

Those collections may well contain genetic resources coming from other African countries. In the course of establishing or revising ABS frameworks the issues of PIC and MAT for these specimens need to addressed and resolved, especially if the country's legal system puts ex-situ collections under the scope of ABS regulations. As shown in Table 4, Uganda and other African countries need to cooperate with regard to PIC and MAT to deal with situations of access to ex-situ specimens originating from Uganda but stored in another country.

SESSION 15

BIOPIRACY, RIGHTS AND BENEFITS

Duration 1h30
Structure Group work; Facilitated discussion
Instructor Rachel Wynberg
Objectives

- To examine alleged incidents of 'biopiracy'.
- To discuss ways of preventing misappropriation of TK.
- To distinguish between legitimate use of genetic resources and TK, and biopiracy.

Key Reference

- Hamilton, C. 2006. Biodiversity, biopiracy and benefits: What allegations of biopiracy tell us about intellectual property. Developing World Bioethics 6 (3) 158-173.

WHAT IS BIOPIRACY?

Biopiracy is a term that is used very broadly, but often with widely different meanings and interpretations. Generally, however, biopirates are individuals and companies accused of one or both of the following acts:

- the misappropriation of genetic resources or TK through the patent system
- the unauthorised collection for commercial ends of genetic resources or TK

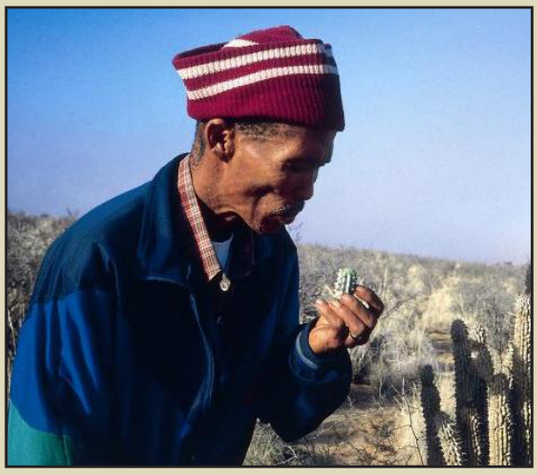
This session examines key cases to assess whether or not these are examples of biopiracy. The session is highly interactive and focused largely on group discussion and debate.

CASE STUDY A: HOODIA

This story emerges from the arid regions of southern Africa, where the succulent plant Hoodia has long been used to stave off hunger and thirst by the indigenous San peoples, the oldest – and most marginalised - human inhabitants in Africa. The San are widely distributed across very remote parts of southern Africa, including South Africa, Angola, Namibia and Botswana and Hoodia species also occur in these countries.

Traditional knowledge about Hoodia was published by colonial botanists and was used by the South African-based Council for Scientific and Industrial Research (CSIR) to investigate the plant's potential as an appetite suppressant. In 1997, after a lengthy period of development, the CSIR patented use of the active constituents of the plant responsible for suppressing appetite. A subsequent agreement was developed in 1998 between the CSIR and the UK-based company Phytopharm, followed by a further license and royalty agreement between Phytopharm and Pfizer, the US-based pharmaceutical giant.

Up until 2001, the San remained oblivious to the fact that their knowledge of Hoodia had commercial application, and that this knowledge had led to research, scientific validation, and the filing of international patents by the CSIR. They were, moreover, excluded from lucrative deals being struck to develop commercial products. The dietary control of obesity is valued at $3 billion per annum in the United States alone and thus returns were expected to be lucrative.



In 2001 the San were alerted to use of their knowledge without consent. In fact, the CSIR had told Phytopharm that the 100,000 strong San 'no longer existed'! Political pressure and intense media coverage forced the CSIR to negotiate with the San, leading to the adoption of an exclusive benefit-sharing agreement in 2003.

The agreement stated that the San would receive 6% of all royalties received by the CSIR from Phytopharm for products and 8% of milestone income when certain targets were reached. Monies received by the San would be extracted from royalties received by the CSIR, but profits of Pfizer and Phytopharm were to remain untouched. Money was to be paid into a Trust set up jointly by the CSIR and the South African San Council 'to raise the standard of living and well-being of San peoples of southern Africa'. Strict rules were developed to distribute the funds. San representatives recognised that knowledge about the plant was held by the community across several southern countries and therefore agreement was reached to share the money between all San in southern Africa.

In 2003, Pfizer merged with Pharmacia and closed its Natureceuticals group, which had been responsible for developing Hoodia. Pfizer discontinued clinical development of the drug and handed the rights back to Phytopharm. In 2004, the consumer giant Unilever stepped in and began investigating Hoodia as an ingredient for its line of Slim Fast© drinks. A massive cultivation programme was launched, involving over 300 ha of Hoodia in South Africa and Namibia, clinical safety trials, manufacturing, and an agreement to develop a R750 million (about $75 million) extraction facility.

Caught up in the Hoodia frenzy, a swathe of opportunistic Hoodia growers and traders emerged based on the incorporation of raw material into herbal supplements. By 2004 concerns about the threats posed to natural populations through unregulated collection had led to the inclusion of Hoodia species in Appendix II of CITES. Another benefit-sharing agreement was developed between the San and Hoodia growers but this has not yet been approved by the South African government in terms of the 2008 ABS Regulations.

In 2008 Unilever announced it was abandoning plans to develop Hoodia as a functional food, because of safety and efficacy concerns. Although two of the largest companies in the world have taken on Hoodia, the product remains to this day undeveloped.

(Wynberg and Chennells 2009)

CASE STUDY B: THE KENYA WILDLIFE SERVICE AND NOVOZYMES

In May 2007, The Kenya Wildlife Service (KWS) and Novozymes (a biotech company based in Denmark) entered into a five-year partnership for the collection, identification, and characterisation of microorganisms from Kenya's national parks.

Under the Wildlife and Conservation Management Act of 1972 (amended in 1989), KWS has jurisdiction over the management of Kenya's national parks and reserves, and is responsible for regulating research in these areas, including vetting research proposals and issuing permits for research and for the export of any samples.

The KWS-Novozymes agreement grew out of pre-CBD collections that Novozymes received, and their subsequent efforts to address the absence of an agreement associated with these collections after a commercial product, Pulpzyme, was developed - based on a microorganism native to Kenya (no TK was involved). Pulpzyme reduces the amount of chlorine needed to bleach wood pulp.

It remains unclear who collected the samples, or where, and they may have been the result of a staff member collecting while on holiday, a practice common in the years prior to the CBD. Within the company's database, however, the country of origin – Kenya - was clear. It was assumed that collections took place in a protected area, and thus under the management of KWS, so the company approached KWS to reach an agreement.

Commercial sales of Pulpzyme have been modest, but Novozymes sought to develop a benefit-sharing agreement for proceeds from this product in order to 'make things straight... in the spirit of the CBD'. A deal was negotiated to pay an accumulated royalty on past sales, and running royalties on any future sales, as well as to build a new partnership around microorganism collection, identification, and characterisation with a focus on training Kenyan students in taxonomy, isolation and identification of microorganisms, thus transferring advanced technology to Kenya.

The 2007 Novozymes-KWS agreement did not result from a particular interest in bioprospecting partnerships in the region on the part of Novozymes. Instead it resulted from commercialisation of much earlier collections, and a desire to negotiate a benefit-sharing agreement. However, the microbial diversity available in Kenya is of interest to the company, which stands to benefit from access to novel genetic resources. It is the case, however, that the company is not as dependent upon collections from nature as it was in the past. Advances in science and technology, in particular genomic science, have made it possible to access the enormous biodiversity in Denmark, and most of their products derive from Danish biodiversity. The company also has access to increasing numbers of genomes placed in the public domain.

Under the agreement, KWS – as a representative of the government – was to receive running royalties on any commercial product developed. Novozymes was also to provide KWS with an upfront payment, a lump sum that covers the costs of sample collections and laboratory work. If research results from the

microbial discovery laboratory in Kenya showed promise, and Novozymes wished to pursue something further, it would request samples for research within the company's laboratories, and this would trigger a milestone payment to KWS.

It was intended that any intellectual property coming out of the partnership would be co-owned by both parties but there are no patents to date. The case is now under legal dispute through a challenge by a Kenyan national.

(Summary by Peter Munyi)

CASE STUDY C: SCELETIUM

Sceletium tortuosum (kanna, kougoed) is a succulent plant that grows in South Africa. TK relating to the plant was held originally by the San peoples, who are acknowledged as being the earliest humans in the region. There are about 10 000 San peoples living in three different communities in South Africa. Another indigenous group, the Nama, first recorded in South Africa from about 2 000 years back - are not only in some way related to the San, but also acknowledge having obtained much of their plant knowledge from the San. The Nama are more numerous than the San, numbering approximately 100 000 people and spread over many rural communities in South Africa. They number about 1,5 million people in neighbouring Namibia.

Knowledge of the mood enhancement properties of Sceletium was freely shared and became widespread over recent centuries, not only amongst San peoples but also amongst other rural communities in South Africa, including primarily the Nama, but also the Baster and Griqua in the Northern Cape region.

Several scientists undertook research on Sceletium, and a patent was registered in 2000 after the researchers had obtained medicinal knowledge relating to the plant and much assistance from Nama-speaking traditional healers from two rural villages in the Northern Cape region. The PIC of knowledge holders was not obtained prior to this patent being registered. Later on, however, the patent holder - HGH Pharmaceuticals - acknowledged the San as being the 'primary knowledge holders' of the TK, and entered into a benefit-sharing agreement to pay royalties to the San in the event of commercial success. However, in an attempt to respond to the fact that the two rural Nama-speaking communities had contributed towards the patent, and were in addition to the San also 'knowledge holders', the agreement went on to provide that the San would allocate 50% of the entire royalty received to the Nama villages of Nourivier and Paulshoek. An advance in lieu of royalties has been paid annually since 2008, and the market release of the product is expected soon.

(Summary by Roger Chennells)

ADDITIONAL RESOURCES:

- Kohli, K. and Bhutani, S. 2011. 'Chasing Benefits'. Issues on Access and Benefit Sharing to Genetic Resources and Traditional Knowledge with Reference to India's Biodiversity Regime. New Delhi: Kalpavriksh.
- Twarog, S. and Kapoor, P. (eds) 2004. Protecting and Promoting Traditional Knowledge Systems - National Experiences and International Dimensions. Geneva: UNCTAD.

DAY FIVE

SESSION 16

TOOLS TO ENGAGE IN THE ABS PROCESS

Duration 2h
Structure Presentation; Group exercises; Role play
Instructor Core team
Objectives

- To introduce various tools that can be used to implement ABS – e.g. MTAs, benefit-sharing agreements, and community resolutions for PIC and MAT.
- To be aware of the importance of negotiation at different stages of the ABS process.

TABLE 5. Key Questions for Consideration during the PIC Process *(ICIMOD 2009)*

STEP 1 PRELIMINARY PLANNING	STEP 2 DETAILED PLANNING	STEP 3 DISCLOSURE	STEP 4 OUTCOME
Who participates in giving PIC?	Who takes decisions in the community?	Who owns the outputs from the bioprospecting?	Who benefits? At whose cost?
Who is left out in the PIC process?	Who controls the information?	Who has access to the knowledge and products?	Whose capacity is enhanced, and how?
Who identifies problems?	What are the power dynamics?	Who owns the research and development data?	Who is empowered due to bioprospecting?
REALITY CHECK AND UNDERSTANDING			
Whose knowledge and resources are being accessed?			
Who is speaking the truth?			
Who is and who isn't informed in the proposed bioprospecting?			
Who understands the output of bioprospecting and who does not?			
Whose reality is left out?			

SAMPLE COMMUNITY RESOLUTION

RESOLUTION OF THE ………………… COMMUNITY INHABITING THE …………..……….….. (AREA), ………………………….. (COUNTRY)

It is hereby recorded that on ....[*day*]......., ...[*date, month & year*]........., ...[*number of attendees*]..... representatives of the ....[*name of community*]....... community met at ....[*place*].............. At this meeting, the bioprospecting project relating.............[*E.g.: to the use of traditional knowledge and/or transfer of indigenous biological resources*].............. was discussed.

At this meeting, it was resolved that:

1. We are the .....[*name of the community*]..... community, holders and owners of traditional knowledge/indigenous biological resources relating to ....
2. We have full knowledge of the bioprospecting project wherein ....[*name of bioprospector e.g company/research institution*]....... wants to use our traditional knowledge/indigenous biological resources relating to .... for the specific purpose of ....[*purpose of bioprospecting*]...... only.
3. We jointly agree to share our traditional knowledge/indigenous biological resource relating to .... with ....[*name of company/research institution*]....... for the purpose mentioned in 2 above.
4. We authorise ....[*name of person and ID number*]..........., [*further description – e.g.: the chairperson of the Executive Committee of the community*]........, to represent us.
5. This authorisation is for the agreement with ....[*name of company/research institution*]......, for the purpose stated above, and does not relate to any other agreement.
6. This resolution will be signed by ....[*number of members signing the resolution*]..... members of our community, namely: ....[*names and ID numbers of chosen members*]....... or [*the Executive Committee, as the case may be*]....... on our behalf.

Signed at ......[*place*]............. on this ....[*date*].....day of ...(*month*]...... 20.........

__________________________________ __________________________________

Full Names: .... Full Names: ....

Duly representing the .... Community Duly representing the .... Community

[Make provision for the number of members signing this resolution]
………………………………………..

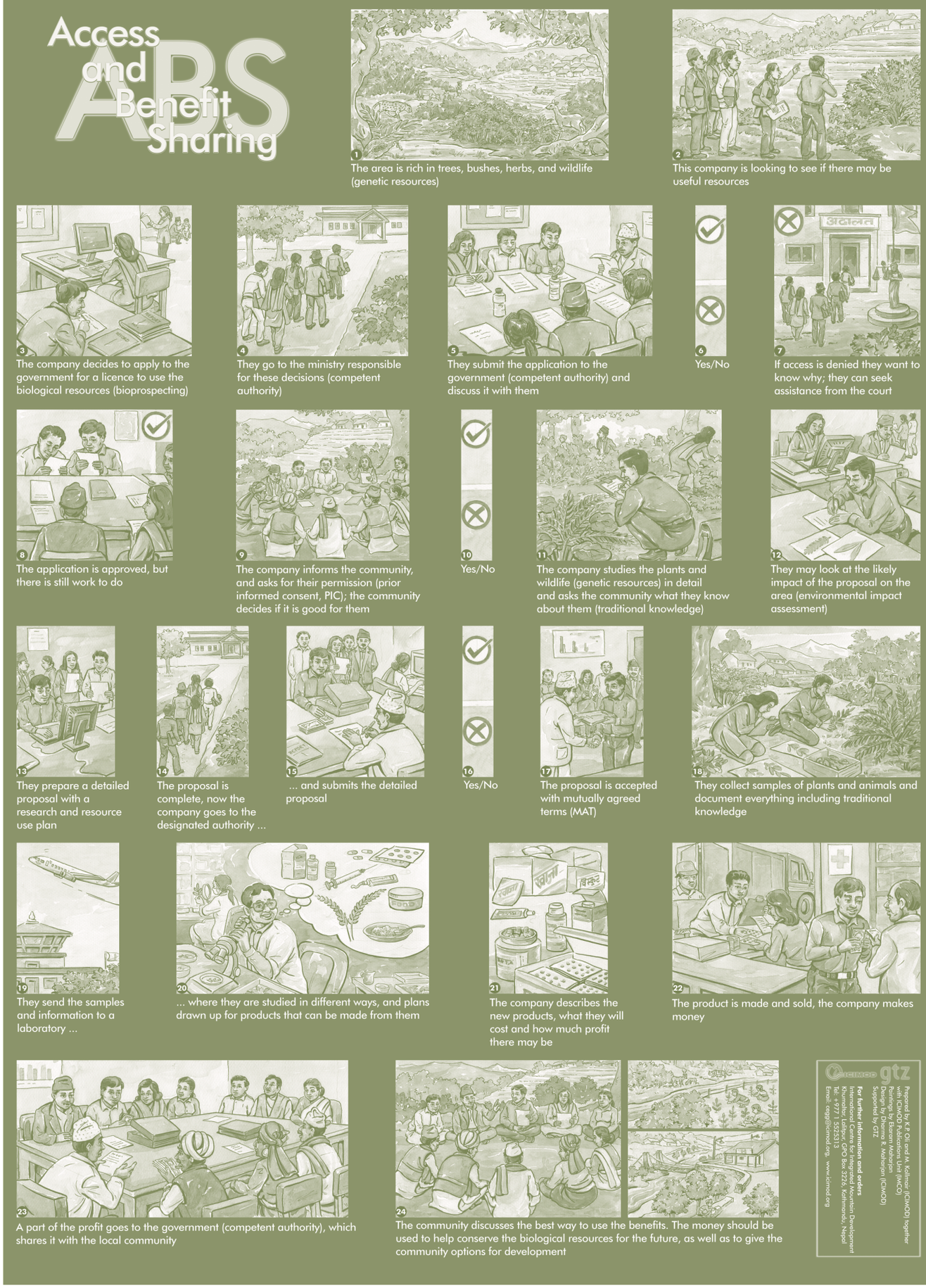


FIGURE 9. General Legal Process for ABS *(ICIMOD 2009)*

ABS POSTER: STEPS IN THE ABS PROCESS

The ABS Poster (Figure 9) outlines the ABS process step-by-step based on an Indian example. The individual steps are outlined in chronological order corresponding to the picture numbers. The detailed procedure can be explained step by step as described below:

Pictures 1 and 2

Bioprospectors who represent companies are aware of the availability of valuable genetic resources in village X of country Y. They express interest in bioprospecting.

Picture 3

The bioprospectors seek prior approval from the competent authority in country Y.

Pictures 4 and 5

The bioprospectors obtain and complete the appropriate PIC application for country Y and submit the application at the biodiversity authority office. The final decision will be announced after the official procedure is complete, within the legally specified time.

Pictures 6, 7 and 8

The competent authority announces the decision, which is either acceptance or rejection. In case of rejection, the bioprospectors may seek review via the court. However, the availability of this option varies from country to country. If the application is approved, the bioprospectors take the next step required by the legislation.

Pictures 9 and 10

The legislation of country Y requires bioprospectors to obtain PIC from the communities/TK holders of the resources of village X as well as from government and relevant stakeholder committees. Therefore, the bioprospecting team visits the community to obtain PIC from them. While obtaining PIC, the team informs the concerned stakeholders of the details of their bioprospecting plan (what resources they will use, what they will do with the resource, and how they will share the benefits with the national government and the community, and so forth). The community asks the bioprospectors questions about the bioprospectors' proposal. After thorough discussion between the bioprospectors and the community, the community announces their decision to accept or reject the proposal. If they accept, the bioprospecting team takes the next step required by the ABS laws of country Y. If the community rejects the proposal, then the bioprospectors may look to the ABS laws to see if they have any other options.

NOTE:

PIC options may vary from country to country. The law in relation to PIC for the particular country needs to be verified.

Pictures 11 and 12

The bioprospecting team gets a green PIC signal from village X. The bioprospectors then conduct preliminary research on the biological resources and associated TK in the village. They may also conduct an environmental impact assessment (to understand the potential impact of their work on the ecosystem and local community). The legislation of country Y directs whether or not, and in what situation, this assessment is needed.

Pictures 13, 14, 15 and 16

The bioprospecting team completes its preliminary research in the village. From the findings of their study, they develop a detailed proposal with a research and resource use and benefit- sharing agreement. They submit the detailed proposal to the competent authority of country Y. The competent authority reviews the proposal. When the reviewing procedure is complete, which may take some time; the authority either accepts or rejects the proposal.

Picture 17

The competent authority (providing parties) and bioprospecting team (accessing parties) base their ABS agreement on MAT (terms and conditions that both parties agree upon). When the competent authority is satisfied with the MAT, it accepts the proposal.

Pictures 18 and 19

The bioprospecting team then conducts detailed research during which they collect samples of biological resources and document the TK in village X of country Y. The physical samples are either sent to a laboratory within country Y or abroad for detailed investigation of the chemical properties and to verify the properties indicated by TK.

Pictures 20, 21 and 22

Based on the findings of the detailed investigation of samples or TK, the company draws up a plan for the kind of products it can develop from the resource. The products may be medicine, food, cosmetics, or other. They then design a business plan for the products that they are going to manufacture from the accessed genetic resources. The products are then marketed and profits generated by the company.

Pictures 23 and 24

The bioprospecting team (the company) signs an agreement with the competent authority of country Y based on MAT. According to the benefit-sharing agreement, benefits in the form of money, royalties, upfront payments, resource sharing, and technology transfer must be shared by the bioprospectors with the country and community from where the resources were accessed. The bioprospecting company shares the agreed benefits with the government of country Y, represented by the competent authority. Based on the national legislation of country Y, the competent authority then shares the derived benefits with the community in village X, who are the owners of the accessed resources and TK. The community then decides how to utilise the benefits.

Union for Ethical BioTrade
SOURCING WITH RESPECT

[Place], [Date]

Dear Client,

You are purchasing plant materials of indigenous species from [country] through [Company name]. This trade is regulated by international and national law. Through the Convention on Biological Diversity and its subsidiary agreements, particularly the Nagoya Protocol on Access and Benefit Sharing, governments have agreed to principles governing the use of such plant materials for research, development and commercialization. These principles are applicable both in countries where the plant material is sought and in countries where it is used.

In order to allow the smooth trade of the plant material and prevent violation of principles on access and benefit sharing, [Company name] requests that you agree to a set of conditions, established in a legal document called an "Undertaking." Please find attached the text of the Undertaking, as well as an explanation of its background and importance of these conditions, and a glossary of its terms.

We ask you to please read all these documents carefully, sign the Undertaking and send it back to us. Please do not hesitate to come back to us in case you have any questions.

With kind regards,

[Company name]

Union for Ethical BioTrade
SOURCING WITH RESPECT®

BACKGROUND

What is the Convention on Biological Diversity (CBD) and the Nagoya Protocol?

The CBD is an international agreement between governments of over 190 countries, who have committed to protect and sustainably use biodiversity. The Nagoya Protocol puts measures to ensure the equitable sharing of benefits derived from the use of biodiversity. The countries – whether the origin of the biological resources or the location in which biodiversity-based research and product development is taking place – establish requirements to ensure that access to biodiversity takes place only with prior informed consent and under mutually agreed terms on how to share the potential benefits coming out of the use of biodiversity.

When do CBD requirements apply?

The CBD establishes obligations on access and benefit sharing in cases of research and development on the genetic or biochemical composition of plants and other elements of biodiversity. CBD requirements generally do NOT apply to the use of biological resources as raw material for product development and manufacturing. However, in these cases, it is important for companies to put measures in place that avoid unauthorized or illegal use of the plant material provided further along the supply chain. This is achieved by requesting the company receiving plant material to agree to certain terms and conditions, established in a legal text called an "Undertaking". The Undertaking shall ensure that both parties have clarity over the intended use of the plant material.

Why sign a document in order to send or receive plant material?

For companies working with biodiversity, signing a document that establishes the terms for the exchange of plant material is a simple approach to:

- Promoting transparency and understanding along the supply chain,
- Ensuring observance of agreements between provider and recipient,
- Supporting compliance with legal requirements, and
- Avoiding claims of biopiracy.

What uses of the plant material are permitted?

Companies receiving the plant material will be able to utilize it as an input and ingredient for its existing or new lines of products. For example, a dried fruit powder may be purchased as an existing ingredient in a breakfast cereal. It may also be purchased to assess its potential as an ingredient in a new line of yoghurts. Parties may also choose to expressly list the permitted uses of the plant material. Companies may also purchase the plant material for resale to other companies for the purposes of product development and manufacturing.

What uses of the plant material require further authorization?

If companies receiving the plant material would like to use the plant material for other purposes, such as research aimed at identifying new and useful properties, additional permits and authorizations are required. For example, assessing the potential of the dried fruit powder as a treatment for allergies or dry skin requires written permission from the company providing the plant material. Permission is also necessary if the company receiving the plant material intends to claim patents linked to new forms, uses or processes for the plant material. Such research may also trigger legal requirements on access and benefit sharing in the countries where the plant material is sourced or where it is being researched.

UNDERTAKING

by

[Company Name]
[legal address]
hereafter referred to as the **RECIPIENT**,

in favor of

[Company Name]
[legal address]
hereafter referred to as the **PROVIDER**

Background

1. The RECIPIENT will receive **plant parts** and/or **plant extracts** from the PROVIDER, as **raw material** for **product development** and/or **product manufacturing**, or for **resale** to other organizations for these purposes.
2. The PROVIDER is collecting and/or harvesting the plants used in the preparation of plant parts and/or plant extracts from [country/countries]. The RECIPIENT is developing and/or manufacturing the products that utilize these plants parts and/or plant extracts in [country/countries].
3. The RECIPIENT and PROVIDER are committed to implementing the letter and the spirit of the Convention on Biological Diversity (CBD), as well as national laws and regulations concerning biodiversity, in their negotiations and transactions. The PROVIDER is also a member of the Union for Ethical BioTrade and committed to gradually ensuring that their sourcing practices comply with the Ethical BioTrade standard.

Objective

4. The RECIPIENT enters into this Undertaking to agree to its terms, on the basis of which it is receiving [plant extracts and/or plant parts, with mention of species] from the PROVIDER.

Scope

5. The terms of this Undertaking cover the plant parts and/or plant extracts listed in clause 4; other plant parts that may have been transferred, even inadvertently, along with them; and any genetic material, biological molecules and biochemical compounds naturally occurring in these plants, plant parts and plant extracts (all together referred to as PLANT MATERIAL).
6. The sale of the PLANT MATERIAL should not be understood to provide access, permission to use or any other rights over traditional knowledge, innovations, practices, images or narratives of indigenous and local communities associated to the PLANT MATERIAL.

Definitions

7. The glossary in Annex I is an integral part of this Undertaking and should be taken into account in the drafting, implementing, interpreting and enforcing of its terms.

Union for Ethical BioTrade
SOURCING WITH RESPECT®

Rights and duties

8. Permitted uses. The RECIPIENT shall use the PLANT MATERIAL furnished by the PROVIDER exclusively as raw material for product development and/or product manufacturing, or for resale to other organizations for these purposes.
9. Intellectual property rights. The RECIPIENT shall only claim patents or other intellectual property rights connected or referring to the PLANT MATERIAL, new forms or uses of the PLANT MATERIAL, or new processes for preparing, producing or manufacturing the PLANT MATERIAL, if:
   a. There is prior, express and written permission from the PROVIDER; and
   b. There is compliance with any applicable legislative or regulatory requirements in the country or countries in which plants are collected or harvested and plant parts and/or plant extracts utilized, as defined in clause 2.
10. Change of use. The RECIPIENT shall only utilize the PLANT MATERIAL for other purposes – particularly **research and development** linked to new and useful properties of the PLANT MATERIAL, as well as planting, breeding, or in any way seeking to capture the genetic material of the PLANT MATERIAL for the purpose of reproduction – if:
   a. There is prior, express and written permission from the PROVIDER; and
   c. There is compliance with any applicable legislative or regulatory requirements for **prior informed consent** and **mutually agreed terms** in the country or countries in which plants are collected or harvested and plant parts and/or plant extracts utilized, as defined in clause 2.
11. **Transfer** to **third parties**. The RECIPIENT shall only sell, transfer or make available the PLANT MATERIAL to third parties with the assurance that these and any further people or organizations that obtain the PLANT MATERIAL are equally bound by the terms and conditions in this Undertaking.

Date:

_____

Signature

WORKING WITH INDIGENOUS PEOPLES - ETHICAL CONSIDERATIONS

Various organisations and societies have prepared codes of conduct or guidelines for good practice which apply when engaging with local and indigenous communities around accessing genetic resources and/or TK. Each organisation or society may suggest guidelines which are specific to its discipline, but some common points are:

- Participation should be **voluntary**, and agreements entered into with willingness and **good faith on both sides.**
- There should be **full disclosure** of research objectives, methods, and sponsorship.
- Relationships should be based on **trust, dialogue and mutual benefit.**
- The **rights of indigenous and local communities** to **own, use, and control lands, territories and resources** should be respected.
- The **rights of indigenous and local communities** to **maintain, control, protect, and develop their cultural heritage**, including **TK associated to biodiversity**, should be respected.
- **Knowledge about biodiversity** that arises from access to a genetic resource should be shared in a manner that **supports and enhances conservation**.
- Harvesting or collecting wild genetic resources should not occur at **rates** or **volumes which are unsustainable.**

SESSION 17

NEGOTIATION

Duration 1h
Structure Activity
Instructor Roger Chennells
Objective
- To understand the general principles of negotiation.

Key Reference
- Negotiation (Wikipedia 2012) Available at: http://en.wikipedia.org/wiki/Negotiation

NEGOTIATION

Definition

Negotiation is a dialogue between two or more people or parties: a problem solving process in which they voluntarily discuss their differences and attempt to reach a joint decision on their common concerns. Negotiation takes place in every sphere of life and is a process whereby each party tries to secure an advantage for themselves by its end.

The negotiation ***process*** refers to ***how*** the parties negotiate. The context, the manner, the parties, the tactics used, the sequences and stages leading towards an agreement.

The ***substance*** of the negotiation refers to ***what*** the parties negotiate over. This may include the agenda, issues, legal disputes, options, and the actual agreement reached.

HOW TO NEGOTIATE

A number of factors interplay during the process of negotiation, which includes the context, the relationships between parties, and attitudes towards the subject matter of the negotiations. Training of individuals contributes strongly towards more successful and sustainable outcomes.

i) **Negotiation skills** are essential, and can be learned/improved.

ii) **Negotiation tactics** are part of an overall strategy. Relationship issues, good and bad faith bargaining, seeing the opponent as an 'adversary' or a 'partner' are included.

iii) **Negotiation styles** differ between individuals, and are often used interchangeably as the situation demands.

Five distinct **negotiating styles** are distinguishable as being used during a negotiation. Whether or not the style used is appropriate under the circumstances is at the very essence of negotiation skills training.

1. Accommodating

Individuals who enjoy solving the other party's problems and preserving personal relationships. Accommodators are sensitive to the emotional states, body language and verbal signals of the other parties. They can however feel that they are taken advantage of in situations where the other party ignores the relationship.

2. Avoiding

Individuals who do not like to negotiate and don't do it unless it is warranted. When negotiating, avoiders tend to defer and dodge the confrontational aspects of negotiating. They may be perceived as tactful and diplomatic.

3. Collaborating

Individuals who enjoy negotiation that involve solving tough problems in creative ways. Collaborators are good at using negotiations to understand the concerns and interests of other parties. They can, however, create problems by transforming simple situations into more complex ones.

4. Competing

Individuals who enjoy negotiations because they present an opportunity to win something. Competitive negotiators have strong instincts for all aspects of negotiating and are often strategic. Because their style can dominate the bargaining process, competitive negotiators often neglect the importance of relationships.

5. Compromising

Individuals who are eager to close the deal by doing what is fair and equal for all parties involved in the negotiation. Compromisers can be useful when there is limited time to complete the deal, however they often can rush the process and make concessions too quickly.

PARTIES TO NEGOTIATION

Negotiation can be between two or more parties. Some parties can join in to the discussions, others (sections of a community) can join together to form one party at different stages of the process. There are also **primary parties**, i.e. those who are central to the issue, and **subsidiary** or **support parties**, for example, NGOs or other government agents.

In ABS situations there are thus many possible parties or role-players, at different stages of the entire process. However we can distinguish between **two primary parties to negotiations**:

The Accessing Party

This will be any person or group (foreigner, company, university, research agency) who intends to obtain access to biological resources or knowledge associated in a provider country for whatever purpose (research, for bio-survey, for commercial assessment/utilisation) and is required to obtain prior approval from the National Competent Authority.

The Providing Party

This is the contracting party to the CBD that provides access to resources and knowledge to users (accessing parties). The providing party may include as a separate party, the indigenous or local community that has rights to the resources. Other parties might include the state, research institutions or other role-players involved in the process.

THE TWO BASIC APPROACHES TO NEGOTIATION

The two primary approaches to negotiation can be described as:

- Positional bargaining, and
- Interest-based bargaining.

Positional bargaining (aka Distributional negotiation)

This approach has a pre-determined preferred outcome. The opponent often has the totally opposite outcome in mind. Unless compromise takes place, the positions remain the same and deadlock ensues. Parties assume that the 'pie' is fixed, and the opponent is seen as an 'adversary' for a share of this pie.

Interest-based bargaining (aka Integrational negotiation)

This approach focuses upon the actual interests of each party: the issues and forces and desires that drive them. This approach attempts to secure the interests of the parties, which results in a change to their original positions. Parties attempt to expand the available 'pie', and see the opponent as a potential 'partner'.

Often a third party - as a facilitator or mediator, is used in order to facilitate good interest-based bargaining.

ENHANCERS AND BARRIERS TO SUCCESSFUL NEGOTIATIONS

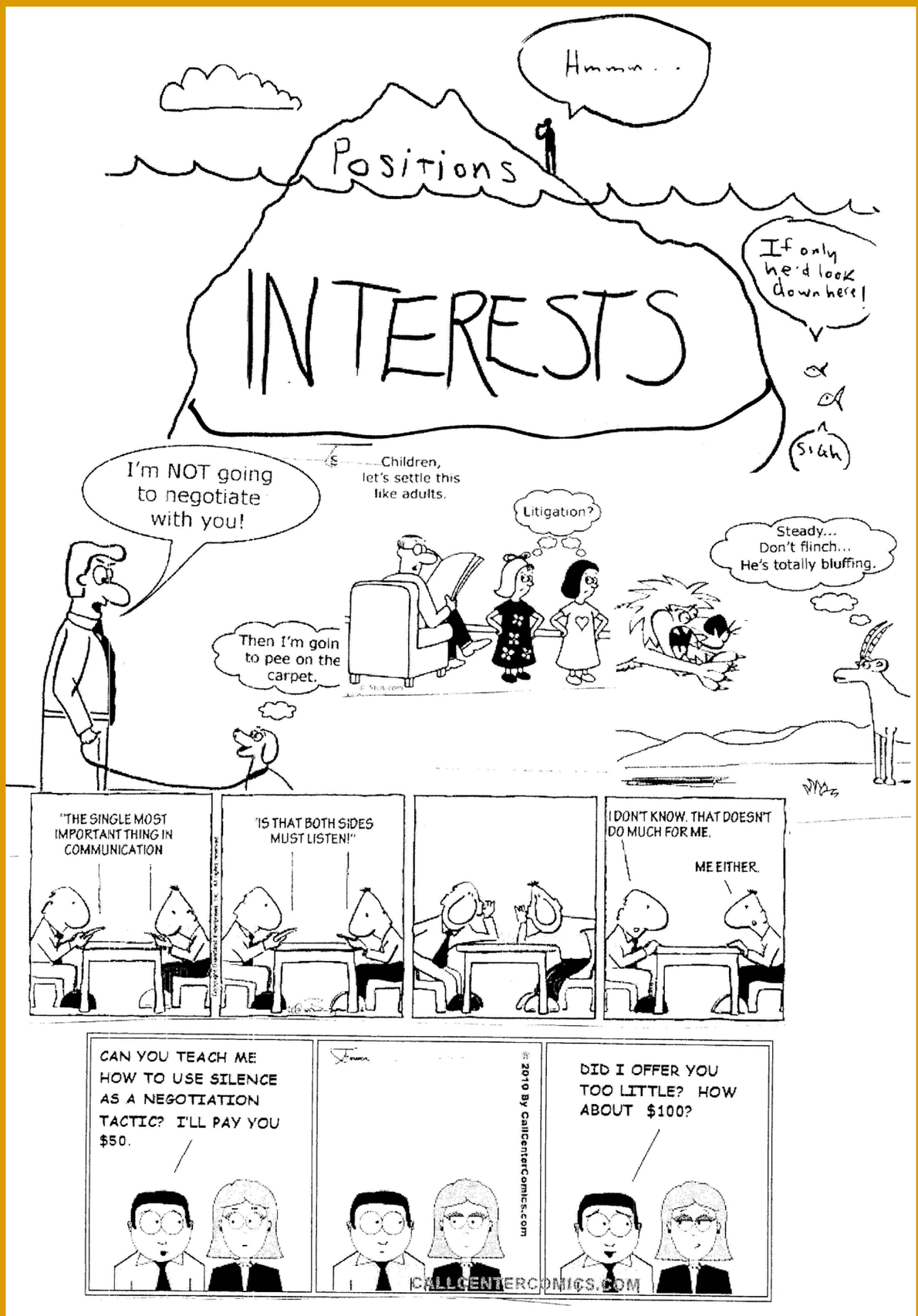
Selected preconditions for a successful negotiation:

- Identifiable parties willing to engage
- Interdependence
- Readiness to negotiate
- Influence or leverage is available
- Agreement on certain issues and a vested interest in the outcome
- Willingness to settle
- A sense of deadline or urgency
- Willingness to compromise
- Resources to negotiate
- An agreement must be achievable and implementable

Barriers to a successful negotiation include the following:

- Die-hard bargainers
- Lack of trust
- Informational vacuums
- Structural impediments
- Spoilers
- Cultural differences
- Gender differences
- Communication difficulties

(Summary by Roger Chennells, extracted from http://en.wikipedia.org/wiki/Negotiation*)*


Hmmm. . .
Positions
INTERESTS
If only he'd look down here!
Sigh
I'm NOT going to negotiate with you!
Children, let's settle this like adults.
Litigation?
Steady... Don't flinch... He's totally bluffing.
Then I'm goin to pee on the carpet.
"THE SINGLE MOST IMPORTANT THING IN COMMUNICATION
"IS THAT BOTH SIDES MUST LISTEN!"
I DON'T KNOW. THAT DOESN'T DO MUCH FOR ME.
ME EITHER.
CAN YOU TEACH ME HOW TO USE SILENCE AS A NEGOTIATION TACTIC? I'LL PAY YOU $50.
© 2010 By CallCenterComics.com
DID I OFFER YOU TOO LITTLE? HOW ABOUT $100?
CALLCENTERCOMICS.COM

SESSION 18

THE WAY FORWARD

Duration 30min
Structure Group discussion; Activity – plotting the way forward individually
Instructors Core team
Objectives

- To prepare a future action plan for the implementation of ABS.
- To identify key areas of consideration for moving forward.

ACTION PLAN COMPONENTS:

KEY AREAS OF CONSIDERATION FOR THE WAY FORWARD

Consider the following questions when plotting the way forward. (Please fill in your responses on the sheet provided.)

- After the course, what will you do differently?
- What new things will you take up?
- Have any priorities changed? If so, in what way?
- How will you deal with new priorities identified?
- What will you have achieved in 6 months?
- What will you do as your first step towards achieving this?

SESSION 19

COURSE EVALUATION

Duration 1h
Structure Overall evaluation of course; Certificate ceremony
Convenors Core team
Objectives

- To evaluate the course.
- To record suggestions for future modules or courses.
- To hand successful candidates their certificates.
- To formally close the training course.

Participants will be asked to complete an evaluation of the day's sessions, as well as other aspects of the course such as the accommodation, food, conference venue and facilities. The information gained from the evaluation is most important as it will be used to improve the quality of future training programmes.

Besides the in-course evaluation, participants will be contacted approximately 6 months after the course via a follow-up evaluation process in order to gauge the usefulness of the course content in their work environment. The follow-up evaluation process will consist of a few simple questions via email; participants' cooperation in this regard will be much appreciated.

Candidates who have attended all of the sessions and completed all of the multiple choice tests will be awarded a certificate at the closure of the training programme.

Thank you all very much for your participation and best of luck with your future ABS endeavours!

The Core Team

ABS TEAM AND CONTRIBUTORS

ROGER CHENNELLS has practiced as a human rights attorney since 1980, specialising in labour, land, environmental and human rights law, with an overall emphasis on public interest law affecting rural communities. Prior to 1990, his practice represented and protected those that opposed the apartheid state, largely by launching cases against the police and the state. During this period he became an active practitioner of alternative dispute resolution as a means of achieving fair outcomes to legal problems. After the overthrow of apartheid he began to represent indigenous peoples, assisting the San peoples with the formation of a regional organisation that would defend their culture, heritage and intellectual property rights. In 2001 he assisted the San in first opposing, and thereafter negotiating an agreement with the CSIR who had patented the appetite suppressant properties of the Hoodia succulent plant. This benefit-sharing agreement, which acknowledged the traditional knowledge of the San, became an important milestone in the progress of indigenous peoples to secure benefit-sharing rights as set out in the CBD, and has led to further similar ABS agreements. In 2014 Roger obtained his PhD from the University of Central Lancashire. In his free time he likes to surf in the sea, and to walk in nature.

ANDREAS DREWS is a biologist by training and holds a PhD in natural sciences. He has served as a consultant on biological pest control and natural resource management to several programmes of Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ). Since 1995 he has advised the GTZ (now known as GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) Programme 'Implementing the Biodiversity Convention' on ABS and traditional knowledge – as such conceptualising and supporting national projects and training courses on the development and implementation of ABS regulations in Asia and Africa. Since 2000 he has acted as advisor to the German delegation from the Federal Ministry for Economic Cooperation and Development on the ABS process under the CBD. He is founder and manager of the Dutch-German ABS Capacity Development Initiative for Africa, which was established in 2005 to support African countries in developing and implementing ABS regulations as well as fostering exchange among nations and facilitating joint position building of African negotiators with the view that substantive information is a prerequisite for fair compromise. He guided the transformation of this Initiative into the ABS Capacity Development Initiative, a multi-donor platform which provides long-term funding for ABS capacity development not only in Africa but also in the Caribbean and Pacific regions. With the adoption of the Nagoya Protocol on ABS in 2010, the Initiative has set its focus on supporting ABS implementation at the national level.

FAHDELAH HARTLEY has been a member of the team based at the University of Cape Town for the past 12 years in her capacity as Senior Secretary. In addition to her responsibilities as secretary to the research unit, she has assisted on various courses offered by the Environmental Evaluation Unit, including the LEAD Course, Environmental Management Short Course, the Marine Protected Areas Training Course and the ABS Training Courses held in 2010, 2012 and 2013. Her involvement on these courses include liaising with delegates, making travel and accommodation arrangements, overseeing catering and venue logistics, and general administrative assistance. For the 2014 course, as well as all of the aforementioned tasks, she was also responsible for the design and layout of the course manual. Fahdelah is a wife and mother who enjoys cooking, hiking and yoga.

GUS LE BRETON is a social entrepreneur with a 25 year track record in biodiversity-based business across southern Africa. He is currently the CEO of the natural cosmetics company, Katavi Botanicals, using biodiversity-derived ingredients in an anti-aging skin care range. He also runs an innovation hub incubating new business opportunities in Zimbabwe around underutilised indigenous plant species (Bio-Innovation Zimbabwe), and a baobab company (B'Ayoba) that buys and processes baobab fruit products from rural producers. Prior to establishing Katavi, Gus was the founding CEO of the natural products trade association PhytoTrade Africa. Gus has Masters degrees from the universities of Cambridge in the UK and Yale in the USA. He has also served stints as President of the Board of the Geneva-based Union for Ethical BioTrade and chair of the Zimbabwe Working Group on Natural Products. Beyond his professional life, Gus has a diverse array of interests. In addition to running his own music festival (Miombo Magic), he is a performing musician, an enthusiastic amateur pilot and a veteran world traveller. He and his family have recently returned from a six month break travelling from Alaska to Tierra del Fuego, and are busy planning their next trip. Many of his happiest moments have arisen while fixing broken Land Rovers in the African bush.

PETER MUNYI is a lawyer and researcher. He has published widely on the integration of intellectual property rights with environment, agriculture and health. He was an advisor to the African Group in the negotiations leading to the adoption of the Nagoya Protocol. Peter holds degrees in law from Stockholm University, Sweden and Moi University, Kenya. He is currently pursuing his research interests at Wageningen University, The Netherlands. Peter has been closely involved in the ABS Course series since the first time it was held - in 2010 in Cape Town. As a member of the core team, Peter brings a wealth of experience to the course, especially in relation to the legal processes that accompany ABS. When Peter is not thinking ABS, he enjoys watching sports... from the armchair.

JACI VAN NIEKERK holds a BSc degree in Zoology from the University of Stellenbosch and an MPhil in Environmental Management from the University of Cape Town. She worked and travelled extensively throughout Europe and Asia upon completion of her Bachelor's degree, returning to South Africa to undertake her Masters dissertation which examined the contribution of the international trade in an endemic medicinal plant – Pelargonium sidoides, to rural livelihoods in South Africa and Lesotho. She has been employed at the University of Cape Town since 2009, conducting research into ABS, the commercial use of southern African biodiversity, and investigating ways in which to protect, promote and enhance the rights of small-scale farmers. She has been closely involved in the preparations and execution of all the ABS training courses held since 2010. In her free time she likes to read, make mosaics, try her hand at growing vegetables, and spend time with her three rescued 'fur kids'.

RACHEL WYNBERG is an academic, activist and policy adviser with a special interest in biodiversity use and benefit sharing, community rights, social justice and environmental governance. She holds a South African Research Chair on Social and Environmental Dimensions of the Bio-economy at the University of Cape Town, where she is associate professor in the Department of Environmental and Geographical Science. Over the past twenty years Rachel has advised governments, civil society organisations and international agencies on biodiversity issues and continues to be actively involved with NGOs in the region, serving on the Boards of Biowatch South Africa, Environmental Monitoring Group, and PhytoTrade Africa. She is also a member of the Expert Committee for the UK government's Darwin Initiative, one of the largest and most significant global funders of biodiversity projects. Rachel has directed the ABS training course since its inception in 2010, and the Harare course is the fifth she has led. Rachel lives in a cottage on the mountainside of St James, Cape Town with her partner Carl, two children, Art and Mia, two cats and two dogs. In her spare time she enjoys swimming in the sea, walking on the mountain, doing yoga and reading books that have nothing to do with environmental issues.

GLOSSARY OF TERMS

ACCESS The term 'access to genetic resources' is not defined in the CBD or Nagoya Protocol, therefore, definitions vary according to national legislation and practice. **Access** may consist of various activities - including entering a location or place where genetic resources are found, surveying activities or acquiring genetic resources for various purposes.

AGROBIODIVERSITY comprises the diversity of genetic resources (varieties, breeds) and species used for food, fodder, fibre, fuel and pharmaceuticals and also includes the diversity of non-harvested species that support production (soil microorganisms, predators, pollinators) and those in the wider environment that support agro-ecosystems (agricultural, pastoral, forest, and aquatic) as well as the diversity of the agro-ecosystems themselves (FAO 2007).

BENEFIT SHARING Defined by Wynberg and Hauck (2014) as 'the division and distribution of monetary and non-monetary benefits in a way that has equitable outcomes and is procedurally fair', **benefit sharing** originally referred to forms of compensation for the use of genetic resources. The term is becoming more widely used, however, and can also apply to measures taken to establish better equity in other sectors such as conservation, mining, and water management.

BIODIVERSITY ACTS National statutory legal instruments developed to implement CBD obligations, including regulation of access and benefit sharing from genetic and biological resources and associated TK.

BIOLOGICAL DIVERSITY Variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems as well as the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems (CBD 1993).

BIOLOGICAL RESOURCES These include genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity (CBD 1993).

BIOPIRACY This is a very elastic term that is used to describe the way in which corporations or researchers misappropriate genetic resources or TK through the patent system. It can also refer to the unauthorised collection for commercial ends of genetic resources or TK. **Biopiracy** is focused on inequities in the distribution of benefits from biodiversity-based trade, and the 'free-riding' of companies on the genetic resources and TK of developing countries.

BIOPROSPECTING Biodiversity prospecting, often shortened to '**bioprospecting**', is the exploration of biodiversity for commercially valuable genetic resources and biochemicals. It describes a search for resources, and the collection of resources with an intention to commercialise them. It can also include the collection from indigenous and local communities of TK relating to the use of these resources.

BIOSAFETY Describes efforts to reduce and eliminate the potential risks resulting from modern biotechnology and its products. The **Biosafety Protocol** (see below), prescribes that this should be based on the precautionary approach whereby the lack of full scientific certainty should not be used as an excuse to postpone action where there is a threat of serious or irreversible damage.

BIOSAFETY PROTOCOL The Cartagena Protocol on **Biosafety** is an international agreement which supplements the CBD. The objective of the protocol is to contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity.

BIOTECHNOLOGY This discipline is described as any technological application that uses biological systems, living organisms or derivatives thereof to make or modify products, or process them for specific use (CBD 1993). Traditional **biotechnology** includes ancient techniques such as crop selection, selective breeding of livestock and beer brewing. More recent developments in **biotechnology** include the development of vaccines and antibiotics or the use of tissue culture to breed disease-free plants. '**Modern biotechnology**' refers to biotechnological techniques for the manipulation of genetic material and the fusion of cells beyond normal breeding barriers. **Genetic engineering** – which involves the insertion or deletion of genes - is a form of **modern biotechnology**.

BIOTRADE This term is used to describe any activity relating to the commercial collection, processing and sale of products derived from biodiversity. It is often linked to criteria of environmental, social and economic sustainability.

BONN GUIDELINES These voluntary guidelines were adopted at the 6th Conference of the Parties to the CBD in 2002; and aim to clarify provisions on ABS contained in the CBD. The **Bonn Guidelines** provide guidance for drafting national legislation and for negotiating ABS agreements in the absence of national legislation.

CENTRE OF ORIGIN A geographical area where plants, animals or microbial species, either domesticated or wild, first developed their distinctive properties and characteristics.

CERTIFICATE OF ORIGIN/SOURCE/ LEGAL PROVENANCE A tool proposed to address the inadequacy of national ABS legislation and enhance the implementation of Articles 8(j) and 15 of the CBD. The rationale of such a certificate is to: require disclosure of source, origin and other information; identify countries, communities and localities; ensure legal certainty; facilitate benefit sharing; enhance and facilitate the conservation and sustainable use of biological resources; and monitor and facilitate access to genetic resources and scientific research.

COMMUNITY A community (or **local community**) refers to a group of people with a long-standing social organisation which binds them together, often within a defined geographical area.

COMMUNITY BASED NATURAL RESOURCE MANAGEMENT (CBNRM) This refers to a form of natural resource management in which local communities play a central role. In practice, **CBNRM** presents ways in which the rights and responsibilities related to natural resources can be shared with local communities. **CBNRM** varies widely from relatively low community involvement to total devolution of rights over land and resources from the state to communities. In between these extremes lie many possibilities for joint management of resources. The goals of **CBNRM** are manifold - **CBNRM** aims to reduce poverty and conserve natural resources whilst promoting good governance and decentralisation (Danida 2007).

COMMUNITY BIODIVERSITY REGISTERS These registers have, to date, referred broadly to the processes by which communities seek to protect resources and associated knowledge through some method of documentation. Although documentation is not necessarily a contemporary phenomenon per se (many societies have historically documented their knowledge in various ways), **community registers** have more recently arisen out of community concerns for diminishing biological and cultural diversity and the increasing prevalence of bioprospecting activities.

COMPETENT AUTHORITIES To facilitate access and benefit sharing from genetic resources, the Bonn Guidelines introduced the term '**competent authority**', which refers to agencies or institutions designated by national legislation as competent to facilitate and negotiate the ABS process and grant access (CBD 2002).

CONFERENCE OF THE PARTIES (COP) The governing body of the CBD, the COP, advances implementation of the convention through the decisions it takes at its periodic meetings. The 12th COP to the CBD was held in Pyeongchang, South Korea in October 2014.

CONVENTION ON BIOLOGICAL DIVERSITY (CBD) An international treaty signed in Rio de Janeiro, 1992, at the United Nations Conference on Environment and Development. The **CBD** guarantees individual states sovereign rights over their biodiversity resources and the pattern of their utilisation and comprises three main objectives: the conservation of biological diversity, sustainable use of its components and the fair and equitable sharing of the benefits arising from the use of genetic resources. Currently the number of parties to the Convention totals 195.

COUNTRY OF ORIGIN The country which possesses genetic resources under in situ conditions (CBD 1993).

CULTIVAR A variety of plant which has originated and persisted under cultivation or was specifically bred for the purpose of cultivation.

CULTURAL DIVERSITY Culture takes diverse forms across time and space. This diversity is embodied in the uniqueness and plurality of the identities of groups and societies making up humankind. As a source of exchange, innovation and creativity, **cultural diversity** is as necessary for humankind as biodiversity is for nature. In this sense, it is the common heritage of humanity and should be recognised and affirmed for the benefit of present and future generations (UNESCO 2006).

CUSTOMARY LAW This type of law refers to the rules and norms of conduct which apply to an indigenous group or other local community. These rules are usually unwritten and are often distinct from the dominant legal system within which the community finds itself (Laird and Wynberg 2003).

DERIVATIVES A naturally occurring biochemical compound resulting from the genetic expression or metabolism of biological or genetic resources, even if it does not contain functional units of heredity (Nagoya Protocol 2010).

DESIGNATED AUTHORITY The authority designated by the competent authority to monitor and enforce policy and legal instruments with respect to access and benefit sharing from genetic resources.

DISCLOSURE OF ORIGIN A proposal that intellectual property laws be modified, possibly through Article 29 of TRIPS, to include a strong disclosure mechanism, which would require all applicants for IPRs to disclose the country of origin of genetic resources, the source of relevant TK and positive proof of benefit sharing and PIC.

DOMESTICATED OR CULTIVATED SPECIES Animal or plant species in which the evolutionary processes have been influenced by humans to meet their needs. Some species which have been specially selected by humans to fulfil their nutritional needs are pulses, wheat, maize, cattle and sheep.

ECOSYSTEM A dynamic complex of plant, animal and microorganism communities and their non-living environment - interacting as a functional unit.

EX-SITU CONSERVATION The conservation of components of biological diversity outside their natural habitats, for example in gene banks (CBD 1993).

FAIR TRADE Through the global trading system of **fair trade**, small-scale producers of foodstuffs such as coffee or non-food items such as cotton, are offered improved terms of trade. This also applies to larger producers who subscribe to **fair trade** criteria. **Fair trade** assures producers of prices which cover sustainable production as well as an additional sum – the **fair trade premium** - which is used to uplift the social, economic and environmental conditions of workers and farmers (FLO 2009).

FAIRTRADE LABELLING ORGANIZATION INTERNATIONAL (FLO) This organisation is responsible for fair trade labelling internationally. A key role of the **FLO** is the development of the Fairtrade Standards which apply both to fair trade producers and those involved in marketing fair trade products. The **FLO** offers support to producers by providing guidance on obtaining certification and assistance with developing market opportunities (FLO 2009).

FAIRWILD STANDARD This standard originated in 2008 when the ISSC-MAP (see below) merged with the 'fair trade' standard of the FairWild Foundation. The FairWild Foundation supports the harvest and use of wild-collected natural ingredients in a sustainable manner and promotes a fair deal for those involved in the supply chain. The **FairWild Standard** provides an international system for assessing the ecological, social and economic impacts of industries based on the harvesting of wild material.

FARMERS' RIGHTS The customary rights of farmers to save, use, exchange and sell farm-saved seed and propagating material, their rights to be recognised, rewarded and supported for their contribution to the global pool of genetic resources as well as to the development of commercial varieties of plants, and to participate in decision making on issues related to crop genetic resources, are known as **Farmers' Rights** (The Farmers' Rights Project 2009).

GENETIC DIVERSITY The variety of genes within a particular species, variety or breed.

GENETIC ENGINEERING See '**biotechnology**'.

GENETIC MATERIAL The CBD defines **genetic material** as any material of plant, animal, microbial or other origin, containing functional units of heredity. These may include a whole organism, parts of an organism or biochemical extracts from tissue samples that contain DNA, or in some cases RNA.

GENETIC RESOURCES All genetic materials of actual or potential value (CBD 1993); the value need not be commercial or monetary, but may be scientific or academic in nature.

GENETICALLY MODIFIED ORGANISM (GMO) A microorganism, plant, or animal whose genetic characteristics have been modified by inserting a modified gene or a gene from another variety or species. **GMOs** may include microorganisms designed for use as biopesticides, or seeds that have been altered genetically to give a plant better disease resistance or growth (IUCN 2004).

GEOGRAPHIC INDICATIONS Goods that have a specific geographical origin and possess qualities, reputation or characteristics that are essentially attributable to that place of origin, are labelled as such by **geographic indications**. For example, agricultural products often have distinguishing qualities that derive from their place of production and are influenced by specific local factors, such as climate and soil. **Geographical indications** may be used for a wide variety of products, whether natural, agricultural or manufactured.

HABITAT A place where an organism or population naturally occurs (CBD 1993); this definition excludes organisms which have been artificially introduced.

INDIGENOUS PEOPLES Peoples whose social, cultural and economic conditions distinguish them from other sections of the national community; and whose status is regulated wholly or partially by their own customs or traditions, or by special laws or regulations (ILO 2003). This term may also describe an ethnic group of people who live in a geographic region with which they have the earliest known historical connection, alongside more recent immigrants who have populated the region and may be greater in number (Davis and Harrison 2008).

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 (CBD 1993).

INTANGIBLE COMPONENT Any knowledge, innovation, or individual or collective practice of actual or potential value associated with genetic resources, their derivatives, or the biological resource containing them, whether or not protected by an intellectual property system.

INTELLECTUAL PROPERTY Refers to creations of the mind: inventions, literary and artistic work, symbols, names, images and designs used in commerce. According to the UNDRIP, indigenous peoples also hold **intellectual property** over their cultural heritage, TK and traditional cultural expressions.

INTELLECTUAL PROPERTY RIGHTS (IPRs) These rights offer legal protection to persons over their creative endeavours. An **IPR** usually gives the creator an exclusive right over the use of his/her creation or discovery for a certain period of time, and grants the creator the right to earn royalties from licencing. There are two categories of **IPRs: industrial property**, which includes inventions (patents), trademarks, industrial designs and geographic indications of source; and **copyright**, which includes literary and artistic work such as novels, films, musical work, drawings, photographs, and architectural designs.

INTERNATIONAL STANDARD FOR SUSTAINABLE WILD COLLECTION OF MEDICINAL AND AROMATIC PLANTS (ISSC-MAP) The **ISSC-MAP** was prepared by the Medicinal Plant Specialist Group of the Species Survival Commission, IUCN. The **ISSC-MAP** acts as a guide to those involved in harvesting, managing, trading, manufacturing and selling wild-collected medicinal and aromatic plant (MAP) resources. Its purpose is to foster understanding and compliance with the conditions under which sustainable collection of MAP species can take place. The **ISSC-MAP** acts as a bridge between broad conservation guidelines and management plans developed for specific local conditions.

INTERNATIONAL TREATY ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE (ITPGRFA) Also known as the 'Plant Treaty', **ITPGRFA** is a global treaty adopted by the 31st session of the FAO in November 2001 and came into force on 29 June 2004. It aims at conservation and sustainable use of plant genetic resources for food and agriculture and the fair and equitable sharing of benefits arising out of their use, in harmony with the CBD. Article 12 of the Treaty specifies that an SMTA (Standard Material Transfer Agreement) should accompany facilitated access. The SMTA assists with the transfer of materials by simplifying the negotiation process, reducing transaction costs and shortening order-to-delivery time (ITPGRFA 2009).

LANDRACE A domesticated crop cultivar or animal breed that has been genetically improved by traditional agriculturalists or farmers, but has not been influenced by modern breeding practices; also a cultivar that was grown by ancient farmers and their successors.

LOCAL KNOWLEDGE see '***TRADITIONAL KNOWLEDGE***'.

MATERIAL TRANSFER AGREEMENT (MTA) A legal agreement between the owner of genetic material and the recipient of the material. **MTAs** are contracts which are used for the transfer of genetic materials and knowledge and which contain the terms and conditions on which the material is transferred.

MODERN BIOTECHNOLOGY See 'biotechnology'.

MUTUALLY AGREED TERMS (MAT) Refers to the terms and conditions agreed by contracting parties at the time of entering into a contract. There are a number of benefits to be gained from establishing **MAT**. For example, agreeing to certain **mutually agreed terms** initially may facilitate PIC from the competent authority; and collecting companies may also be ensured – via **MAT**, that the material was obtained lawfully (ten Kate and Laird 1999).***PATENT*** A form of intellectual property protection available for inventions, whether products or processes, that are new, involve an inventive step, and are useful or capable of industrial application. A **patent** is a legal grant to an inventor allowing the right to exclude others without license from making, using, exercising and marketing his/her invention within a geographic territory for a stipulated duration in lieu of disclosing the invention in a **patent** specification.

PLANT BREEDERS' RIGHTS (PBR) Also known as ***PLANT VARIETY RIGHTS (PVR)*** or ***PLANT VARIETY PROTECTION (PVP)***, PBRs are rights granted to the breeder of a new variety of plant that gives him/her exclusive control over the propagating material (including seed, cuttings, divisions, tissue culture) and harvested material (cut flowers, fruit, foliage) of a new variety for a number of years. With these rights, the breeder can choose to become the exclusive marketer of the variety, or to license the variety to others. In order to qualify for these exclusive rights, a variety must be new, distinct, uniform and stable. See also **UPOV**.

PRIOR ART The existing knowledge base before an invention was discovered, or before an invention was disclosed by filing a patent application. In order to protect their TK from perceived biopiracy, some communities have created TK databases to evidence their TK as **prior art.**

PIC Although not defined within the CBD, authors have commonly identified the key elements of **PIC** as: (a) **prior**: before access to knowledge or genetic resources takes place; (b) **informed**: based on truthful disclosure of information about the use that will be made of the knowledge or genetic resources that is adequate to understand the implications; and (c) **consent**: the explicit consent of the government and/or stakeholders or knowledge or rights holders. Thus, **PIC** is an approval in advance for the use of genetic resources and/or any associated TK based on adequate information disclosure.

PROPERTY RIGHTS Refers to the rights to own, control and alienate property within the system of property law established by the state or customary law. **Property rights** may be over material or tangible property such as land and crops, or may also be rights over intangible property, including knowledge, information, or innovations such as patent rights or plant breeder's rights.

PROTECTED AREA An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity and of natural and associated cultural resources, managed through legal or other effective means.

PROVIDER COUNTRY 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.

PUBLIC DOMAIN The information and knowledge already available in published or other forms; the realm of publications, inventions and processes that are not protected by copyright or patents.

SOVEREIGN RIGHTS Rights which appertain to independent sovereign states to legislate, manage, exploit and control access to their natural resources; they include the right to determine the property regimes applicable to those resources, what rights of ownership can be entertained, and how ownership is established.

SOVEREIGNTY The power of the state to independently regulate its own internal and external affairs. **Sovereignty** is not ownership - it is the power to regulate ownership.

SPECIES DIVERSITY Refers to the variety of species.

SPECIES A group of organisms capable of interbreeding freely with each other, but not with members of other **species**. A group of individuals, animals, or plants that is morphologically, physiologically or biochemically distinct from other groups in some characteristics.

SUI GENERIS A Latin phrase, often used for describing a type of legislation, meaning '**of its own kind**'.

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.

TRADITIONAL KNOWLEDGE Refers to the knowledge, innovations and practices of indigenous and local communities around the world; developed from experience gained over the centuries and adapted to the local culture and environment. **Traditional knowledge** is transmitted orally from generation to generation, and tends to be collectively owned. It takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language and agricultural practices, including the development of plant species and animal breeds (CBD 2007).

TRADE RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS (TRIPS) The 1995 TRIPS Agreement is the main international agreement on IPRs. Administered by the World Trade Organization (WTO), it seeks to harmonise IPRs and establish enforceable global standards of protection for IPRs. There is a fundamental conflict between **TRIPS** and the CBD as IPR systems are widely understood to encourage the appropriation of TK for commercial use, without the fair sharing of benefits with the holders of this knowledge. Some of the WTO's developing country members have called for Article 27(3b) to be amended to include the requirement to produce proof of origin of the biological/genetic resources, while other WTO country members are seeking alternative ways that do not restrict IPRs.

UNION FOR EHTICAL BIOTRADE (UEBT) The motto of the **UEBT**, a non-profit organisation established in 2007, is 'Sourcing with Respect'. The **UEBT** sets out Ethical BioTrade Principles and Criteria to promote the conservation of native biodiversity through sustainable use, and its members are encouraged to respect TK and share benefits fairly along the supply chain. The intention is that by adopting the Ethical BioTrade Principles and Criteria, companies can impact positively on provider countries and communities by contributing to local development and helping to preserve local ecosystems through equitable, long-term relationships.

UPOV This is the French acronym for the **International Convention for the Protection of New Varieties of Plants**. Adopted in 1961 (and subsequently amended), UPOV aims to ensure that the rights of plant breeders are protected adequately. Because of the need for continued access to plant varieties for breeding purposes, a system was developed that was adapted to the needs of plant breeders. Initially, wide exemptions were allowed for breeders and farmers but over time exemptions have become more and more restricted. Today, most **UPOV** member countries are party to either the 1978 Act or the 1991 Act. There are important differences between these Acts, most importantly because **UPOV** 1991 limits the customary rights of farmers to save and reuse farm-saved seeds and is far more costly for farmers. Many developing countries believe that **UPOV** is biased toward the commercial interests of industrial breeders in the North and helps promote genetic uniformity in agriculture.

UTILISATION OF GENETIC RESOURCES This term is defined in the Nagoya Protocol as 'to conduct research and development on the genetic and/or biochemical composition of genetic resources, including through the application of biotechnology as defined in Article 2 of the CBD'.

WORLD INTELLECTUAL PROPERTY ORGANIZATION (WIPO) Established by the **WIPO Convention** in 1967, **WIPO** has a mandate from its member states to promote the protection of intellectual property throughout the world through cooperation among states and in collaboration with other international organisations.

WORLD TRADE ORGANIZATION (WTO) – The world's primary organisation working towards setting the rules of trade between nations; at its heart are the **WTO** agreements negotiated and signed by the majority of the world's trading nations and ratified in their parliaments.

SUPPLEMENTARY RESOURCES

Available on the Accompanying CD

INTERNATIONAL POLICIES AND AGREEMENTS

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- CBD 1993. The Convention on Biological Diversity. Text and Annexes.
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AFRICAN AGREEMENTS

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- OAU 2002. African Convention on the Conservation of Nature and Natural Resources.

NATIONAL LEGISLATION OF SELECTED AFRICAN NATIONS

KENYA

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- The Environmental Management and Coordination Act (1999).
- The Environmental Management and Coordination Act: Regulations on Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing (2006).
- The Forests Act (2005).
- The Wildlife Conservation and Management Act (1976).
- The Wildlife Conservation and Management Amendment Act (1989).

NAMIBIA

- Communal Land Reform Act (2002).
- Environmental Management Act (2007).
- Traditional Authorities Act (2000).

SOUTH AFRICA

- Indigenous Knowledge Systems Policy (2004).
- National Environment Laws Amendment Act (2009).
- National Environmental Management Biodiversity Act (2004).
- National Environmental Management Biodiversity Act: Regulations on Bio-prospecting, Access and Benefit Sharing (2008).
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TANZANIA

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UGANDA

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USEFUL WEBSITES

ORGANISATION	DESCRIPTION AND WEBLINK
ABS Initiative ABS Capacity Development Initiative	A multi-donor initiative which supports the implementation of ABS regulatory frameworks at the national level. http://www.abs-initiative.info/
Bioversity International	An organisation which carries out global research on sustainable agriculture, nutrition, and conservation. http://www.bioversityinternational.org/
BGCI Botanic Gardens Conservation International	The world's largest plant conservation network. The link below allows for the download of a CBD manual for botanical gardens. http://www.bgci.org/resources/cbdmanual
CBD Convention on Biological Diversity	Website of the international treaty with information on its programmes, the Nagoya Protocol, and more. http://www.cbd.int
CGRFA Commission on Genetic Resources for Food and Agriculture	A permanent forum of the FAO where governments discuss and negotiate matters relevant to biodiversity for food and agriculture. http://www.fao.org/nr/cgrfa/en
EPO European Patent Office	Worldwide patent search site. http://www.epo.org/searching/free/espacenet.html
ETC Group Action Group on Erosion, Technology and Concentration	International organisation promoting the conservation and sustainable advancement of cultural and ecological diversity and human rights. http://www.etcgroup.org
FAIRTRADE Fairtrade International	Presents information about Fairtrade products, standards and producers. http://www.fairtrade.net/
FAIRWILD The FairWild Foundation	Contains information on certification, labelling and the FairWild Standard. http://www.fairwild.org/
GRAIN Genetic Resources Action International	An NGO promoting sustainable management and use of agricultural biodiversity. http://www.grain.org/front

IIED International Institute for Environment and Development	An independent non-profit organisation promoting sustainable patterns of world development through collaborative research, policy studies and networking. http://www.iied.org
ISE International Society for Ethnobiology	An international network of ethnobiologists who acknowledge that indigenous peoples, traditional societies, and local communities are critical to the conservation of biocultural diversity. The ISE is committed to understanding the complex relationships between human societies and their environments and recognises that traditional knowledge holders are vital to humankind's success. http://www.ethnobiology.net/
UEBT Union for Ethical BioTrade	The homepage of the UEBT has links to news, events, as well as the Biodiversity Barometer - which gauges awareness of biodiversity. http://www.ethicalbiotrade.org/ The page on ABS has links to introductory videos on ABS and biopiracy, as well as information on benefit sharing. http://www.ethicalbiotrade.org/abs/
UN-REDD PROGRAMME The UN Programme on Reducing Emissions from Deforestation and Forest Degradation	Introduces the UN-REDD Programme, provides links to its newsletter, related resources and publications. http://www.un-redd.org/
USPTO United States Patent and Trademark Office	Searchable registry of issued patents and patent applications. http://www.uspto.gov/patents/process/search/
WIPO Patentscope World Intellectual Property Organization	Search site for international patent applications. http://www.wipo.int/pctdb/en/index.jsp

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Online resources

ABS Management Tool. Available at http://www.sib.admin.ch/en/nagoya-protocol/absmanagement-tool/index.html

Benefit sharing. Available at http://www.nature.nps.gov/benefitssharing/whatis.cfm

Compendium of Selected ABS Laws in Africa. Cameroon, Ethiopia, Kenya, Malawi, South Africa and Uganda. Available at http://www.absinitiative.info/compendium.html

Fact Sheet on the Nagoya Protocol on ABS. Available at http://www.cbd.int/abs

Guide to Intellectual Property Rights. Available at www.iprsonline.org

Handbook of the Convention on Biological Diversity http://www.cbd.int/handbook/

The International Treaty on Plant Genetic Resources for Food and Agriculture. Available at www.planttreaty.org