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THE BUSINESS OF BIOTRADE:

USING BIOLOGICAL RESOURCES SUSTAINABLY AND RESPONSIBLY

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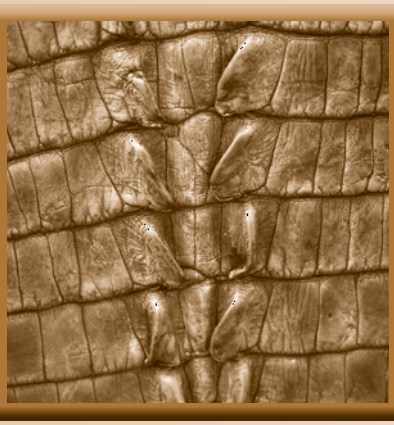

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For further information on UNCTAD's BioTrade Initiative please consult the following website: http://unctad.org/biotrade, or contact: biotrade@unctad.org.

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Contents

Acronyms

ABC	*Associación Boliviana de Conservación* (Bolivian Conservation Association)
ARPA	Amazon Region Protected Area
BACP	Biodiversity Agriculture Commodities Programme
B2B	business-to-business
CBD	Convention on Biological Diversity
CBI	Centre for the Promotion of Imports from developing countries
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoP	Conference of the Parties
CPIB	*Central de Pueblos Indígenas del Beni* (Representative Organization of the Indigenous Peoples of the Beni)
CSD	Commission on Sustainable Development
DFID	Department for International Development (United Kingdom of Great Britain and Northern Ireland)
FTD	fixed-term deposit
EU	European Union
FLO	Fairtrade Labelling Organization International
FOEN	Swiss Federal Office for the Environment
FSC	Forest Stewardship Council
GACP	good agriculture and collection practices
GEF	Global Environmental Facility
GMP	good manufacturing practices
GMO	genetically modified organism
GRAS	Generally Recognized as Safe (United States Food and Drug Administration)
ICS	internal control system
IFC	International Finance Corporation
IFOAM	International Federation of Organic Agricultural Movements
IPBES	Intergovernmental Platform on Biodiversity and Ecosystems
ISEAL	International Social and Environmental Accreditation and Labelling Alliance
IUCN	International Union for Conservation of Nature
MDG	Millennium Development Goal
MEA	multilateral environmental agreement
MNC	multinational corporation
MMA	Brazilian Environmental Ministry
NGO	non-governmental organization
NP	natural product
NTB	non-tariff barrier
NTFP	non-timber forest product
OBIO	National BioTrade Observatory (Colombia)
PNBSE	Sustainable BioTrade Programme in Ecuador
PAPS	Sustainable Production Support Program
PPP	public private partnerships
PQS	pre-qualified supplier
REDD	Reducing Emissions from Deforestation and Forest Degradation
RedLAC	Latin American and Caribbean Network of Environmental Funds
SAN	Sustainable Agriculture Network
SMEs	small and medium-sized enterprise
UEBT	Union for Ethical BioTrade
TCO	*Tierras Comunitarias de Origen* (Original Community Lands)

UNCCD	United Nations Convention to Combat Desertification
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization

Executive summary

BioTrade refers to the collection, production, transformation and commercialization of goods and services derived from native biodiversity (species and ecosystems) under the criteria of environmental, social and economic sustainability. To give a more complete meaning to this concept, the United Nations Conference on Trade and Development (UNCTAD) – together with international partners and practitioners at country level – have defined seven BioTrade Principles. Together, these principles provide an integrated framework for addressing the three objectives of the CBD (Convention on Biological Diversity), as well as other biodiversity-related multilateral environmental agreements (MEAs) in the broader context of sustainable development and responsible business.

The BioTrade Initiative derives its mandate primarily from UNCTAD's Programmes/Substantive Agenda,[4] from trade-related aspects of the CBD, specifically Article 10 (the sustainable use of components of biodiversity) and Article 11 (social and economic incentive measures for conserving biodiversity), as well as from other biodiversity-related MEAs. Specifically, with respect to the CBD, two decisions of CoP9 (ninth session of the Conference of the Parties to the CBD) – Decision IX/6 on incentive measures and Decision IX/26 on promoting business engagement – provide a direct mandate for further work by the UNCTAD BioTrade Initiative including this informational paper. This reinforces former decisions VIII/26 on incentive measures and VIII/17 on private sector engagement.

Regarding Decision IX/6 on incentive measures, the CoP:

> "Invites the BioTrade Initiative … to continue its work on trade promotion for biodiversity-based products which are produced in a sustainable manner and compatible with the three objectives of the Convention… through capacity-building, enhancing market access, promoting enabling environments and engaging relevant public and private actors."

Regarding Decision IX/26 on promoting business engagement, the CoP9 concluded that a "priority area" is to "build and promote the business case for biodiversity." This includes a request to the biodiversity community to:

> "Continue the compilation and dissemination of information on the business case for biodiversity, including experiences generated in the framework of the UNCTAD BioTrade Initiative, through the clearing-house mechanism, the CBD newsletter on business, and mainstream business forums."

It is against this background that UNCTAD drafted this informational paper, which formed the basis of an international workshop on BioTrade incentives measures at the United Nations Office at Geneva, Switzerland on 24 November 2009.

This informational paper explores how the efforts of the BioTrade Initiative provide incentives for business to conserve biodiversity through using biological resources sustainably and responsibly. Through a review and assessment of distinct case studies, it identifies the actual, practical, bottom-up incentives generated by BioTrade partners and practitioners. In turn, the workshop reviewed the framework used in the paper and the assessments of the case studies. It also proposed recommendations for the next steps to support of the implementation of the CBD.

BioTrade incentives framework

The BioTrade Initiative focuses on positive incentive measures – direct or indirect – that are relevant to private actors. From a BioTrade perspective, it is useful to approach incentive measures in two different but inter-related ways:

- the value chain approach; and
- the sustainable livelihoods approach.

By putting both people and value chain actors at the centre, these two approaches provide a strategic framework for classifying incentives that engage private actors in the conservation and sustainable use of biodiversity. In this context, BioTrade incentive measures can be classified as follows:

- **Market incentives:** access to markets and differentiation of products in markets.
- **Social incentives:** enhancement of human capital (i.e. skills, knowledge and abilities) and social capital (i.e. a supportive and cohesive environment that fosters the adoption of sustainable practices throughout a value chain).
- **Financial incentives:** facilitation of access to finance or financial compensation for sustainable practices.
- **Physical incentives:** enhancement of production facilities, access to equipment and transport.
- **Property rights:** access and rights to own, use or manage biodiversity resources that are defined by public measures.
- **Fiscal incentives:** budgetary measures such as taxes and subsidies (these will not be addressed

in this paper because they are governmental measures).

BioTrade case studies

The eight case studies presented here differ greatly, but each one demonstrates that BioTrade activities are generating a variety of practical, focused incentives to encourage the conservation of biodiversity and the sustainable use of biological resources. These cases are:

- Nativa and Cosmetic Valley (Colombia and France);
- PhytoTrade Africa (southern Africa);
- TreeCrops (Malawi);
- Fondo Biocomercio (Colombia);
- BioTrade and *Caiman yacare* (Plurinational State of Bolivia);
- Jambi Kiwa (Ecuador);
- The Union for Ethical BioTrade (International); and
- Funbio (Brazil).

These case studies validate how the UNCTAD BioTrade Initiative and its partners – in supporting trade as a positive incentive measure for biodiversity conservation – are addressing policy environment, supply capacity and market access issues with an intervention strategy that targets a variety of problems at different levels.

1. INTRODUCTION TO BIOTRADE

BioTrade refers to the collection, production, transformation, and commercialization of goods and services derived from native biodiversity (species and ecosystems) under the criteria of environmental, social and economic sustainability.

1.1 BioTrade Principles

To give fuller meaning to this concept, UNCTAD, together with international partners and practitioners at country level, has defined seven BioTrade principles. These principles provide an integrated framework for addressing the three objectives of the CBD within the broader context of sustainable development and responsible business. The BioTrade principles are:

Principle 1 Conservation of biodiversity
Principle 2 Sustainable use of biodiversity
Principle 3 Fair and equitable sharing of benefits derived from the use of biodiversity
Principle 4 Socio-economic sustainability (productive, financial and market management)
Principle 5 Compliance with national and international regulations
Principle 6 Respect for the rights of actors involved in BioTrade activities
Principle 7 Clarity about land tenure, use and access to natural resources and knowledge

These principles are further elaborated through an associated set of BioTrade criteria[5] that have been developed to facilitate private sector engagement in BioTrade.

1.2 The BioTrade Initiative

The BioTrade Initiative was launched by UNCTAD in 1996 to support the implementation of the CBD through the promotion of sustainable and responsible trade in biological resources. Since then, the UNCTAD BioTrade Initiative has established partnerships with a number of national and regional organizations to develop BioTrade programmes in Africa, Asia and Latin America.[6] It has also worked in Europe to facilitate the import of BioTrade products from developing countries.

The BioTrade Initiative and its partners have focused their efforts on trade in specific biodiversity-based goods and services, including:

- Crocodile products – meat and skin from caiman;
- Fish products – paiche (*Arapaima gigas*);
- Flowers and foliage – heliconias and other tropical flowers;
- Handicrafts – furniture, decorative objects, jewellery, garments;
- Natural ingredients and products for cosmetics – essential oils, natural dyes, soaps, creams and skin butters, moisturisers;
- Natural ingredients and products for food – fruit, cereal, grains, tubers, nuts, cocoa, fish products, jams, sweets and snacks, jellies, pulps and juices, spices and sauces, teas and infusions, food supplements;
- Natural ingredients and products for pharmaceuticals – extracts and infusions from medicinal plants, natural medicine capsules;
- Sustainable tourism – ecotourism, nature-based tourism, bird watching; and
- Wildlife for trade – e.g. chameleons, snakes, tortoise, etc.

1.3 The mandate for BioTrade

The BioTrade Initiative derives its mandate primarily from UNCTAD's Programmes/Substantive Agenda[7] and from the trade-related aspects of the CBD, specifically Article 10 on the sustainable use of the components of biodiversity and Article 11 on social and economic incentive measures to conserve biodiversity.

The initiative also responds to the call by the UN Commission on Sustainable Development (CSD) for the creation of "incentive measures at national, regional and international levels to stimulate the conservation and sustainable use of biological diversity and improve the functioning of their markets by enhancing developing countries' capabilities to compete in emerging markets for biological resources."

Moreover, the initiative addresses needs stressed by the UN's Millennium Development Goals (MDGs) and the plan of action of the 2002 World Summit on Sustainable Development (WSSD). These include the need to reconcile the goals of environmental sustainability, including biodiversity loss, with the developmental needs and dependency of millions of the poor on biological resources. The BioTrade Initiative also works towards the objectives of other biodiversity-related conventions such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Ramsar Convention on Wetlands and the

UN Convention to Combat Desertification (UNCCD). With the inclusion of Reducing Emissions from Deforestation and Forest Degradation (REDD) in the Bali Road Map (2007) under climate negotiations, and the possible support to REDD programmes in developing countries, ways to relate BioTrade activities to climate-friendly policies, for example, by strengthening local economic activities in forest buffer zones, should be explored.

Together these conventions provide the multilateral framework for developing and promoting BioTrade.

As regards the CBD Decisions IX/15 and IX/26 (on incentive measures and promoting business engagement respectively), the BioTrade Initiative including this informational paper gains a direct mandate for further work. This mandate fortifies former Decisions VIII/26 on incentive measures and VIII/17 on private sector engagement.

As per Decision IX/6 on incentive measures, the CoP:

> "*Invites* the BioTrade Initiative… to continue its work on trade promotion for biodiversity-based products which are produced in a sustainable manner and compatible with the three objectives of the Convention… through capacity-building, enhancing market access, promoting enabling environments and engaging relevant public and private actors."

With reference to Decision IX/26 on promoting business engagement, the CoP9 concluded that a "priority area" is to "build and promote the business case for biodiversity." This includes a request to the biodiversity community to:

> "Continue the compilation and dissemination of information on the business case for biodiversity, including experiences generated in the framework of the UNCTAD BioTrade Initiative, through the clearing-house mechanism, the CBD newsletter on business, and mainstream business forums."

This informational paper is a contribution to these decisions. It reports on the efforts of the initiative and its partners to work on issues related to incentive measures and business engagement. By way of an example, in May 2006 a round table was organized with representatives of private companies from developing and developed countries interested in bringing products to the market with social and environmental responsibility.[8] In November 2009, a second round table was organized with participants from the private sector, including BioTrade private actors, CBD focal points, the CBD secretariat, as well as other representatives from biodiversity-related MEAs. This workshop created a platform to share experiences, challenges and opportunities for the engagement of the private sector in the conservation and sustainable use of biodiversity.

The paper explores how the efforts of the BioTrade Initiative can provide incentives for business to conserve biodiversity through using biological resources sustainably and responsibly. Through a review and assessment of case studies, this paper identifies the actual practical, bottom-up incentives generated by the BioTrade partners and practitioners.

2. ENGAGING BUSINESS IN CONSERVING BIODIVERSITY

2.1 Underlying causes of biodiversity loss

Biodiversity loss continues today despite the efforts of policy makers, conservation non-governmental organizations (NGOs) and responsible businesses trying to safeguard biodiversity. The main cause of this is the continued lack of information and knowledge about the economic value of biodiversity and the divergence between private and social interests. Benefits from activities that destroy biodiversity are often short term, direct and easily captured by individuals. On the other hand, benefits from activities that conserve biodiversity are often long term, indirect and spread out. Thus the drivers to destroy biodiversity overpower the drivers to conserve it. This fact is magnified by the lack of reliable and straightforward indicators to estimate gains from biodiversity conservation and sustainable use.

Several factors or "failures" explain this divergence between short-term private gain and long-term social gain. To motivate businesses to engage in biodiversity conservation practices, the following failures need to be addressed:

Market failure: a wide range of failures from the lack of markets to imperfections in the structures or the processes surrounding markets, which cause distortions and inefficiencies.[9]

Information failure: decision makers often have "insufficient facts, tools, arguments or support" to make sound decisions to avoid biodiversity loss.[10]

Policy failure (or intervention failure): linked to the concept of perverse incentives that encourage biodiversity harming practices, as well as to insufficient rewards for the adoption of sustainable practices.

Lack of secured property rights: when individuals have no legal rights over the lands on which they live and work, they do not have sufficient incentives to manage these resources in a sustainable manner.

Awareness failure: observed when the physical condition for biodiversity deterioration is already present, but the impacts have not been acknowledged yet.[11]

Social and behavioural factors: lack of political and economic power of some stakeholders such as small-scale producers, women and indigenous people, who are particularly dependent on biodiversity services or affected by biodiversity degradation.[12]

Population growth: additional stresses on ecosystems and species caused by rapid population growth, migration and increased urbanization.

For such failures or underlying causes of biodiversity loss, there is a range of possible policy responses, some of which are of particular relevance to a BioTrade approach. These possible policy responses[13] include the following:

For market failures: address externalities through appropriate economic incentives and regulations; remove market barriers for biodiversity products.

For information failures: invest in the generation of bio-physical, economic and social information on biodiversity, its value and the causes of its loss; engage and inform stakeholders involved directly and indirectly in the conservation and sustainable use of biodiversity.

For awareness failures: invest in the dissemination of information about the impacts of biodiversity depletion.

For policy failures: remove or reform adverse subsidies, including below-cost pricing of resource concessions and free infrastructure provision.

For the lack of secured property rights: establish and clearly define property and land use rights, which allow more stable incomes and long-term planning.

For the lack of political and economic power of some stakeholders: empower and build capacities for groups dependent on biodiversity goods and ecosystem services.

For population growth: strengthen human capital and reduce migration through the creation of economic opportunities and ecological-economic zoning, among others.

With such an array of possible policy responses, there are clear opportunities for engaging business in activities to conserve biodiversity. The challenge is to design the right mix of policy responses to engage and encourage private actors, including suppliers, producers, traders and consumers. As discussed in this informational paper, the BioTrade Initiative focuses on a subset of these possible responses that are practical, direct and bottom-up incentives to conserve biodiversity.

2.2 The case for promoting engagement in non-public actors

For the purpose of this paper, non-public actors are defined as the part of the economy, which is run essentially for profit or are supporting actors who do it. These include companies, business and sector associations, private funds, private foundations, community-based organizations, indigenous people's organizations, and NGOs (e.g. associated with BioTrade.) This array of organizations will be referred to as non-public actors.

Importantly, many of the underlying causes of biodiversity loss can be linked directly or indirectly to the lack of effective engagement of non-public actors. As noted above, it often does not pay for these actors to engage in sustainable practices because of various market, policy and institutional failures. In this respect, businesses suffer from missing markets and a lack of adequate reward for the efforts to adopt sustainable practices.

Biodiversity loss also has a direct impact on businesses closely connected to and sometimes dependent on a sustainable supply of biological resources. Furthermore, a great number of non-public actors who are directly affected by biodiversity loss – e.g. poor people, women and indigenous communities – lack the political and economic power to contribute to biodiversity conservation decision-making.

International and national biodiversity decision-makers are often not aware of the challenges faced by non-public actors. Therefore, incentives for the sustainable use of biodiversity must address the needs, challenges and motivations of these actors across a value chain to promote their engagement.[14] The BioTrade Initiative engages directly with the non-public actors, the business sector in particular, to develop and promote an appropriate set of practical incentive measures to encourage businesses to conserve biodiversity.

3. INCENTIVE MEASURES FOR BIODIVERSITY

The CBD's *Proposals for the Design and Implementation of Incentive Measures*[15] states that an incentive measure should "change institutional and individual behaviour in order to achieve in whole or in part the… objectives of the Convention…" In doing so, incentives address the underlying causes of biodiversity degradation and loss, and motivate stakeholders to engage in more responsible and sustainable practices.

3.1 Incentives and the biodiversity-related conventions

Most biodiversity-related conventions – either directly or indirectly – recognize the important role of incentives in meeting their objectives. This sub-section summarizes the incentives work of some key biodiversity-related conventions, and mentions the crosscutting work of BioTrade in providing incentives for private sector engagement in biodiversity conservation.

3.1.1 CBD and incentive measures

Article 11 of the CBD stresses how important it is for each party to "adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity."

In this respect, CBD COP policy guidance and an international programme of work has been developed to support the implementation of Article 11. The current work on incentive measures focuses on the dissemination of best practices, as highlighted in the CoP Decision IX/6. This decision states the need to enhance the "sharing (of) information on good practices, lessons learned, difficulties encountered and other practical experience on its (CBD's) implementation, as well as assessments, studies, analyses and capacity building."

The UNCTAD BioTrade Initiative is recognized as a partner for the implementation of CBD COP decisions regarding incentive measures (Decisions VIII/26 and IX/6). At the same time, BioTrade has also contributed to related work implemented by other biodiversity-related conventions.

3.1.2 CITES and incentives for non-detrimental trade

In relation to the CoP/ CITES Convention and economic incentives, a technical workshop was held in December 2003 and led to the adoption of Decisions 13.76 and 13.77 in 2004. During CoP14, the importance of the work on incentive measures was reaffirmed and these measures have become a regular discussion topic at CITES CoPs.[16] Decisions 14.42 to 14.47 provide the framework for work on incentives for the implementation of the convention:

- **Decision 14.42:** "Parties that develop incentive measures for the effective implementation of the Convention are encouraged to include relevant details in their biennial reports."
- **Decision 14.43:** "Parties are encouraged to consider the adoption of standard operating procedures to complete the formalities required for trade in CITES-listed species in an efficient manner. Management Authorities are encouraged to liaise with national ministries and agencies responsible for regulation and promotion of exports and imports in their countries to benefit from the expertise and support they offer in this area."
- **Decision 14.44:** "The Parties shall consider practical ways to enhance stakeholder engagement in the implementation of the Convention (e.g. promoting good practices and codes of conduct that facilitate the work of CITES authorities, help to reduce time-frames for the completion of CITES procedures and enhance the role of the private sector in intelligence gathering to identify and prosecute illegal traders)."

Within this context, the UNCTAD BioTrade Initiative is also recognized as a partner "to ensure the conservation of wild species subject to international trade and promote private sector compliance with CITES requirements and national legislation" (Decision 14.46).

3.1.3 Ramsar and incentive measures

Within the Ramsar Convention on Wetlands, the following resolutions and strategic plans address incentives:

- **Resolution VIII.23 (2002) on incentive measures as tools for achieving the wise use of wetlands:** urges parties to develop supportive legal and policy frameworks for the design and the implementation of incentive measures, used as a tool to achieve the conservation and wise use of wetlands.[17]
- **Strategy 1.11 of Ramsar's Strategic Plan for 2009–2015:** "incentive measures that encourage the application of the wise use provisions of the Convention" should be promoted. By 2015, incentive measures should be better designed and

implemented by all parties and both positive and perverse incentives affecting wetlands should be better monitored and assessed.[18]

3.1.4 UNCCD and incentive measures

There is no explicit mention of incentive measures in the text of the UNCCD and limited work has been done to date. For instance, CoP8 Decision VIII/1 in 2007 "invites developing countries to develop an enabling environment for sustainable land management and integrated water management, which includes economic measures, in accordance with international law, and coordination of sectoral policies, consistent with national policies."

Furthermore, the concept of "sustainable land management" which is central to the work programme of the UNCCD is closely aligned to the "ecosystem approach" of the CBD. In this regard, incentive measures may have as an important role to play under the UNCCD as they do under the CBD. BioTrade incentive measures, in particular, can address private sector engagement to manage ecosystems or landscapes sustainably, including, for example, the sustainable wild harvesting of medicinal and aromatic dryland plants.

3.2 Types of incentive measures and BioTrade

Incentive measures can be classified in a number of ways. The CBD has classified them into three basic categories:[19]

- **Direct positive incentive measures** are "economic, legal or institutional measures designed to encourage beneficial activities" for the conservation and sustainable use of biodiversity.
- **Indirect positive incentive measures** "change the relative costs and benefits of specific activities in an indirect way. Trading mechanisms and other institutional arrangements create or improve markets for biological resources, thus encouraging the conservation and sustainable use of biological diversity."
- **Negative incentive measures or disincentives** are "designed to discourage activities that are harmful for biodiversity" such as pollution taxes, logging penalties and trade ban schemes.

The BioTrade Initiative focuses on positive incentive measures – direct or indirect – relevant to private actors. Such measures are often linked to government policies and measures; some of which can be negative such as green taxes and others positive such as the allocation of public funds and clearly defined property rights.

Furthermore, from a BioTrade perspective, it is useful to approach incentive measures in two different but inter-related ways:

- the value chain approach; and
- the sustainable livelihoods approach.

3.2.1 Value chain approach

The term "value chain" refers to coordinated relationships between actors who are involved directly or indirectly in a productive activity with the aim of taking a product or service from its supply source and getting it to the customer. It involves alliances among producers, processors, distributors, traders, regulators and support institutions based on a market demand for their products and services. Actors along a value chain work jointly in the achievement of goals through sharing associated benefits and risks, as well as investing time, energy and resources in realizing these goals.[20]

3.2.2 Sustainable livelihoods approach

"A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living; a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long-term."[21]

Thus, the "sustainable livelihoods approach" puts people and communities at the centre and focuses on enhancing: [22]

- **Human capital:** individual skills, knowledge, ability to labour and good health.
- **Social capital:** "social resources upon which people draw in pursuit of their livelihood objectives", including "networks" and "relationships of trust, reciprocity and exchanges".
- **Financial capital:** "financial resources that people use to achieve their livelihoods" such as savings and credit access.
- **Physical capital:** "basic infrastructure and producer goods needed to support livelihoods".
- **Natural capital:** access to natural resources (e.g. biodiversity, lands, fresh water, clean air).

3.2.3 An incentive measure framework for BioTrade

By putting both people and value chain actors at the centre, these two approaches provide a strategic

framework for classifying incentives that engage private actors in the conservation and sustainable use of biodiversity. In this context, incentive measures from a BioTrade perspective can be classified "(This proposed framework was discussed during an international workshop on 24 November 2009 as below. The definition of each incentive is followed by remarks from the workshop.)"

- **Market incentives:** access to markets and differentiation of products in markets. These incentives will often be linked to social capital for example through business partnerships which improve access to markets.
  Biodiversity branding schemes are recognized as an interesting marketing tool to differentiate environmental and social sustainable biodiversity-based products in markets. However, branding schemes are very numerous which can lead to confusion for consumers. Education of consumers and companies about organic products and fairtrade (FLO – Fairtrade Labelling Organizations International) for instance, is part of the solution to overcome confusion.
- **Social incentives:** enhancement of human (i.e. skills, knowledge and abilities) and social (i.e. a supportive and cohesive environment that fosters the adoption of sustainable practices throughout a value chain) capital.
  The link between social and human capital is unclear and needs further analysis. In order to design sound social incentive measures, the social challenge of success, human nature and the notion of equity need to be taken into account. Furthermore, behaviour is driven by recognition and social measures should therefore address ways to provide recognition. Finally, the enhancement of social capital should focus on increasing interaction between all value chain actors, for example, including the interaction between academic researchers and private companies as well as local authorities. Coordination at local level should also be enhanced in order to avoid duplication.
- **Financial incentives:** facilitation of access to finance or financial compensation for sustainable practices, for instance through cash rewards or compensation for conservation activities, grants and microcredit for private entities adopting sustainable and conservation practices.
  There is a need for credit lines tailored to BioTrade, taking into account the type and size of companies and markets. Furthermore, banks' interest in biodiversity and the CBD needs to be enhanced. Funding for R&D also needs to be addressed. Another challenge observed is the difficulty of measuring the economic value of biodiversity. This also impacts the way banks consider BioTrade businesses. Because of the difficulties of measuring the economic value of biodiversity, it can be hard for BioTrade companies to prove the economic potential of their activities and provide the guarantees demanded by traditional banks accordingly. BioTrade principles could be articulated in a manner to showcase good practices from good non-public actors such as businesses and illustrate good investments. A combination of private and public funds, as well as public private partnerships (PPPs), could assist in biodiversity investment.
- **Physical incentives:** enhancement of production facilities, access to equipment and transport.
  Physical capital can be extended to "e-capital". Physical incentives can then also include the enhancement of internet-based information systems that can, for instance, generate information on markets and species. Furthermore, physical incentives should address ways to allow local value adding. Non-public actors planning and competitiveness can be enhanced through the strengthening of physical capital.
- **Property rights:** access and rights to own, use or manage biodiversity resources are defined by public measures. The study will only address property rights indirectly because of their importance in guaranteeing possible private sector practices in the medium and long term.
  The protection and enforcement of intellectual property rights is necessary for innovation and technical transfer. Moreover, lack of clarity and transparency on land ownership could cause the removal of communities. Therefore the rights of communities to access natural resources need to be recognized. In each case study, there is a need to think about the specificities concerning the underlying property rights on which BioTrade projects are developed. Benefit drives the sustainable use and conservation of biodiversity and it is the ownership of the natural capital that allows the access to those benefits. Consequently, the access to natural capital will motivate actors to adopt sustainable practices.
- **Fiscal incentives:** budgetary measures such as taxes and subsidies will not be addressed in this paper, as they are governmental measures.
  Natural resources may be only marginally profitable

Table 1. BioTrade incentives

Incentive types	BioTrade tools	Incentive targets
Market incentives	• Negotiations with policy makers • Trade fairs and commercial missions • Business to business (B2B) programmes • Development and/or strengthening of clusters for specific biodiversity products and activities	Facilitate access of products in the markets
	• Certification and verification schemes • Appellation of origin • Collective trademarks	Differentiate products in the market resulting in a premium price
Social incentives	• Training and training materials • Guidance • Technical assistance • Capacity building for small and medium-sized enterprises (SMEs) • Sector associations and partnerships • Sector strategies and assessments • Management plans • Exchanges of experience	Enhance human and social capital, with a special focus on the enhancement of skills, knowledge and abilities as well as organizational strengthening and networking
Financial incentives	• BioTrade funds – grants and loans • Microcredit	Facilitate access to finance
Physical incentives	• Improvement of physical equipment and facilities	Enhance production capacities, facilitation of access to equipment and transport

and taxes might be too high. In order to ensure the engagement of private actors in sustainable practices, the optimal profitability needs to be defined. Fiscal incentives include "green economy" measures such as tax breaks on imported equipment and training, preferential tariff schemes for sustainable products and special tax regulations for community-based initiatives.

This framework can be used to classify the specific tools developed by the BioTrade Initiative and its partners, as well as by private actors themselves, that generate incentives for biodiversity conservation and sustainable use.

The primary categories of incentives[23] are summarized in Table 1.

The next section of this paper reviews a series of BioTrade case studies in line with the incentive measures classification mentioned above: market, social, financial and physical. This review is then followed by a more thorough overview of the incentive measures being generated by the UNCTAD BioTrade Initiative and its partners.

4. BIOTRADE CASE STUDIES

This section includes a selection of BioTrade case studies which:

- link with the BioTrade Initiative;
- are committed to fulfil BioTrade principles and criteria;
- exclude genetically modified organisms (GMOs) or introduced species;
- demonstrate best practices from the private sector;
- are designed and/or led by the non-public actors;
- respond to a desire from the organization to share their experience; and
- provide insights on BioTrade incentive measures.

The eight case studies presented here differ greatly, but all clearly illustrate that BioTrade activities are generating a variety of practical, focused incentives to encourage the conservation of biodiversity and the sustainable use of biological resources.

4.1 Nativa and Cosmetic Valley[24]

This case study focuses on a unique and innovative partnership between a developing country BioTrade association and a developed country trade association.

4.1.1 Nativa – a BioTrade sector association

Nativa was created in 2006 in Colombia with the support of the UNCTAD BioTrade Initiative and partners, the Centre for the Promotion of Imports from developing countries (CBI) and the Colombian BioTrade National Programme/Humboldt Institute. Nativa is the sector association in Colombia of BioTrade companies involved in native natural ingredients.

Nativa recognizes the important role the private sector has to play in the implementation of the CBD and the MDGs. To fulfil this role, enterprises acknowledged the importance of working together, first at the national level with the creation of Nativa and also at the regional level with the creation of BioNativa – the Andean and Amazon association for BioTrade of natural ingredients and products.[25]

Nativa focuses on the sustainable use of native plants and promotes the development and trade of products with added value. This is carried out through the framework of the value chain approach and the implementation of BioTrade principles and criteria. Nativa has developed a supportive environment and a network for companies working in the natural ingredients sectors that respect BioTrade principles and criteria.

Thanks to the strengthening of social capital, Nativa aims to create social and market incentives for the engagement of private actors in the conservation and sustainable use of biodiversity. For instance, the sector association aims to harmonize relations between its members, strengthen value chains, promote knowledge sharing, develop studies and recommendations on problems faced by its members, facilitate their participation in trade fairs and participate in policy processes affecting its members. In addition, facilitation of access to finance for its members for research projects is also an important objective of Nativa.

Nativa includes: nine companies, one university, one public research laboratory and more than one hundred products and fifty active ingredients from native species, including vegetal extracts, essential oils, natural dyes, resins and sweeteners.[26, 27]

4.1.2 Cosmetic Valley – a BioTrade value chain partner

The French association, Cosmetic Valley, is the world's leading resource centre for perfumes and cosmetics.[28] It was created in 1995 and is hailed by the French Inter-ministerial Committee for Regional Development and Competitiveness as a "competitiveness cluster".[29] The development of the cluster creates a supportive and cohesive structure for the cosmetic sector and its approach promotes innovation and expansion in international markets. Cosmetic Valley coordinates a network of around 470 enterprises, both large perfume and cosmetic companies and SMEs, research laboratories, training institutes and universities. It covers seven French departments in three regions: Centre (Eure-et-Loir, Indre-et-Loire, Loiret, Loir-et-Cher), Ile-de-France (Yvelines, Val d'Oise) and Haute-Normandie (Eure).

Cosmetic Valley is willing to adopt practices respecting biodiversity conservation. However, one of the main challenges for the cluster is how to include conservation and sustainable use practices within its business activities, as well as how to convert it into a source of innovation. Cosmetic Valley is willing to act in a sustainable manner, based on:

- "ethical values for respect by stakeholders for companies' operations: employees, clients, suppliers, shareholders, the community at large"; and
- "social and environmental harmony for the planet as a whole".

In particular, Cosmetic Valley disseminates best practices in sustainable development with the objective of bringing its member companies into a virtuous circle, especially with the adoption of best manufacturing practices (BMPs), responsible production and consumption modes as well as clean modes of transport. The cluster integrates sustainable development factors in the development of its products to stimulate innovation. It has also initiated the development of an eco-responsibility charter which is based on defined commitments such as resources preservation, fair relations with southern countries, carbon wells and scientific cooperation programmes.[30] Finally, the cluster is willing to create a sustainable partnership with biodiversity-rich countries.

Highlights of Cosmetic Valley's profile include:

- 470 companies, including the largest perfume and cosmetics companies – e.g. Guerlain and Dior (LVMH), Shiseido, Hermès, Nina Ricci and Paco Rabanne, Lolita Lempicka, Gemey-Maybelline and Yves Saint Laurent Beauté (l'Oréal), Clarins, Caudalie and Chanel; and a majority of SMEs in the sector;
- 45,500 jobs;
- €10 billion turnover;
- 6 universities;
- 200 public research laboratories;
- 7580 scientists;
- 136 training institutes.

4.1.3 Nativa and Cosmetic Valley – a BioTrade partnership

The Chamber of Commerce of Bogotá, through the promotion of Colombian products and exchange of technology and know-how between Colombia and Europe, approached the United Nations Industrial Development Organization Service in France (UNIDO, France). Within their activities, they organized a French-Colombian exchange of experiences on competitiveness clusters, in which Cosmetic Valley and Nativa Colombia participated in June 2007.

As a result of this exchange, Cosmetic Valley and Nativa started discussions to strengthen collaboration due to their shared commitment to the sustainable use of biodiversity as well as the export-readiness of Nativa and their interesting and innovative products. Subsequently, in February 2008, a memorandum of understanding was signed between the two organizations. Other national actors that have contributed to achieving this partnership are the Colombian National BioTrade Programme/Alexander von Humboldt Institute and the Fondo Biocomercio.

The partnership between Nativa and Cosmetic Valley is a business alliance for the promotion of native Co-

Table 2. The benefits of a business alliance – Cosmetic Valley and Nativa

Cosmetic Valley	Nativa
• Gained knowledge of interesting products derived from native biodiversity • Complementary products for the Cosmetic Valley cluster • Facilitated access to Colombian companies and research organizations	• Facilitated access to potential buyers and pool of experts (market access, product quality, sustainable supply chains, etc.) • Learned how to develop a competitive cluster for the cosmetics sector • Created possibilities for the training of Nativa members by Cosmetic Valley members

Common activities

- Joint stands at the trade fair Beyond Beauty (Paris, October 2008 and Paris, October 2009)
- Mutual promotion in national and international markets
- Continuous development of joint practices for the conservation and sustainable use of biodiversity, with special focus on resource management and technology transfer
- Developing a virtual logistics platform for the exchange of products aiming at increasing links between the members of the two clusters and establishing potential commercial agreements between companies' members from Nativa and Cosmetic Valley
- Mutual research and development (R&D) projects related to natural active ingredients, colorants, etc. with the financial support of Cosmetic Valley and Colombian Administrative Department for Science, Technology and Innovation (Colciencias)
- Access to a broad number of Colombian and French companies, laboratories and research organizations

lombian products. It has resulted in the following benefits/activities for both associations shown in Table 2.

4.1.4 Incentive measures generated through the partnership

The partnership develops a supportive and cohesive social environment around actors pursuing the same goals, that is, the commercialization of natural cosmetic products. Through the partnership, market, financial and social incentives are created for Cosmetic Valley and Nativa to engage in sustainable practices.

Market incentives

The partnership generates market incentives for Nativa as it enhances market access for its products. Cosmetic Valley, on the other hand, generates market incentives from the partnership through the enhancement of the supply of native Colombian products for the cluster and hence diversifying its product offer. Furthermore, Nativa's regard for BioTrade Principles has made its products distinctive in the markets.

Nativa's presence at the Cosmetic Valley stands at fairs such as Beyond Beauty are key for the marketing of Nativa's products and the creation of links between the Nativa and Cosmetic Valley companies.

Social incentives

The partnership also generates social incentives as it increases skills, knowledge and ability among Nativa and Cosmetic Valley members. Nativa's members learn from the experience of Cosmetic Valley, which started as a small cluster and became a strong worldwide competitiveness cluster for the cosmetic sector. Through the partnership, members from Cosmetic Valley have also enhanced their knowledge of specific Colombian plants and this has consequently widened possibilities for R&D, e.g. for creating colourings and bio-pesticides. The partnership also creates opportunities for technological transfer which enhances Nativa members' local capacities.

Financial incentives

The access to finance is facilitated by the competitiveness clusters and is further enhanced by the partnership. For example, the partnership facilitated access to funds for R&D projects which brought funds from the cluster together. Cosmetic Valley itself provides funds for mutual R&D projects.

4.1.5 Lessons learned from the partnership

The existence of a market for environmentally and socially responsible biodiversity-based products, especially in developed countries, is a key driver for the adoption of practices respecting the conservation and sustainable use of biodiversity. It is also a prerequisite for the success of the partnership between Nativa and Cosmetic Valley.

The following concrete benefits have been obtained by the partnership between Nativa and Cosmetic Valley:

- increased competitiveness of members' enterprises and expansion of markets (for Nativa) and product offers (for Cosmetic Valley);
- marketing of members' products and positioning of native natural products in national and international markets;
- associated companies have gained a foothold in international markets; and
- exchange of experiences and knowledge and the generation of joint R&D projects.

4.2 PhytoTrade Africa[31, 32]

This case study reviews the approach of the Southern Africa Natural Products Trade Association – trading as PhytoTrade Africa – in establishing and facilitating the commercial trade in plant-derived natural products (NPs). It shows how this approach has encouraged the development of incentive measures that contribute towards the sustainable use and conservation of forest resources by local communities. It is further supported by the example of baobab harvesting and trade in Malawi by TreeCrops (Pvt) Ltd, a business member of PhytoTrade. This is further detailed in the next section which explores the support provided by PhytoTrade and TreeCrops (Pvt) Ltd that has generated incentives for communities to harvest baobab products in a sustainable way.

4.2.1 Development of incentive measures

PhytoTrade's goal is to support the commercialization of NPs through the development of the supply chain and global markets for NPs. In so doing, its aim is to enhance economic growth for poor rural communities through sustainable harvesting and ethical trade in a range of native plant species. PhytoTrade was established in 2001 and as of this writing has a membership of more than 50 organizations that work with approximately 20,000 harvesters. Approximately 85 per cent of these harvesters are women.

PhytoTrade deals with botanical extracts and oils from its focal species including:

- baobab (*Adansonia digitata);*
- Kalahari melon (*Citrullus lanatus*);
- mongongo (*Schinziophyton rautanenii*);
- marula (*Sclerocarya birrea*);
- sour plum (*Ximenia sp.*);
- mafura (*Trichilia emetica*);
- African sausage tree *(Kigelia africana)*.

PhytoTrade Africa works with diverse products. This diversification of products allows it to reduce risks, transaction costs and externalities.

PhytoTrade has facilitated the development of the supply chain as well as identified global markets for NPs from southern Africa, including the baobab from Malawi. As illustrated by this case study, support provided by PhytoTrade has developed incentive measures for its members to engage in practices respecting biodiversity conservation and sustainable use.

4.2.2 Approach to market and social incentives

PhytoTrade's objective is to generate supplementary incomes for rural communities in southern Africa's marginal areas through the sustainable exploitation of wild-harvested natural products – primarily plant species – and the creation of global markets for these products. Primary producers are often faced with many constraints in accessing export markets, most of which are niche and high level markets. Factors such as social insecurity, lack of education and business experience, limited space in market, and lack of capital often reduce the ability of primary producers to access global markets.

PhytoTrade therefore seeks to achieve a broad development objective by pursuing a largely commercial approach whereby the value chain is developed from the primary producers' level to the global markets. To achieve its goal, PhytoTrade, along with its members, focus on four main areas:

- research on product development;
- development of the supply chain;
- market opportunities; and
- institutional frameworks.

Of particular relevance to this working paper are two of these focal areas: the development of the supply chain and market development to create incentives for sustainable use of the NPs. The following section describes the intervention undertaken by PhytoTrade to enhance trade in NPs from southern Africa through the development of the supply chain and identification of market opportunities.

4.2.3 Market incentives through support in market development

In order to be successful, business strategies need to take into account market demand for the commercialized products. In the case of PhytoTrade Africa, failures were observed when successful initiatives were replicated without taking into account the existence of a limited market demand. Once market potential has been observed, any new product requires appropriate marketing, especially if the product is based on an entirely new ingredient that is unknown to the market.[33] While the need to raise awareness among consumers may be recognized, the process is often expensive and few companies can afford the cost.

To contribute towards the development of a reliable market for NPs, PhytoTrade has developed several initiatives that include support for certification standards, the development of commercial partnerships with companies in Europe and South Africa, and attendance at international trade shows to raise consumer awareness about natural products. In addition, brochures, articles and regular newsletters have been published as part of market development strategies.

Efforts have been made to adhere to existing regulatory frameworks that govern trade in natural products in the different markets and/or geographical regions. The support provided by PhytoTrade enhances market access and hence generates incentive measures for PhytoTrade members to adopt sustainable practices.

Certification standards and compliance

As the development of NP markets has progressed, it has become increasingly apparent that certification represents a key opportunity for primary producers. Certification can increase the benefit flows to small-scale producers and provide market incentives for producers to invest in more sustainable harvesting practices. Consumers are becoming increasingly aware of the social and environmental impacts of their consumption patterns and eager to see tangible evidence that negative impacts are reduced.[34]

However, small-scale producers of non-timber forest products (NTFPs) that feed into this market have found themselves drawn into often complex, shifting and expensive certification scenarios that can form a barrier to trade. If the gap between the industry's certification expectations and the small-scale producer's certification capacity is wide, small producers will likely be excluded.

PhytoTrade has tried to narrow this gap in practical ways to facilitate entry of small-scale NTFP producers into the global natural products market, for example by providing certification grants to members. Certification has been done through Ecocert-Afrisco. Efforts have also been made to develop a harmonized global standard with the Union of Ethical BioTrade (UEBT) for NTFPs certification.

Initial analyses suggest that organic certification has had positive outcomes so far. Producers have earned up to 50 per cent more per kilogram of material as a result of the premium paid on organically certified products, and several hundred producers have benefited from these improved prices and associated dividends. The price paid to individual harvesters has increased for primary producers that work with members of PhytoTrade such as TreeCrops.

Addressing regulatory requirements

The review done by PhytoTrade prior to efforts made to develop the NPs industry in southern Africa revealed that adequate attention to regulatory issues needed to be paid.[35] PhytoTrade has adopted a strategy which generates information on all regulatory requirements for each product and in each market. Regulations that determine accessibility to external markets will often vary from country to country. For instance, in the European Union (EU) – which is currently the biggest market for NPs from PhytoTrade members – application for novel foods approval has to be done prior to the launch of a new product in EU markets. The application process can take anything from six to thirty-six months and is often expensive. For example, PhytoTrade applied for EU novel foods approval for the use of baobab pulp as a food ingredient within the EU in August 2006. Approval was granted in July 2008.

For long-term sustainability, it is necessary to apply and get approval under these regulations so that a product is not pulled off the shelf after having been launched into the market. Through the generation of information on regulatory requirements as well as the support for applications to enter markets, PhytoTrade is able to facilitate access to markets for its members. Hence, PhytoTrade generates market incentives for its members to adopt practices that adhere to the conservation and sustainable use of biodiversity.

Commercial partnerships

When PhytoTrade was established, it was recognized that to realize sustainability, there was a need to adopt a strategy that would ensure the existence of a reliable market for natural products. Thus, the commercial partnership approach was adopted. Through this approach, commercial partners that have interests in natural products are approached for collaborative work with the trade association. If parties are agreeable, a memorandum of understanding regarding the partnership is drawn up and signed by both parties.

By end of 2008, PhytoTrade had two main commercial partners – Aldivia based in France and Afriplex based in South Africa. Aldivia mainly purchases bulk oils from the focal species for cosmetics, while Afriplex concentrates on flavour extracts from fruit pulps for the food and beverage industry. These commercial partnerships are also a mechanism for developing joint marketing efforts for natural products. For instance, by the end of 2008, Aldivia had cumulatively developed a database of over 370 customers for African oils and identified about 2,300 prospective clients.

4.2.4 Social incentives through supply chain development

An important element identified by PhytoTrade at the start of the programme was the need to ensure the existence of an adequate supply base to meet demand once the product is launched into the market.[36] To ensure consistent supply, several mechanisms have been put in place. These include providing relevant technical support and business development advisory services to its members, coordinating production to meet the bulk volume requirements of the market, and assisting members to attain the required quality standards for export. These services enhance the social and human capital of members and consequently act as social incentives for the adoption of sustainable practices.

Technical support in production

PhytoTrade is committed to providing capacity-building and technical support to its members in order to enhance their skills, abilities and knowledge and to enable them to be reliable NP suppliers. Since 2006, in response to specific requests, PhytoTrade has implemented a training and capacity-building approach that focuses on small, targeted sub-groups within the membership.

Training has not been generic and static but rather has changed over time to the meet changing needs of members. Initial emphasis was placed on sourcing of NPs and as this level of the supply chain became bet-

ter managed and more efficient, emphasis shifted to packaging, quality control, export and documentation. Such technical support better equips primary producers to meet quality standards and is a tool to enable them to overcome the stringent quality requirements of global markets.

Pre-qualified supplier system

To contribute towards accomplishing commercial linkages between producers, processors and traders in the market chain, PhytoTrade works closely with the competent and well-capitalized members through their pre-qualified supplier (PQS) system. The PQS system gives priority on commercial orders to members with demonstrable capacity to produce, process and export natural products reliably to agreed quality and pricing specifications. The PQS system was introduced in 2007 to streamline the export process. By the end of 2008, out of fifty-two PhytoTrade members, there were six PQS members in five different member countries. TreeCrops is one of the PQS, with a focus on baobab pulp supplies.

The PQS system has contributed towards improving supplies of bulk oils and fruit pulp that meet the quality standards for the European market. Relevant training workshops are facilitated by PhytoTrade to the PQS members on a regular basis. For instance, in September 2008, a course was held on quality management systems. Where feasible, such training workshops are held at one of the members' premises to enhance learning and the sharing of experiences. PQS members also meet on a quarterly basis to discuss progress in production and other related market issues.

PhytoTrade Africa tries to build capacities at the local level and connect value chain actors. Furthermore, its support is focused on building profitable value chains. Using these approaches, a number of PhytoTrade Africa members have become economically sustainable and many of them no longer rely on the trade association.

The case study that follows focuses on one of PhytoTrade's member companies.

4.3 TreeCrops and PhytoTrade Africa[37]

4.3.1 Overview

TreeCrops is a private company based in Lilongwe, Malawi, specializing in the commercialization of natural products. The company promotes sustainable wild harvesting of baobab fruit and seed from the area around the arid southern region of Lake Malawi. The company processes baobab pulp into various consumable products that are sold in the local (national) markets as well as exported to regional and international markets. The baobab pulp, which is a whitish, powder rich in vitamin C, is traded in European markets and used as a food ingredient. Baobab seeds are pressed to produce high value oil that is sold on the international market, especially in the cosmetics sector. The company forms a bridge between the suppliers of baobab products and sales markets where finished products are sold to highly specialized players in the food and cosmetics sectors.

The current production level of baobab pulp is on the average 600 kilogram per day. The factory has a capacity to produce more than 300 kilograms of oil per month at present, doing an eight- hour shift. The company emloys five peple stationed at the factory and three others who work in the fields. TreeCrops (Pvt) Ltd works with both female and male harvesters and processors of baobab seed and pulp. Rural primary processors involved in the baobab trade with TreeCrops (Pvt) Ltd during 2008 consisted of 122 women and 264 men in Dedza District near the southern shores of Lake Malawi.

Preliminary processing of pulp is done at the village level at central collection depots where seed and pulp are separated by local primary producers employed by the company. Further processing of the pulp through grading, grinding and packaging is done at the main factory of TreeCrops in Lilongwe. The pulp is then sold to local and international markets as an ingredient for the food industries. Examples of products including the pulp are fruit smoothies and fruit juices. These are relatively new and developing markets. Only those suppliers who abide by the set standards and are willing to update their knowledge about the market and products are involved in trading relations with TreeCrops. Packaging is done at the factory and baobab pulp finished products are sold on the regional market through a commercial partnership arrangement within PhytoTrade.

4.3.2 Expansion of formal employment in sustainable baobab trade

Before the inception of the formal trade of baobab products by TreeCrops, local livelihood options were mainly skewed towards crops and livestock. Despite average incomes from baobab trade being modest, it is proving a more consistent source of income than

from crops and livestock. This is probably because of the adaptation of the baobab species to the harsh, arid environment. As TreeCrops is growing, more and more of its primary producers are getting formal employment, which helps to enhance their role, confidence and capacity to sustainably harvest the resource and also train fellow primary producers. Local primary producers are employed as receivers of the baobab raw material at the storage facility within the source districts. These trained receivers are responsible for ensuring compliance with sustainable harvesting, and that quality and hygiene standards are met during sourcing, processing and storage at the local stage of the baobab supply chain. Thus it is mandatory for collectors to deliver to a central point so as to ensure control of the storage and processing conditions. Storage conditions would be difficult to monitor if the product were stored in individual households. Trade in baobab by TreeCrops has also reduced sales to middlemen or "vendors" who often undercut prices.

The increase of formal employment for baobab primary producers and the reduction of sales to middlemen, both linked to the creation of TreeCrops, are key drivers for the engagement of primary producers in the sustainable use of baobab. Furthermore, PhytoTrade and TreeCrops also provide assistance that facilitate access to markets and strengthen the human and social capital of primary producers.

4.3.3 Incentive measures for sustainable use

Incentive measures generated by PhytoTrade and TreeCrops that have contributed towards sustainable use and conservation of biodiversity include social incentives (enhancement of skills, knowledge and abilities) and market incentives. Property rights as well as other political incentives (clearly defined property rights and existence of institutions that monitor the use of NPs) are also considered. These incentive measures have been analysed via annual impact monitoring in Dedza and Ntcheu districts done by PhytoTrade and TreeCrops annually from 2005 to 2008 and are discussed further below.

Market incentive – creating market opportunities

To create market opportunities for the trade association members, PhytoTrade handles regulatory requirements in the global markets. For example, PhytoTrade went through the process of applying for the EU novel foods approval to have baobab pulp approved as a food ingredient in EU markets. The process took four years (including two years for the application process and approval was finally received in July 2008. Application was also made to the United States Food and Drug Administration for a Generally Recognized as Safe (GRAS) notice to have baobab used as a food ingredient in the United States of America. Approval for the GRAS notice was received in July 2009. Being able to meet these regulatory requirements has created market opportunities for the trade association, especially TreeCrops and other members involved in baobab production. Some products that use baobab as an ingredient have been launched in the United Kingdom markets. These include baobab jam and some drinks that contain baobab. In the long term, an increase in named baobab products in the EU markets would create increased demand for baobab pulp and therefore increase purchases from primary producers.

Markets have been developed for these novel products unknown in global markets. Market identification and creation is done through PhytoTrade's marketing offices in London and South Africa. The marketing team attends relevant trade shows in Europe – a way of advertising natural products from southern Africa. Trade association members are also given the opportunity to attend these trade fairs to showcase their products. For instance, TreeCrops has participated in Biofach (Europe) and the natural and organic trade fairs in South Africa. This has created market awareness of their products.

Baobab pulp and oil are sold on the regional market through a commercial partnership arrangement within PhytoTrade. In addition, TreeCrops produces its own finished products for the national market in Malawi. Since baobab is traditionally consumed in Malawi, supplying baobab products to shops makes the products accessible to urban dwellers who may not ordinarily have easy access to baobab. This local market for finished products contributes towards increased purchases of baobab pulp from the primary producers.

Marketing committees that were formed in the baobab producing communities contribute to the management of resources and NPs production processes. The marketing committees work closely with TreeCrops in the supply of the baobab raw material and the system directly involves primary producers in decision-making processes regarding NP use at local level. Primary producers also have space to negotiate pricing with TreeCrops, which has created mutual trust between the harvesters and the company.

Social incentive – enhancement of skills, abilities and knowledge

TreeCrops provides primary producers with training and assessment in order to develop their skills for sustainable production, harvesting and compliance with quality standards. The training covers, sustainable harvesting techniques, hygiene and quality management to ensure that high quality baobab seed and pulp are produced. At the end of the training, primary producers (the harvesters) are given certificates that they show when delivering their product to the depots. TreeCrops give trainees guidelines for harvesting that include no use of child labour and the prevention of gender-related exploitation. The guidelines also include harvesting techniques and environmental conservation, pulp extraction, packaging, storage and transportation. Harvesters are paid for their products upon delivery to the depot, an incentive for them to continue trading with TreeCrops.

In addition to the training, TreeCrops has set up an internal control system (ICS) to ensure quality management in the production process. A committee was formed to enforce the ICS. This ICS committee is comprised of two people from the company and two representatives from each of the suppliers groups. Local marketing committees were formed in the baobab producing communities to monitor harvesting practices and ensure sustainable use and management of baobab products. These marketing committees include representatives from the supplier groups and their functions include negotiating prices and quality assurance. These committees work closely with TreeCrops in the supply of the baobab raw materials (pulp, seed and fruit pod fibre). The system directly involves primary producers in decision-making processes on harvesting baobab in the area and these are often facilitated by local coordinators employed by the company. The empowerment of primary producers provides incentives for them to engage in the sustainable use of biodiversity. In fact, the involvement of producers in the decision-making process generates awareness and a sense of responsibility with positive impacts on the use of baobab.

Social incentive – strengthening of social capital

Engagement in the trade is also important in providing an opportunity for participants to build social capital through new and extended social networks, often beyond the immediate family and neighbourhood bonds upon which most households rely. Almost all primary producers trained by TreeCrops are engaged in groups related to the conservation of natural resources or other development initiatives. This compares with a mere 12 per cent obtained in a random sample selected within the community among primary producers who supply the informal markets. As was observed during focus group discussions with trained and affiliated primary producers, such groups are important in building self-esteem and promoting other income generating initiatives such as gardening and sewing, especially amongst the women producers.

Property rights and institutions

The Government of Malawi devolved proprietorship of communal forests and woodlands to local communities, enabling access to these resources via traditional leadership mechanisms. Some other woodlands are registered as government and others as individual plots. With the emerging need for baobab organic sources, primary producers are encouraged to have traditional access rights/permits granted by the local traditional leadership to baobab trees in communal woodlands. These are not exclusive collection rights; the resource remains available to the entire community but permit holders have the confirmed right to collect, whereas others still have the right to use it but are not considered as registered collectors under TreeCrops. This is in line with the access rights that are established under the organic regulations whereby evidence is required to show that the collectors have the right to collect. As communities realize that they can have permits to collect baobab from their woodlands, it somehow increases their confidence to contribute to biodiversity conservation.

During an organic inspection in September 2008, the villagers from Store village noted to TreeCrops' field inspector that the establishment and mapping of woodlands in the villages improved ownership rights. The villagers stated that, since the boundary of the woodland was now clearly known, collectors from other communities would be excluded from the collection of fruit from their woodland. This is not the case with all collection areas but woodland mapping and registration efforts seem to be working towards improved ownership rights in the registered communities. It is hoped that such a sense of ownership will also transform into better conservation of the same woodlands by the registered community of primary producers residing there.

4.3.4 Lessons learned

This case has highlighted some of the incentive mea-

sures provided by PhytoTrade and TreeCrops to engage in baobab trade in Malawi that fosters the sustainable use and conservation of biodiversity by traders.

The creation of TreeCrops has expanded formal jobs and incomes generated through baobab trade. Furthermore, technical assistance provided by PhytoTrade and TreeCrops has enhanced the skills, abilities and knowledge as well as the social capital of the value chain actors.

With the incomes obtained from baobab production activities, primary producers are better empowered:

- Producers can now purchase their basic food needs.
- Purchase a property, send children to school, as well as invest the returns into other income-generating activities easier than before engaging in sustainable baobab trade.
- Investment in education may contribute to future intergenerational poverty reduction.
- Where income has been invested in other income-generating activities such as sewing, contributions to livelihood diversification and risk reduction are most likely. The significant possession of more livestock among primary producers engaged in the formal baobab trade in comparison with ordinary primary producers is helping TreeCrop's primary suppliers to spread their investments contributing to traditional livelihood options.
- This independence and diversification of livelihoods is particularly important in the context of declining transfers between rich and poor, and among the poor themselves suffering from a worsening poverty situation.
- Levies paid to the community coffers through the access and benefit sharing mechanism established by TreeCrops has so far been used for social services such as fixing boreholes for the benefit of the community as a whole and not only for baobab traders.

An important aspect illustrated by the TreeCrops case study is the need to correlate incentive measures enhanced by private actors with public incentive measures such as property rights. Assured access to natural products through mapping and registration of resources areas, taking into account property rights and resource access issues as well as the role of traditional institutions has been one of the incentives encouraging traders to use their resources in a sustainable way.

Last but not least, market incentives arise from services provided by PhytoTrade (i.e. supply chain development, including certification and market development addressing regulatory requirements and commercial partnerships). In fact, the existence of reliable markets for natural products that have been developed by the trade association creating opportunities for baobab product sales by harvesters, is another incentive for biodiversity conservation at the local level.

4.4 Fondo Biocomercio[38]

4.4.1 Overview

Fondo Biocomercio Colombia (BioTrade Colombia Fund) addresses a critical need of BioTrade companies: access to finance. This is a challenge that BioTrade initiatives need to overcome. In particular, as traditional financial entities rarely differentiate between conventional and biodiversity-friendly companies, nor are they familiar with biodiversity-based sectors such as those promoted by BioTrade. In general, BioTrade companies are characterized by:

- Low value of real guarantees;
- New established companies with limited administrative and management capacities;
- Culture of non-reimbursable financial support; and
- Limited experience on when to use and how to manage credits.

Although these characteristics are normal for young sectors, BioTrade companies are unknown to the traditional banking system which qualifies them as high financial risk companies. The Fondo Biocomercio was established believing that sustainable use of biodiversity could be achieved through trade and that companies pursuing this idea should be encouraged. It was created by the Instituto Alexander von Humboldt in December 2005 with the financial support of the Global Environmental Facility (GEF). Its operations started in October 2006 and since the end of 2007, resources have been provided by the Royal Netherlands Embassy. Fondo Biocomercio is a non-profit organization which aims to support access to finance to companies fulfilling BioTrade principles and criteria. The Fund's impact on biodiversity conservation is indirect through the generation of financial incentives for the adoption of sustainable practices by its client companies. Table 3 on page 18 gives an overview of Fondo Biocomercio's operations.

4.4.2 Applying to the Fund

The requirements for a company requesting financial support from the Fondo Biocomercio are as follows:

Table 3. Fondo Biocomercio's profile (2009)

Number of companies benefiting from Fondo Biocomercio	59
Total turnover of beneficiaries (2008, in United States dollars)	$ 58,000
Hectares under BioTrade practices	19
Number of species under BioTrade practices	300
Employment generated for local communities and minorities	700
Number of beneficiary families	3,200
Number of companies that add value to their biodiversity-based products and services	55 per cent
Commitment to fulfil BioTrade principles and criteria by beneficiary companies:	
1. Conservation of biodiversity	57 per cent
2. Sustainable use of biodiversity	60 per cent
3. Fair and equitable sharing of benefits derived from the use of biodiversity	70 per cent
4. Socio-economic sustainability (productive, financial and market management)	87 per cent
5. Compliance with national and international regulations	94 per cent
6. Respect for the right of actors involved in BioTrade activities	56 per cent
7. Clarity about land tenure, use and access to natural resources and knowledge	81 per cent

- Have an on-going commitment to fulfil the BioTrade principles;
- Be legally constituted;
- Registered with the Chamber of Commerce;
- Have a minimum experience of one year commercializing goods and services;
- Business plan proposal; and
- Completed a request form.

Companies need to demonstrate in their business plans that their activities recognize and appreciate the conservation and sustainable use of biodiversity. After the loan allocation, adherence to the criteria is assessed through progress reports and field visits. Monitoring and evaluation activities take note of the progress realized and the aspects to be improved.

When providing finance to a company, the Fondo Biocomercio pays special attention to verify that the company:

- Does not use endangered species, such as those listed in CITES Appendix I;
- Respects the free decisions and the prior informed consent of ethnic minority communities and farmers that participate in any of its initiatives;
- Does not use chemicals, and if it does, the company uses the less toxic ones;
- Respects protected areas; and
- Does not promote monoculture.

Finally, Fondo Biocomercio gives priority to communitarian enterprises, SMEs, associations and cooperatives.

4.4.3 Generating financial incentives

Through the services provided to its clients, the Fondo Biocomercio facilitates access to finance and hence generates financial incentives for enterprises conserving and using native biodiversity in a sustainable manner. Services provided by Fondo Biocomercio are especially attractive as they are flexible and take into account the risks associated with biodiversity-based products and services. Fondo Biocomercio provides three types of financial services:

- Loans;
- Factoring; and
- Capital.

Loans

The Fund proposes three kinds of loans to its clients:

- **Basic loans** which can only be used for working capital (not to reimburse debts), cover administrative costs or buy lands. Basic loans start at a minimum of US$ 1,400 (3 million Colombian pesos), with an interest rate of 8 per cent indexed to the DTF interest rate.[39] Loans are payable in fixed monthly payments, in Colombian pesos over a 24-month term.
- **"Expolínea" loans** which can be used to facilitate the participation of enterprises in fairs and commercial events. The size of the loan can be between US$ 1,400 and US$2,900 with an interest rate of between 12–14 per cent indexed to the DTF rate. The term of this loan is between 3 and 6 months, and it is reimbursable in a maximum of six fixed

monthly payments in Colombian pesos.
- **"Ecoturismo" loans** which can be used for ecotourism. This loan offers an interesting service as its reimbursement is not fixed on a monthly basis but rather defined according to seasons and planned visits. This mitigates risks associated with the instability of tourism and can therefore motivate companies to engage in ecotourism. A special system that recognizes contracts with travel agencies and promoters as guarantees (as they create potential income) adds to the flexible nature of this loan.

Exportur is an example of an ecotourism company that has benefited from a Fondo Biocomercio loan. Based in Santa Marta, Colombia, the company brings tourists to the Tayrona National Park which is a protected area and an indigenous reserve. In the past, the region was marked by insecurity and drug cultivation. The current improvement of situation despite the process to involve communities in alternative businesses (such as ecotourism) has been quite difficult. However, through a loan from the Fondo Biocomercio, training has been organized for the community. Women have also been empowered and have received assistance to create an association providing food and lodging services. The loan has also made possible the purchase of a car for the transport of tourists.

Factoring

Fondo Biocomercio also offers a "factoring" service. This service facilitates cash flow by releasing cash from invoices as soon as they are issued, thereby allowing companies to use the money when they need it most. The term for the Fund's payment of invoices is a maximum of 180 days and it applies to amounts greater than 1 million Colombian pesos (approximately US$ 500). The money can be distributed across one or a number of invoices. The companies need to pay a commission of 12 per cent indexed to the DTF rate.

Capital

The Fund can also invest in a company and can take up to 49 per cent of the equity.

4.4.4 Lessons learned

Access to financial resources for working capital or other requirements is difficult for SMEs and communitarian initiatives, and even more so in new sectors such as BioTrade. In this sense, the financial services offered by Fondo Biocomercio support the companies that are engaged in implementing conservation and sustainable use practices within their value chains.

The creation of a fund dedicated to the biodiversity sector and awareness of the issues faced by BioTrade companies allow for the provision of services adapted to the needs of these companies. For example, the reimbursement of the ecotourismo loan is defined according to seasons and planned visits taking into account the risks associated with the instability of ecotourism.

Essentially, the low guarantee required by the Fund – i.e. a robust business plan as the only initial guarantee from companies – is a key driver attracting new private actors to sustainable practices.

Fondo Biocomercio, however, faces challenges including the following:
- **The generation of real, precise and comparable monitoring information by the companies.** It took two years for the Fund to train companies on how to measure, count and register areas, species, actions and investments, in part because the Fund has limited resources available for this purpose. These types of data, however, are needed to monitor conservation and sustainable use aspects. Today, information provided by companies is still quantitatively and qualitatively poor and the Fund is developing tools aimed at improving the quality of information.
- **Access to commercial funds.** To date, Fondo Biocomercio has only worked with public money. It seems to be a challenge for it to access commercial funds.
- **Continued active involvement in conservation and sustainable use during economic recessions.** In a context where companies are expanding, competing in demanding markets and being affected by the consequences of the economic recession, there is a risk that BioTrade companies will sacrifice their engagement in biodiversity conservation when they need to expand production, reduce costs and generate additional incomes.
- **Limited knowledge and recognition by consumers of native species and of the efforts required by companies to implement conservation and sustainable use practices.** There is limited knowledge, demand and incentives to enhance the consumption of native species at the national level, which is the main target for companies being supported by Fondo Biocomercio. Companies therefore combined their product range to include naturalized species with an established market, but always fulfil BioTrade practices.

- **Recognition of what BioTrade is by the government and other support organizations.** The term "BioTrade" has become somewhat of a cliché in the rhetoric of some public and private actors and is often used incorrectly as a synonym for green agriculture. Furthermore, the environmental sector is quite unstable. Therefore, Fondo Biocomercio needs to provide leadership and guidance on BioTrade concepts. This is a great challenge for Fondo Biocomercio given that it is a financial NGO. Therefore, it is important for Fondo Biocomercio to work collaboratively with other BioTrade actors in the country and the region.

4.5 Bolivian BioTrade and *Caiman yacare*[40]

4.5.1 The CITES-listed *Caiman yacare* in the Plurinational State of Bolivia

Caiman yacare are found in southern Brazil, the Plurinational State of Bolivia, Paraguay and northern Argentina.[41] During the early 1990s, populations of the species were considered somewhat depleted in the four countries, the principal cause being widespread illegal hunting during the 1970s and 1980s. However, due to their ability to adapt to a great variety of habitats, their learned wariness and their small size at maturity, *Caiman yacare* are particularly resilient to hunting pressures.

The species has been included in Appendix II of the CITES Convention since 1975 and its trade is allowed only if carried out in a sustainable way and through the issuance of export permits from the exporting country's CITES authority. Products commercialized from the species are leather skins and, more recently, meat.

The commercial use of *Caiman yacare* in the Plurinational State of Bolivia started in the 1950s and continued until 1990 with limited control. A ban[42] was instituted in 1990 with the support of the CITES Secretariat. In 1995, a pilot programme for the sustainable use of caiman was developed, creating the basis for the *Programa Nacional de Conservación y Aprovechamiento Sostenible de Lagarto* (National Programme of Conservation and Sustainable Use of Caiman) which started in 1997. It was based on experiences from other countries such as the Bolivarian Republic of Venezuela. In 2009, the Plurinational State of Bolivia also defined a quota of 50,000 per annum for the export of *Caiman yacare*.

During the following years, between 30,000 (1999) and 59,000 (2003) individuals were harvested through a management model based on eco-regional population sizes. After five years of implementation of the National Caiman Programme, several problems were encountered, in particular those related to quota allocation, the entry of more people into the programme, leather prices and tanneries' dissatisfaction with the leather quality.

4.5.2 Bolivian BioTrade and the *Caiman yacare* value chain

Beginning in 2004, a broad group of institutions and specialists participated in the re-design of the Bolivian caiman programme to adapt it to the national reality, and strengthen the regulatory and administrative framework by means of a monitoring plan. In addition, standardized sampling protocols were designed, monitoring of harvests commenced, and a new classification of water bodies was made. Additionally, a new system of technical data (counts, harvests, habitats) and administrative data (users, farms, quotas history, contraventions) was developed, and was assessed geographically via a GIS. This database is being continuously updated.

Parallel to this activity, management plans were suggested for development in *Tierras Comunitarias de Origen* (TCO – Original Community Lands[43]) and protected areas to increase the local communities' participation in *Caiman yacare* use, carrying out a number of activities directed at strengthening local communal structures.

In 2005, the Bolivian BioTrade National Programme prioritized its work to support value chains that are implementing BioTrade principles and criteria and the value chain of the CITES-listed species *Caiman yacare* was included.

A sector assessment and a strategic sector plan for the caiman value chain (*Plan Estratégico Sectorial de la Cadena de Valor del Lagarto*) was developed by the Bolivian BioTrade Programme, through workshops with the different value chain actors and field visits. The strategic sector plan was developed according to the *Guidelines for a Methodology to Support Value Chains for BioTrade Products.*[44] Challenges identified in the process are summarized below:

- **Conflicts between value chain actors regarding the use of *Caiman yacare*.** Conflicts principally arose from inappropriate quota distribution which did not satisfy actors' requirements, from

actions undertaken by middlemen and from low prices paid to primary chain actors (i.e. indigenous hunters) for their crude leather.

- **Limited measures to ensure sustainable harvests**, where no consideration for size, harvest season and location is observed.
- **Limited control mechanisms.**
- **Limitation of the legal framework to adequately promote the sustainable use of *Caiman yacare*.**

Initially, the National BioTrade Programme consulted the *Central de Pueblos Indígenas del Beni* (CPIB) (Representative Organization of the Indigenous Peoples of the Beni)[45] on the possibility of supporting the value chain of *Caiman yacare.* Focus was placed on technical assistance to ensure the sustainable use of the species through the elaboration of management plans.

As a result of the consultations, the Bolivian BioTrade Programme worked with ten Original Community Lands from the Department of Beni, a northeastern department of the Plurinational State of Bolivia located in the lowland region of the country. Ten management plans were prepared for the selected TCOs which have 106 communities and approximately 13,700 inhabitants.

Development of the management plans was done in a participatory manner and used not only to gather and disseminate information, but also to strengthen local capacities and to promote dialogue between all value chain actors. In total, 158 workshops were organized with the communities – 23 at the regional level and three at department level.

The actors leading this process were:

CPIB: coordinating activities and ensuring the traditional knowledge of indigenous peoples was included in the plans;

***Associación Boliviana de Conservación* (Bolivian Conservation Association – ABC):** NGO providing technical advice on environmental issues for developing the management plans; and

Bolivian National BioTrade Programme: acting as the facilitator to strengthen the value chain and provide specific technical support related to BioTrade.

Indigenous people are the main actors in implementing the management plans, as they are the ones responsible for harvesting and they have the legal obligation (under the Bolivian State) to assure the sustainable use of natural resources inside their territories. However, in the process, all value chain actors should also be involved, such as government entities, tanneries, middlemen, NGOs and researchers, among others.

4.5.3 Incentive measures

As a result of the analysis, the management plans can be considered as the main tool generating incentives for the sustainable use of *Caiman yacare*.

Market incentives – generating higher returns

The management plans generated market incentives as they helped hunters to sell their harvested skins at higher prices. During the first years of the *Programa Nacional de Conservación y Aprovechamiento Sostenible de Lagarto* indigenous people and other hunters received approximately US$ 5 per skin. Between 2002 and 2007, the price increased to US$ 10 per skin. Through the development of the management plan, since 2008 the negotiation capacity of the indigenous people was enhanced and their appropriation of benefits derived from caiman use increased. Furthermore, *Caiman yacare* was valourized as a resource from the indigenous territories. As a result, the price per skin paid increased to approximately US$ 20 (within a range of US$ 14–28 depending on the size and the quality of the cut).

Before the introduction of management plans, quotas would vary from one year to another, creating uncertainty for the producers and the buyers. The tanneries benefit from the implementation of the management plans, as they can now plan their production based on the annual quantities and also establish quality standards for their raw material. This allows them to stabilize their supplies and as a result, they acquire greater negotiation power with foreign clients. With the increase in skin quality, it is also possible that tanneries will obtain better prices on the international market. However, data to prove this are not yet available. Furthermore, prices on international markets for *Caiman yacare* skins also depend on other factors such as the price of classic skins (e.g. crocodile skins), availability, demand, fashion tendencies and the competition between producers of similar skins.

Social incentives – engaging the local population

The management plans developed and implemented generate social incentives as they enhance the skills, abilities and knowledge of value chain actors. Firstly, the bottom-up process gives a voice to local people and enhances their participation in the design of the harvesting programme. Secondly, the management plans guide community members to implement man-

agement practices and help them to enhance their skills.

Relationships between the value chain actors were strengthened through the organization of common activities, such as workshops during the process surrounding the development of the management plans. The participative character of the process allowed for the development of a cohesive and supportive environment for the sustainable use of *Caiman yacare* strengthening the social capital in the process.

Property rights – valuation of local lands

The management plans also increase the value of local lands. Caiman can be generally recognized as a non-migratory species and they can therefore be managed more effectively through the recognition of ownership of lands containing caiman. As the management plans expand the benefits to local stakeholders of sustainably using *Caiman yacare*, the value of the lands and aquatic ecosystems to local stakeholders also increases. Management plans also increased local control. Recently, community members have prevented external hunters from accessing their territories.

4.5.4 Lessons learned and key drivers

There are risks associated with working with CITES-listed species. If the trade of the species becomes illegal, businesses can be closed down. This kind of trade is also hard to predict. Furthermore, in the case of *Caiman yacare*, the connection between caiman trade and illegal trade is often made. The public views the species as endangered even though it can be managed sustainably. Even if the facts and science support the businesses exploiting the resource, it is hard to hit markets successfully when public perception of the trade is negative. Moreover, there is heavy competition with other similar or fake products.

At the same time, opportunities can arise from working with CITES species: by trading these species, access to multilateral support might be enhanced.

The following elements were key drivers of the success of the process surrounding the development and implementation of the management plans.

- **Generation of confidence in relationships between the value chain actors.** Facilitators of the process need to act in an independent and impartial way in order to gain the confidence of the different value chain actors. Facilitators also need to consider respectfully the organizational structures, social usages and traditional knowledge of communities. Furthermore, relationships between the different value chain actors were strengthened thanks to shared activities (e.g. workshops).
- **Development of a consultative process with the different value chain actors.** When local stakeholders are involved in decision-making processes and are the ones benefiting economically from harvesting, they are motivated to protect or manage their resources in a more effective way. Furthermore, the involvement and empowerment in natural resource management generates awareness and a sense of responsibility with positive impacts on natural resource use. Transparency, participation, inclusion and ownership are key factors for effective community empowerment.[46]
- **Implementation of a method coherent with local realities.** In order to facilitate the transfer of knowledge and information to beneficiaries, the method developed combined local, traditional and technical knowledge.
- **Simultaneous development of several management plans.** The cost-benefit relation of the development and implementation of management plans was positive, as many plans were established at the same time. In fact, ten plans were developed simultaneously and therefore, a large territory was covered and costs were optimized.

Findings from the case study on *Caiman yacare* are transferable. For instance, the importance of getting value chain actors to trust each other is applicable to other case studies. In terms of lessons learned, the wide results are not limited to crocodiles but are applicable to a broad range of BioTrade activities. In conclusion, challenges are very specific to the circumstances of this case study but the results are general.

4.5.5 BioTrade as a sustainable use measure for CITES species

BioTrade can be implemented as a strategy to ensure sustainable use of CITES species included in Appendices II and III. The BioTrade value chain and adaptive management approaches are especially interesting for the establishment of sustainable practices for CITES-listed species.

When choosing value chains to support, the BioTrade Initiative identifies whether a species is CITES-listed or not. It will only support species included in Appendices II or III. The BioTrade principles and criteria are then promoted to ensure that the species is used in a sustainable manner. National BioTrade programmes

are therefore key actors to support the effective implementation of the CITES Convention.

Furthermore, BioTrade provides interesting tools and approaches to trace products along the value chain, and hence can help with the collection of information requested by CITES. It is therefore important to maintain close relations between UNCTAD BioTrade and the CITES Secretariat and CITES national authorities.

4.6 Jambi Kiwa[47]

4.6.1 A medicinal plant's producers association in Ecuador

In the Ecuadorian province of Chimborazo, one of the poorest in the country, a pilot project with twenty women started in 1998 with the aim of improving their quality of life while fostering gender equality, guaranteeing the sustainable use of their surrounding natural resources and capturing the market potential of medicinal plants. This was achieved through the transformation and commercialization of medicinal and aromatic plants sold at the local and national market.

Most of the producers involved in the new association were used to a welfare and "clientelist" system and hence were used to asking for or receiving any goods or service offered by a public or private association as a charitable gift. Hence, it was a challenge to change their habits. The women developing Jambi Kiwa were introduced to new concepts related to self-management, fight against poverty, farmers' organization with autonomy from institutions, and the necessity of individual contributions to develop the association and create a vision for the future.

In 2001, the project named Jambi Kiwa evolved into a communitarian SME business that now includes six hundred families. Over 80 per cent are women, with high levels of illiteracy, and 75 per cent are from the indigenous Puruhá community.

Jambi Kiwa has been involved with the BioTrade concept since 2003. With the support of the Sustainable BioTrade Programme in Ecuador, PNBSE (Ministry of Environment/CORPEI[48]/Ecociencia) – a three year project (2004–2008) – was implemented with support from the Organization of American States (OAS). It aimed to promote the economic development of minority groups by strengthening the institutional, business and productive capacities of Jambi Kiwa and by consolidating its participation in national and international markets.

Currently, this community-based initiative transforms more than sixty-four plants in order to obtain ingredients (dried, cut or powder) for use in national agro-industries and finished products. These include formulas (infusions) and personal care products (shampoo, essential oils, creams, among others). Jambi Kiwa is now selling its products in national and international markets (Latin and North America, and Europe).

The business case of Jambi Kiwa is particularly interesting for this study on private sector experiences, as it was initiated and implemented by a minority group engaged in implementing the BioTrade concepts, approaches and principles.

4.6.2 Incentive measures

BioTrade concepts and approaches have been an incentive for Jambi Kiwa to systematically implement sustainable practices in line with the objectives of the CBD. In particular, through institutional strengthening and the development of capacities at the local level, BioTrade has contributed to providing the SME with planning and structural support that has made it more competitive while promoting the sustainable use of native species.

Incentive measures such as market differentiation, social and financial measures generated through BioTrade were also key to the engagement of Jambi

Table 4. Profile of Jambi Kiwa [49]

Created	1998
Members	632 (480 active), 80 per cent women, 75 per cent indigenous Puruhá
Products	Ingredients for food industries and personal care products
Markets	• Local and national markets: 7 per cent of the total medicinal herbs market; products sold through the biggest national supermarket chains • International: France, Canada, Latin America
Additional information	• Quality certification ISO/TEC 17025, organic and fairtrade certification • Brand recognized in the national market and registered within the National Intellectual Property Institute (Ecuador)

Kiwa members in the conservation and sustainable use of medicinal plants and to the success of the initiative.

Market incentives

BioTrade, as a market incentive measure in this case study, relates to the fact that through the implementation of a value chain approach that includes environmental practices, the supply capacity of Jambi Kiwa is enhanced. This is particularly important as more high quality raw material is obtained for the production of value-added final products. For instance, organically certified medicinal herb "tea bags" are now sold instead of loose dried herbs. Such changes bring about an increase in price for both the producers and for Jambi Kiwa.

The SME has also been able to register the trademark Jambi Kiwa at the Ecuadorian Institute of Intellectual Property. This trademark allows for the differentiation of Jambi Kiwa's products and enhances its competitiveness at market. Finally, access to markets that value sustainably produced medicinal and aromatic herbs was a further motivation to Jambi Kiwa to be engaged in BioTrade.

The following is a summary of activities that contributed to the market differentiation of Jambi Kiwa products:

- Enhanced processing capacity to generate quality and value-added products that compete in national and international markets.
- Improved quality and packaging of products, while increasing the product range offer of Jambi Kiwa.
- Developed a communication and marketing strategy empowered by Jambi Kiwa and its members.
- Accessed EU and North American markets as well as established a strategic alliance with a major Ecuadorian tea/infusions company.

Social incentive measures

Jambi Kiwa is small and faced challenges relating to the need to strengthen its structure – both the producers' association and the company. It also needed to improve its production process, develop quality and value-added products, and gain access to markets in order to become more competitive in local and national markets.

In this sense, BioTrade's involvement with Jambi Kiwa can be considered as a social measure as it has improved the capacity of Jambi Kiwa members to manage their SME and even negotiate with potential buyers, locally and internationally. The work carried out by the PNBSE has improved the organizational and management (business and production/processing) skills of Jambi Kiwa's leaders and members and, as a result, guaranteed the establishment of an environmental, social and economically feasible initiative that is managed by indigenous communities.

For example, the strengthening of human and social capital was achieved through three implemented capacity building activities:

- targeted training sessions;
- technical assistance; and
- coaching for Jambi Kiwa's employees, managers and members.

In addition, an internship programme was also established so that the BioTrade concept implemented by Jambi Kiwa was also transferred to other community-based projects in Ecuador.

Particularly relevant to the first two CBD objectives, Jambi Kiwa has the capacity to develop, implement and monitor management plans for selected wild collected species. These include identifying sustainable harvest rates adequate to the species, putting into practice good collection and agricultural practices, and executing successful documentation and monitoring systems. The importance and usefulness of these management plans for Jambi Kiwa to plan their activities and guarantee the sustainable use of their resources, has become a real incentive to be engaged in BioTrade.

A summary of the results that contributed to the human and social capital enhancement of Jambi Kiwa through capacity-building are as follows:

- Training was organized on the following topics: organizational strengthening and association, sustainable use and management of medicinal plants, and good collection, agricultural and manufacturing practices, among others.
- Technical assistance on the implementation of good agricultural practices and management plans for wild collected species was provided to over 1,000 producers. This assistance also supported the development of Jambi Kiwa's internal control system in line with ISO/TEC 17025.
- Coaching to Jambi Kiwa's manager in business administration and to the agronomist on harvesting practices.
- Internships for over ninety-three producers from other Ecuadorian projects located in Sierra (mountainous), Costa (coastal) and Amazon regions.

Financial incentives

BioTrade in itself could be considered as a financial incentive as its adherence generates access to financial resources needed to develop sustainable businesses. In particular for this case study, Jambi Kiwa's microcredit fund provides an incentive for producers to get involved in BioTrade practices.

The need for small producers to have access to funds in order to improve their yields, as well as their harvesting and post-harvesting practices was addressed through the establishment of a microcredit fund. This also supports the need of Jambi Kiwa to enhance its members' production of quality raw materials.

The structure and operation of this fund is unique to Jambi Kiwa, as its members (through committees) decide on its operation and the granting of microcredits and guarantees. Jambi Kiwa manages the fund, and training has been provided to its members and staff so that they are able to manage it successfully.

The microcredit fund was structured as a revolving fund.[50] Members apply for a credit in-kind (seeds, plants, equipment) to enhance their yields, and pay back in order to enable other community members to also access it. Administrative costs and other expenditures related to the operation of the fund are covered through an increase in the interest rate or through an additional fee. Credit is allocated after a thorough analysis of the required project proposal that should accompany each application showing the technical, economic and financial viability of the project. Currently, 56 per cent of the resources of the fund have been placed, and 38 per cent have already been recovered.

Through this microcredit fund, members are motivated to adopt sustainable practices – as required by Jambi Kiwa and their clients – such as organic certification and therefore it constitutes a financial incentive measure.

Physical incentives

The BioTrade project developed by Jambi Kiwa has an important focus on the strengthening of the physical capital of the SME. Jambi Kiwa received new equipment that allowed it to increase its productivity and reduce costs. For instance, it received a tea-bagging machine so that members could package the tea themselves and to reduce production costs. The quality of the products has also increased through the establishment of a quality control laboratory as well as ventilators to control the airflow. through the availability of new equipment, Jambi Kiwa products' competitiveness is enhanced.

4.6.3 Lessons learned

The following aspects played a key role in the success of Jambi Kiwa's engagement with sustainable practices:

- **Agreement of a clear objective.** Definition of a clear collective objective and strong personal and communitarian engagement.
- **Identification of traditional knowledge.** Traditional knowledge recovered and used to reinforce Jambi Kiwa's collective identity.
- **Mobilization of its own capital.** Before seeking external sources of capital, the SME was able to mobilize an important amount of cash and in-kind resources originating from the community and the organization itself. This capital and the involvement of local actors were key to the development and strengthening of the SME.
- **Microcredit fund.** Facilitation of access to finance through the creation of a revolving microcredit fund.
- **Organizational consolidation of the SME.** Evolution from a traditional organization to a modern SME oriented to market demands, training, shared responsibility and consensus.
- **Development of planning and monitoring tools.** From 2004, these tools were developed with the support of the PNBSE and they allowed Jambi Kiwa to obtain good agriculture and collection practices (GACP), good manufacturing practices (GMP) and organic certification as well as to implement sustainable management plans for the species.
- **Commercialization of higher quality products.** Owing to the increase in quality and organic certification, products are able to compete at international fairs and obtain the sanitary permits required by Ecuadorian legislation.
- **Gradual expansion in markets.** Demand at the local level was observed initially and then at the international level. Upon Jambi Kiwa reaching more maturity as an SME and attainment of organic certification for its products, it had greater negotiation power and was able to compete on international markets, by way of exporting medicinal plants.
- **Women's empowerment.** Women have received technical training which allowed them to develop their leadership skills as well as their agricultural knowledge enabling them to take care of the plants. Furthermore, the participation of the com-

munity was led by women fighting against poverty and exclusion.

In conclusion, it can be said that "the most significant social impact of the experience is the achievement of an economic development model for indigenous and farmers' communities that allows them to compete on international markets while strengthening their local culture and consolidating production methods that sustainably use biodiversity and the ecosystems in the region".[51]

4.7 The Union for Ethical BioTrade[52, 53]

Growing consumer awareness of the importance of biodiversity can be a strong motivation for the private sector to engage in the ethical sourcing of natural ingredients. The rising demand for biodiversity-friendly products generates opportunities for companies committed to ethical principles, as well as the challenge of gaining recognition for their efforts and distinguishing themselves in the market.

The Union for Ethical BioTrade (UEBT) is a pioneering model that gives companies the chance to demonstrate ethical and responsible sourcing of native biological resources. Membership of UEBT represents a way for companies to differentiate themselves in the market, taking the lead in meeting the demand for ethical products and seeing tangible business benefits over time. The UEBT also provides support and services that promote and facilitate the private sector's contribution to biodiversity conservation.

4.7.1 Differentiating the ethical sourcing of biodiversity

Increasingly advertising today refers to the environment and "greening of" products. Nature is widely highlighted by consumer product brands – food and cosmetics are no exception. In the context of products that come from nature, the trend towards sustainability and social responsibility means a growing interest in the source of the natural ingredients used, and in the preservation of related species and ecosystems. In other words, there is a growing consumer interest in biodiversity.

Indeed, consumers are developing an understanding of biodiversity, and are increasingly looking for companies to adopt biodiversity-friendly practices. According to the 2009 *Ethical BioTrade Barometer*[54] – a survey carried out by the UEBT – over 50 per cent of consumers have heard of biodiversity and even more are familiar with some of the issues linked to biodiversity loss, such as deforestation and species' decline. Expectations are that "biodiversity" itself will become a common household term by 2015.

Mere claims by companies of their biodiversity-friendly practices, however, are not sufficient for companies to tap into the growing consumer demand for biodiversity-friendly products. There is little public trust in unsubstantiated social and environmental assertions made by private businesses. Hence, companies are increasingly required to adhere to standards that are verified independently and developed through participatory processes. In fact, independent certification schemes, notably those promoted voluntarily by civil society, have encountered such favour with consumers that they have gone from being indirect incentives bringing a price premium, to becoming important conditions to access certain markets.

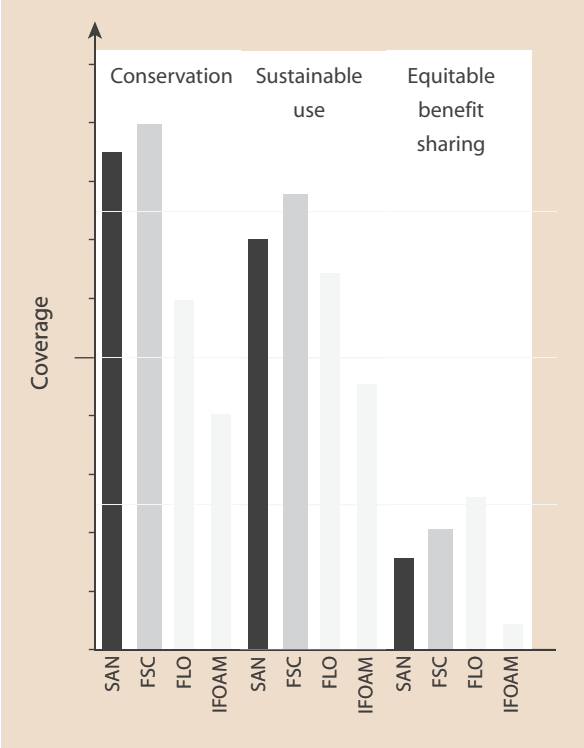
In the cosmetics and personal care sector, for instance, the *Ethical BioTrade Barometer* found that over 85 per cent of consumers would favour the purchase of products from a company that takes action to protect biodiversity. A large majority of consumers would in fact be willing to stop buying products from those companies not materially committed to ethical sourcing of the biodiversity. Yet companies' own claims in this regard is evidently insufficient. Only 40 per cent of consumers trust companies in the cosmetic and personal care sector, while only 30 per cent of them believe these companies pay serious attention to the ethical sourcing of biodiversity. Independent verification is critical – 80 per cent of the consumers surveyed indicated that they would have more confidence in a company whose biodiversity practices were verified independently.

According to UEBT's research,[55] however, none of the existing standards and certification schemes fully addresses the objectives of the CBD. For example, the figure below indicates how the following certification schemes address these objectives:

- Sustainable Agriculture Network (SAN);
- Forest Stewardship Council (FSC);
- Fairtrade Labelling Organizations International (FLO); and
- International Federation of Organic Agriculture Movements (IFOAM).

Issues such as maintaining genetic variety within species, recognizing traditional knowledge and implementing benefit sharing are also often not adequately covered. The Ethical BioTrade Verification Framework

Figure 1. Certification schemes and the objectives of the Convention on Biological Diversity



was created to fill this gap, helping companies to adhere to the Ethical BioTrade principles and criteria[56], which, as previously indicated, reflect the goals of the CBD. By engaging in Ethical BioTrade, companies can actually contribute to conservation and the sustainable use of biodiversity. By fostering long-term relationships with their source countries, they create employment, contribute to local development and help preserve local ecologies.

4.7.2 A new private sector association for Ethical BioTrade

UEBT is a non-profit association that promotes the "sourcing with respect" of ingredients that come from native biodiversity. Members commit to gradually ensuring that their sourcing practices promote the conservation of biodiversity, respect traditional knowledge and assure the equitable sharing of benefits all along the supply chain.

UEBT was born out of the need expressed by companies – SMEs – to differentiate Ethical BioTrade products in the market. This need was made evident in various business round tables held by the UNCTAD BioTrade Initiative which highlighted the importance of recognizing efforts towards the ethical sourcing of biodiversity.

In May 2006, in the context of a UNCTAD BioTrade round table discussion organized in Geneva, the idea to form an organization that could provide guidance for the sustainable use of biological diversity and market recognition for Ethical BioTrade products was born. A year later, a small but diverse group of organizations, with actors from the private sector taking the lead, created UEBT.

Currently, most members are businesses in the personal care and cosmetics industry. Some are active in the natural pharmaceutical and food sectors as well. Other sectors will be incorporated over time. UEBT members come from the Plurinational State of Bolivia, Brazil, Colombia, Ecuador, France, Peru, South Africa, Switzerland, Uganda, the United Kingdom of Great Britain and Northern Ireland and the United States of America.

There are three types of membership: trading members, affiliate members and individual members. The trading and affiliate members elect the board of directors of the union and approve the management of the organization.

Trading members can come from any part of the supply chain. Affiliate members include organizations or individuals that are supportive of the principles of Ethical BioTrade but are not themselves directly involved in trading. Individual members can be journalists, academics or other individuals who are working in BioTrade-related fields and are impacting public opinion.

UEBT helps its member companies to adhere to the principles and criteria of Ethical BioTrade which are based on the BioTrade principles and criteria previously described. The verification framework for natural ingredients establishes the basis to identify gaps, develop work plans and support company claims regarding ethical sourcing of biodiversity. UEBT also supports companies by sharing knowledge and expertise and by creating links between organizations with similar goals. By promoting business linkages between members, UEBT can help increase awareness within industry and enlarge the market for ethically sourced products. In this way, it helps to encourage ethical sourcing practices worldwide at all levels of the supply chain.

4.7.3 Ethical BioTrade verification system

UEBT members are committed to adopting Ethical BioTrade practices for all of their biodiversity-related

products. They establish company-wide management systems to gradually implement the Ethical BioTrade principles and criteria for all products that use native species, at all levels of the supply chain. Consequently members foster long-term relationships with their source countries, contribute to local development, ensure that benefits reach all of those involved and help preserve local ecosystems.

Company commitment is backed up by a third-party verification system that assesses companies' management systems and supply chain practices all the way to the source. Because UEBT acknowledges incremental progress rather than strict compliance, companies gain recognition for their efforts towards compliance with the Ethical BioTrade principles and criteria early on.

The verification framework is the tool used to analyse the conduct of a UEBT member. Members' activities are thus evaluated in comparison to the principles and criteria of Ethical BioTrade, in order to determine those parts in a member's operation that need to be addressed. As such, it is also the main tool to develop individual work plans that guide members towards compliance with the principles and criteria.

UEBT's verification framework stems from the seven principles and criteria developed by UNCTAD BioTrade. The framework is an international standard designed in accordance with the requirements for developing standards as stipulated by the World Trade Organization (WTO) and the International Social and Environmental Accreditation and Labelling Alliance (ISEAL). These requirements include the need to carry out consultations open to all stakeholders and decision-making mechanisms that consider the balance between different interest groups. Part of these requirements is the need to periodically review the standards.

As the Ethical BioTrade Verification Framework was specifically developed to advance the objectives of the CBD, it incorporates the three pillars of conservation of biodiversity, sustainable use, and the equitable sharing of benefits derived from the use of genetic resources. The Ethical BioTrade Verification Framework has built upon these and other international environmental and sustainable development objectives, elaborating indicators that are clearly defined and easy to appraise, yet remain reliable measures of the different criteria.

Accordingly, the Ethical BioTrade Verification Framework is thus applicable to any company that wishes to:

- Assess its conformity with the Ethical BioTrade principles and criteria;
- Develop work plans to advance and evaluate gradual compliance with the Ethical BioTrade principles and criteria;
- Improve the transparency and traceability of its supply chains;
- Assure itself that it is addressing any risks of working with native biodiversity; and
- Communicate its conformance with the Ethical BioTrade principles and criteria.

How does the verification system work?

When applying to join UEBT, a prospective member commits to putting Ethical BioTrade commitments into practice. Once approved by the membership committee, the applicant must undergo an independent third-party audit by a UEBT-approved organization within six months. This audit will check whether or not the minimum requirements have been met, and whether there are any gaps that exist between current practices and the Ethical BioTrade principles and criteria. For example, minimum requirements include not destroying natural habitats, conducting ethical business relations, economic sustainability and ensuring respect for human rights.

After the audit is passed, the applicant submits to UEBT a work plan that outlines its intended steps towards compliance with the verification framework. It is granted membership status once the audit report and work plan have been approved. Members must make a strong commitment to achieving compliance with the verification framework within five years. The Ethical BioTrade verification system is a business-to-business market differentiation tool, promoting shared responsibility of companies along the supply chain. It is not a certification system and no on-product label use is allowed.

In a certification system, such as the FSC, the control of sustainable management practices is done at the producer level, while a chain of custody certification assures that certified input – in the case of FSC, timber – moves from one stage of the supply chain to another without being mixed with non-certified inputs. The final product, which is manufactured with the certified input, can then carry an on-product declaration of compliance – e.g. an FSC label.

In the UEBT verification system, it is the member companies that are the subject of the verification. They are required to make sure that over time, all native biodiversity species they use comply with the verification

Figure 2. Logos of the Union for Ethical BioTrade

framework. This means that not only the company's own practices should be in line with the verification framework, but also that the native ingredients it uses are sourced in compliance with the Ethical BioTrade Verification Framework at all stages of the supply chain all the way from the producers. It is therefore companies (i.e. members) rather than products that can claim adherence to the Ethical BioTrade principles.

The system speaks about the companies, not the products. Through the use of the membership logo in their corporate communications, however, companies can gain acknowledgement for their efforts towards compliance with ethical sourcing practices.

Reducing costs of external verification

In order to reduce costs that any third-party verification system entails, UEBT seeks to reduce the burden of external verification in different ways. Its verification system relies on a combination of self-assessments and third-party audits, making the system less costly than a traditional labelling system. Moreover, member companies have five years to reach compliance with the Ethical BioTrade Verification Framework, so they can fit their Ethical BioTrade goals in with other business priorities and investment cycles. It is also important to note that not every supply chain needs to be audited, as a sample will suffice to make sure that the management system effectively translates the Ethical BioTrade principles and criteria in the field.

UEBT does not allow on-product claims of compliance. However, if member companies feel consumers require labels for some of their products, UEBT's cooperation arrangements with labelling schemes ensure that this can be done cost-effectively. For example, UEBT permits the use of auditors recognized by other verification systems, such as the FSC and Rainforest Alliance, to allow multiple verifications in one single audit. Finally, to further support the smaller players in the supply chain and encourage its members to pursue their initial commitment, UEBT launched the Ethical BioTrade Community Grant Programme in May 2009. These community grants can cover costs related to the design and full implementation of Ethical BioTrade practices, thereby supporting the deeper engagement of companies with local and indigenous communities in the ethical sourcing of biodiversity.

4.7.4 UEBT as an incentive measure – private sector views

Applications for membership often highlight the Ethical BioTrade Verification Framework and its acknowledgement and distinction of ethical sourcing practices as a key driver for engagement in UEBT. As a recent applicant noted:

> "The Union for Ethical BioTrade highlights the practices we are implementing in line with the CBD. Our motivation for joining the organization is based on the fact that our work towards ethical sourcing of natural ingredients is not captured within other certification mechanisms… In addition, our clients are asking for stronger assurances regarding these efforts. Of the plethora of existing approaches, we consider that the Union for Ethical BioTrade best responds to our needs… it brings credibility to our efforts so far and provides a solid basis for continuous improvement."

Other aspects of the market differentiation provided by the UEBT that have been emphasized by applicants include:

- Demonstrating commitment and work on sustainable sourcing practices;
- Strengthening links with existing clients;
- Offering unique products and approaches to prospective clients;
- Consolidating existing markets and accessing new ones;
- Enabling higher prices and premiums;
- Gaining reputation as a company working sustainably;
- Accessing partners, distributors and retailers with equal values;
- Increasing credibility of sustainable development strategies, particularly regarding clients;
- Differentiation from competitors;
- Communication to clients on business practices that help to conserve biodiversity;
- Evaluating suppliers' practices and identifying any gaps in sustainable sourcing;

- Benefitting from the credibility of an internationally recognized organization;
- Complying and moreover anticipating local and international rules.

The importance of market recognition of ethical sourcing of biodiversity is also clear in the rising use of the UEBT membership as a signature in members' corporate communications. Members are encouraged to use the membership logo in their communication materials such as: websites, annual reports, stationery, product inserts and advertising. The membership logo shows that companies are actively working to bring their practices in line with the Ethical BioTrade principles and criteria as an important tool for market differentiation.

4.7.5 Conclusion

Growing consumer awareness of biodiversity means increasing expectations for companies working with natural ingredients. The UEBT constitutes a pioneering approach of using market differentiation as an incentive for ethical sourcing practices. UEBT members obtain acknowledgement of their efforts towards Ethical BioTrade, and become part of a network that offers guidance and promotion in relation to these efforts. As attested by the experiences of UEBT and its members, market differentiation thus proves to be a strong incentive for the engagement of the private sector in the conservation of biodiversity.

4.8 Funbio[57, 58]

4.8.1 Overview

Funbio (the Brazilian Biodiversity Fund) is a not-for-profit, non-governmental organization created in 1996. It functions as an innovative funding mechanism to provide resources for conserving biodiversity and to develop strategies to facilitate the implementation of the CBD in Brazil.

While Funbio receives funds from a variety of sources, including an initial US$ 20 million grant from the GEF, one of Funbio's early goals was to forge partnerships with the private sector as a means of promoting the sustainable use of biodiversity. The GEF grant was conditional on the establishment of an efficient and transparent promotion mechanism capable of attracting the private sector as a partner in the Fund's objectives. In order to ensure long-term activities, the grant has to be complemented by fundraising. Hence, Funbio can receive donations from companies and other institutions interested in associating themselves with activities that give regard to the conservation and sustainable use of Brazilian biodiversity.

Funbio has established itself as a means of support for conservation and sustainable use of biodiversity projects. It has become skilled at managing financial assets and in the creation and support of funding programmes. The Fund also oversees and provides assistance to projects in the private sector and hence generates financial incentives for the engagement of the private sector in activities respecting the conservation and sustainable use of biodiversity. For instance in 2004, Funbio started to be involved in supporting the implementation of BioTrade activities in Brazil, particularly in the natural ingredients value chain. Furthermore, it promoted the engagement of Brazilian private companies with the BioTrade principles and criteria. Jointly with UNCTAD, Andean BioTrade partners and other organizations, it organized the workshop session on "Verifying Biodiversity Trade" at CBD CoP-8/37th Global Biodiversity Forum in 2006.

Despite focussing mainly on the private sector initially, Funbio's functions have evolved into being a platform between private and public actors. In addition, the Fund was asked by international donors to provide logistical, financial and management support for the largest and most ambitious programme of protection of tropical forests in the world, the Amazon Region Protected Areas (ARPA) programme (ARPA). ARPA in return offered Funbio a huge opportunity to learn new skills and improve its internal management.

After a decade's experience, Funbio decided to redirect and broaden its focus to a regional scale with the aim of coordinating environmental partners in priority landscapes for biodiversity conservation working closely with the private sector. In 2009, this new strategy started generating positive results and indicated a clear path to strengthening its work with the private sector. This report will discuss Funbio's learning processes and analyse how services provided by Funbio generate not only financial incentives but also social incentives, especially through capacity building and through the strengthening of networks.

4.8.2 Funbio's learning process

The first major task for Funbio after its creation was the fundraising of US$ 5 million from within the Brazilian private sector. At that point, no one had a clear idea of the level of demand, if any, within the private sector for environmental projects in Brazil, not to mention that Brazilian legislation lacks any kind of fiscal incentive for the private sector to engage in environ-

mental activities, which consequently creates difficulties for engagement.

At the outset, Funbio first made a call for proposals to finance projects in the following sectors:
- Sustainable use of natural forests;
- Natural ecosystems conservation in private areas;
- Sustainable use of fisheries;
- Agriculture and biodiversity; and
- Protected areas management.

By the end of 1996, Funbio had received 1,083 proposals, much more than what was expected. After careful consideration, Funbio chose ten proposals to fund, using all the financial resources allocated for this first call.

Important lessons learned from this first call included:
- The enormous demand for financial resources;
- The large number of organizations ready and eager to implement projects;
- Calls for proposals should be very theme-specific; and
- The private for-profit sector was virtually absent.

In the second call for proposals in 1998, Funbio tried a different approach. Using the lessons learned from its previous experience, Funbio narrowed the criteria. A specific innovation inserted into biodiversity finance in Brazil was a mandatory match of funds – in other words, Funbio would finance only up to 50 per cent of each project. This strategy was adopted to raise Funbio's US$ 5 million goal. Again the response was greater than anticipated, resulting in the raising of US$ 6.5 million.

The main objective of this new Partnership Funds Program was to raise funds to finance projects of common interest in the following areas:
- direct and/or indirect use of genetic and biological resources; and
- creation or implementation of conservation units.

The Partnership Funds Program attracted NGOs that already had funding from other sources. Together with Funbio, they scaled up their projects to new levels. In addition, this call for proposals attracted new companies in Brazil such as:
- CSN (steel) which managed a private protected area inside their plant area;
- CEMIG (energy) which developed an innovative management scheme for fisheries that reproduce upstream which would otherwise be trapped by a hydroelectric dam; and
- KPPF (pulp and paper) which associated the production of phytotherapics with their plantations.

Funbio's third call for proposals in 2000 – the Sustainable Production Support Program (PAPS) – kept the same themes, but focused on small-scale producers. The idea here was not to have a wider impact by leveraging financial resources, but rather to support for-profit projects that could, some years later, pay back what they had received. Those resources would then be used to re-invest in similar projects creating a revolving fund and widening the impact of sustainable production.

By this time, it was also clear that projects without a clear plan to achieve financial sustainability had a tendency to perish after the financial support ceased. This was particularly true for projects implemented by grassroots NGOs. So, in order to have lasting projects and lasting results for biodiversity, financial sustainability became a key factor that PAPS tried to address.

To increase the chances of being successful, PAPS also improved the selection process by dividing it into two steps. The first step was a standard project selection based mainly on the biodiversity impacts projects could achieve. Projects selected at this stage were eligible to receive a small grant to develop a business plan for their sustainable production business. The second selection step was to choose from those selected the best, most feasible business plans/projects to finance – i.e. the ones that could pay back the resources invested and keep functioning. These were the first business plans focusing on environmental issues in Brazil, and were a real breakthrough. Today, the idea of having this kind of instrument working for biodiversity conservation is well established.

The PAPS scheme was only partially successful because the investment was not paid back. None of the projects actually succeeded in fully implementing the business plan. In some cases, the business plans were not detailed enough and left out important aspects regarding business goals. However, PAPS projects proved more resilient to economic stresses and the percentage of projects that kept functioning after Funbio's initial support was much greater than with the other calls for proposals.

4.8.3 Scaling up

After financing many projects all over the country, Funbio realized that most of the small-scale sustainable use projects tended to fail over the long term. The reasons are still unclear, but it seems that macroeconomic disturbances, lack of managerial skills, a very intricate bureaucracy/legislation and high taxes are key elements impacting on all businesses in Bra-

zil. This meant that Funbio's impact on biodiversity was only ephemeral and at a very restricted scale, although in all cases, some institutional strengthening and improved sustainability were observed. If Funbio wanted to have an important impact on biodiversity it would have to find new ways to implement projects.

The remedy to this challenge was scaling up the size and complexity of projects via Integrated Conservation and Sustainable Use Projects (PICUS). Instead of projects with very restricted impacts, Funbio started to work with larger areas and territories where sustainability would not be the goal of one isolated project but from a portfolio of projects, with different but interrelated agendas – climate change, fauna conservation, sustainable use, forestry, protected areas, and so on. The idea was that those agendas integrated in the same geographical space would create a virtuous cycle where sustainability and the maintenance of environmental services provided were maintained in the long run. Each project would support the other and vice versa.

In 2004, Funbio made a call for proposals under the PICUS model. It selected proposals that would be detailed later by way of a two-step selection process in order to receive the grants. However, in the second step of the selection, it became clear that the financial sustainability of the projects was not guaranteed. Proponents did not have to give any assurance that they would raise sufficient resources to match Funbio's contribution. As a result, Funbio made a very difficult decision to cancel the call for proposals, realizing that if the projects were implemented they would not achieve sustainability in the long run. This decision was hard and greatly criticized by project proponents.

When addressing the questions raised by the cancellation of PICUS, Funbio made two important self-assessments: (i) scaling up projects was much more difficult than initially envisioned and (ii) financial sustainability would not be feasible from other NGO or multilateral agencies.

In 2006–2007, Funbio formulated a comprehensive strategic plan and decided that it would keep pursuing the scaling up of projects and also that it would re-orient itself towards the private sector. Funbio's approach was anchored in the fact that the private sector was willing to include environment and biodiversity projects and indicators in their businesses, due to increasing pressure from public opinion. Up to 2009, Funbio engaged in three experiences:

- **Sustainable Juruti Fund.** With Alcoa's new mining plant in the Amazon region, Funbio designed a private fund. The fund was financed by Alcoa but with independent governance based on local stakeholders who decided how resources were used. This fund was intended to mitigate the social and environmental impacts not only from the mine itself but also from the externalities that it would create in the region.
- **Mphanda Knwa, Mozambique.** This inaugurated Funbio's first "off-shore" operation. It was a territory approach with stakeholder identification in Mozambique, for a Brazilian company that was building a hydroelectric dam called Mphanda Knwa. The interest was similar to Alcoa's case – to mitigate impacts through working closely with local stakeholders.
- **Environmental compensation.** Thirdly, Funbio developed a model of using and implementing resources from environmental compensation, a Brazilian legal mechanism designed to mitigate impacts from the private sector by investing in support to protected areas. This mechanism received a first proposal of US$ 33 million from one large energy generation project in the Amazon. The potential was very impressive and the private sector seemed eager for such a mechanism. Although it was not voluntary, it indicated that the private sector was willing to take part in the conservation process and be more than a "tax payer".

Having the lessons learned from PICUS in mind, Funbio and the Brazilian Environmental Ministry (MMA) negotiated a new GEF project called Probio II between 2006 and 2007, which had the objective to mainstream biodiversity in productive landscapes. Funbio's role was to engage the private sector, while working closely with the public sector, keeping in mind the important lessons learned from ARPA (which involves several government agencies).

Probio II used the same logic as PICUS – i.e. large-scale projects focused on multiple environmental agendas in the same territory aiming at a long-term sustainable impact. The difference from PICUS was that Probio II had a clear focus on private sector leverage (a ratio of 3:1) of Funbio's resources and had created an "opportunity fund" to finance different projects in the same territory. This was perhaps the answer to the lack of assurance Funbio observed in PICUS regarding financial resources.

Probio II started at the end of 2007 and Funbio was

at the time already negotiating with companies that were showing great interest in this kind of approach. In the proceeding years this approach would be Funbio's focus in addressing the private sector. For example, Funbio negotiated the possibility of strengthening the work in Juruti with Alcoa, incorporating it with lake management and forestry.

Funbio also worked with the International Finance Corporation's (IFC) Biodiversity Agriculture Commodities Programme (BACP). Its focus was on biodiversity mainstreaming in commodities and, in the Brazilian case, for soya and sugar cane. Funbio participated by way of selecting projects to implement for soya crops. As these sectors have a large impact on the territory and on biodiversity, it will be important if projects addressing the issues can show a different path of development – more sustainable and also more interesting for the private sector to engage with.

4.8.4 Organizing small-scale business

Although, working with big companies is practical when large-scale projects are in place, small-scale sustainable production is important in providing different options for people living in economic stress and close to important biodiversity areas, because they are more likely to put pressure on natural resources (for subsistence or via illegal activities such as logging).

Funbio has learned from the ARPA experience that in some places such as small municipalities in the Amazon region, project expenses made close to the protected areas create a set of service providers that start to see these protected areas as a revenue source. Therefore, they do not need to put pressure on natural resources and are much less likely to engage in illegal activities. Currently, Funbio is studying this linkage and it may be possible to start a new line of work to prepare small businesses in these municipalities to provide services to projects financed by Funbio. The idea behind this is that project revenues made locally create a positive externality since the local economy will grow and benefit more from biodiversity conservation projects.

The problem is that local economies usually consist of very informal businesses, which lack effective business management. Hence, this approach would also have to work on business formalization and management strengthening. If this works, it will be possible to create a "green-driven economy" even for services that have nothing to do with sustainability itself. In the long run, the objective is to change the way the local economy sees environmental projects from development obstacles to development opportunities.

4.8.5 Incentive measures

The first aim of Funbio is to provide innovative financial mechanisms for biodiversity conservation, especially to generate incentives for the engagement of the private sector in activities concerning the conservation and sustainable use of biodiversity. However, to fulfil its mission, Funbio also integrates the following tasks aimed at creating innovative solutions and strengthening networks:

- Identifying priority investment opportunities and needs;
- Seeking and investing strategic resources through programmes;
- Developing economic and financial methods; and
- Fostering local capacity building.

Hence, Funbio generates not only financial incentives but social incentives as well.

Social incentives

Services provided by Funbio are not limited to financial support, but it also aims to enhance the human and social capital of clients, especially through local capacity building and networking. For instance, Probio II encourages companies to adopt principles and practices that comply with the sustainable use of biodiversity. Within the project, Funbio supports the adoption of management best practices and models aims at reducing the environmental impact along the productive chain. Owing to this support, the skills, knowledge and abilities of private actors in sustainable practices are enhanced.

Furthermore, Funbio acting as a liaison between the private and public sector has created a supportive and cohesive environment for actors willing to adopt sustainable practices. In 2006, Funbio launched the "Sustainable Dialogue" initiative sponsored by Alcoa, which aimed at discussing topics related to the engagement of private actors in sustainable development and biodiversity conservation. This initiative created a platform where various actors – government, the civil society and academia – can participate and exchange experiences and opinions.

The first Sustainable Dialogue was held in June 2007 and it focused on biodiversity and stakeholder engagement. It looked at issues such as "how the search for sustainability can contribute towards stakeholder relationships and companies' governance and brand-

ing processes." The third event focused on "global warming and biodiversity". Besides the topics defined for each event, issues such as international sustainability standards, corporate image and the economic consequences of adopting sustainable practices were also addressed.[59]

Funbio considers the coordination between institutions working with natural resources conservation as fundamental. The Fund has therefore increased networking efforts since 2007 in order to participate in discussions on innovating financial mechanisms for biodiversity conservation and sharing of experiences and lessons learned. For example, Funbio took over the leadership of the Latin American and Caribbean Network of Environmental Funds (RedLAC).[60] Funbio also hosts two other networks: the Brazilian Environmental Funds Network and the Conservation Finance Alliance.

Financial incentives

Since its operation, Funbio has provided financial support to over sixty projects across Brazil. In total, close to US$ 110 million were invested in conservation projects:[61]

- US$ 16.2 million for cooperatives, community based associations, universities, companies and NGOs, which have developed biodiversity conservation projects including enhancing production facilities, access to markets, value aggregation by product differentiation, business plans and, more recently, microcredit;
- US$ 36 million for assets and services for protected areas in the Amazon; and
- US$ 17.8 million for maintaining protected areas supported by the public project ARPA.

Funbio identifies needs and opportunities for conservation investment, creates mechanisms to supply the necessary financial resources to meet the conservation investment priorities and directs funds to strengthen conservation programmes. It acts as a "financial middle agent, transforming investments into strategic capital directed towards conservation."[62]

4.8.6 Lessons learned

Throughout its learning process, Funbio has observed challenges faced by private actors and developed a financially viable approach for the allocation of loans – an approach aimed at generating the greatest impact possible in terms of scope and length on biodiversity conservation.

Small-scale projects face various and continuing challenges and Funbio observed that they tended to fail in the long run. These challenges include macroeconomic disturbances, lack of effective management systems, a very intricate bureaucracy/legislation and high taxes. It also appeared that projects lacking a clear plan to achieve financial sustainability had a tendency to perish once the financial support of Funbio ceased. Considering that by helping such projects, Funbio's impact on biodiversity would only be ephemeral and restricted to a small scale, Funbio then decided to focus on larger projects.

However, Funbio's approach is evolving over time, creating opportunities for small businesses. Funbio still considers that small-scale sustainable production is important to provide different options for people living in economic stress and close to important biodiversity areas, because they are more likely to put pressure on natural resources. The Fund is currently analysing the opportunities it could create for small businesses.

Funbio's experience with the private sector began many years ago and since then, the importance of environmental issues within the sector has changed for most of the larger companies. Working with the private sector today involves many aspects – from developing better ways of compliance to additional voluntary biodiversity offsetting. Since its creation, Funbio has tried different and innovative approaches including resource leveraging, business planning, and, building up enough knowledge and experience, then changing its course to support more complex projects which impact larger areas.

So far, the strategy is effective and the new approaches in the pipeline include encouraging the association of local economies in new development paths for more sustainable services and products, and also promoting services and products that are needed for on-site project implementation. These approaches together may link big businesses with small-scale local economies all working to create conditions for the implementation of multiple environmental agendas in the same territories. Funbio believes that this is the way to achieve bigger and more sustainable biodiversity impacts.

Funbio also believes that collaboration between the various actors is essential to optimize impacts on biodiversity. Funbio has therefore developed various initiatives such as the Sustainable Dialogue programme and it also holds the presidency of RedLAC. Through the strengthening of social capital, Funbio generates social incentives for the engagement of private actors in activities that give high regard to the conservation and sustainable use of biodiversity.

5. BIOTRADE INCENTIVE MEASURES

As illustrated by the case studies in this informational paper in support of trade as a positive incentive measure for biodiversity conservation, the UNCTAD BioTrade Initiative and its partners have been addressing the policy environment, supply capacity and market access through an intervention strategy that targets different problems at different levels.[63]

The first step in any such process has always been to ensure that prospective BioTrade businesses are viable. In this respect, there is a need to analyze the market potential for particular BioTrade products and services. As defined in the BioTrade Criterion 4.1, BioTrade focuses on products for which "potential markets should exist".

In today's markets, there is an increasing demand for natural sustainable foods and medicinal and cosmetic products, particularly derived from environmentally responsible and socially conscious practices. This market is especially strong in developed countries, such as Germany and the Netherlands and has actually been growing over the last decade. In the EU, for example, the CBI (Centre for the Promotion of Imports from developing countries) reports an annual growth of approximately 20 per cent for the natural cosmetics markets in the last two years. In 2008, it is expected to have exceeded € 2.1 billion.[64]

Once it is clear that there is indeed a market potential for a BioTrade good or service, then the BioTrade Initiative and partners engage through a variety of approaches to promote sustainable and responsible trade in biological resources and in so doing, strengthen capacities to conserve biodiversity. Together, these approaches can be considered as a "tool kit" of BioTrade incentive measures.

5.1 Market incentives

The strong market demand for organic products is now widely known. Regarding organic foods, consumers are interested in health aspects, ethics, ecological integrity, food safety and better quality (e.g. taste). Moreover, buying organic or sustainable products evokes the feeling of doing something good.[65] A study of the Swiss market, for example, reveals that environmental awareness and animal welfare are further reasons for buying sustainable products.[66] As consumers are increasing their demand for natural, healthy, "green" and socially responsible products, opportunities are emerging for companies that fulfil BioTrade principles and criteria.[67] In short, consumer demand today is a tangible market incentive for BioTrade.

Nevertheless, even if there is an increasing market potential for BioTrade products and services, there remain challenges that private actors must face in order to capture this potential. Hence, market information, strategic partnerships, market access strategies and other tools are being developed in order to support private actors in accessing niche BioTrade markets that value sustainable practices. These are the practical, on-the-ground market incentives that are being promoted within the BioTrade network as highlighted especially in the case studies of the PhytoTrade Africa, the Union for Ethical BioTrade and the partnership between Nativa and Cosmetic Valley.

5.1.1 Market access support

The UNCTAD BioTrade Initiative and its partners, through their knowledge of niche markets for selected BioTrade value chains, are able to provide guidance, information, contacts and services to companies wanting to gain access, maintain or expand their market share in local, regional and international markets. For example, Nativa has developed an information-based partnership with Cosmetic Valley enhancing the access of BioTrade products from South America to Europe.

Enabling policy environment for BioTrade businesses

Companies working in BioTrade face challenges such as NTBs (non-tariff barriers) that hinder access to markets. In this respect, the BioTrade Initiative provides a platform for private and public actors at the local, national and international levels to liaise and address NTB challenges. Through this platform, challenges to accessing markets are brought to the attention of policy makers and discussions are undertaken to support the formulation of policies enabling the sustainable trade of BioTrade products and services.

For example, work has been carried out on contributing to a fairer treatment from traditional/BioTrade foods under the EU Novel Foods Regulation (EC No. 258/97). This work has brought together, governments, universities, specialized consulting firms, SMEs, MNCs (multinational corporations), scientific communities, multilateral organizations, regional organizations, finance institutions, donor agencies, civil

society organizations, law firms and business associations. It has undertaken a research agenda that has helped to guide policy-related discussions. At the same time – through bilateral discussions and regional and multilateral forums – the BioTrade Initiative has engaged government representatives and negotiators in various consultative processes. The work of PhytoTrade Africa on the baobab is also particularly noteworthy in this respect.

In so doing, this BioTrade policy platform generates market incentives by addressing challenges in policy-making and access to markets. Furthermore, it also generates a social incentive through creating networks across value chains among various BioTrade stakeholders.

Available and reliable market information

The lack of access to available and reliable information in a timely manner can be a major constraint for business and non-public actors in general. Efforts of BioTrade partners in compiling and analysing information for selected markets support businesses in their decision-making processes. This information has been a useful tool for BioTrade companies to establish objectives, strategies and plans, as well as identify key partners and potential buyers and prioritize products with the higher market potential.

Some of the information generated within BioTrade networks includes:

- **General market surveys.** These surveys provide general market trends information relevant to BioTrade, including information on production, demand, imports, exports, prices and opportunities for exporters from developing countries.[68] This information can help exporters to understand the overall characteristics of niche markets in a certain country or region.
- **Market briefs.** They provide a concise overview of the market for specific products. They contain information on market developments and trade statistics.
- **Newsletters, concepts of experts and specialized publications.** These informal documents are distributed to BioTrade partners providing market trends and discussing issues affecting the BioTrade selected value chains.
- **Specific trade information platforms.** Electronic platforms for selected sectors or BioTrade companies have been established as a "one-stop shopping" centre for members to access available market information, technical specifications or other types of information that support businesses in accessing new markets or expanding current ones. For instance, the Colombian National BioTrade Programme created OBIO (the National BioTrade Observatory)[69] which publishes analytical information on promising markets, BioTrade companies and products from Colombia's biodiversity.

Contacts in niche markets

SMEs in general have difficulties in learning about and contacting potential buyers from other countries or regions. The situation is even worse for BioTrade SMEs attempting to connect to foreign niche markets interested in environmentally friendly and socially responsible practices. The support given by BioTrade – through trade fair participation, organization of buyer-seller missions and B2B programmes – have been a major tool for companies to overcome this barrier and establish contacts with potential buyers interested in their BioTrade products.

Regarding participation in trade fairs, BioTrade companies are exposed to how the markets function and their requirements, the current competition as well as market trends, product innovation and available technology. Examples of the benefits of trade fair participation include the development of better packaging, certifications such as organic or fairtrade, quality improvements through acquisition or adaptation of equipment, among others.

Furthermore, as relationships between potential buyers and sellers are reinforced by for example, business partnerships, trade fair participation also generates social incentives.

As highlighted in the case studies, an example of a BioTrade business partnership is the one that has been established between the Colombian association Nativa and the French association Cosmetic Valley. This partnership has expanded access to markets for BioTrade products from Nativa and also provided a complementary product offer for Cosmetic Valley, while developing the capacity of their members through joint research and development projects.

The facilitation of access to niche markets for BioTrade products and services, through enhancing dialogue between various stakeholders on issues such as NTBs, market information, participation in trade fairs and B2B partnerships, generates practical market incentives for biodiversity conservation and sustainable use of biological resources.

5.1.2 Market differentiation

Differentiating BioTrade products and services within the market is critical to adequately positioning these products as opportunities for sustainable development and incentives for conservation. Companies aim to be recognized in the market for their efforts in adopting sustainable practices, and therefore UNCTAD and its partners have considered concrete ways to differentiate BioTrade products and services.

They have organized workshops, creating a dialogue platform between various stakeholders including businesses and public actors specialized in intellectual property rights. Various possibilities have been considered. On the one hand, a verification framework for BioTrade products has been developed as well as potential bridges are being explored with existing certification schemes. On the other hand, distinctive signs, such as the "Appellation of Origin" and collective trademarks have also been assessed.

Verification and certification

To differentiate products and services in the markets, the Ethical BioTrade Verification Framework provides a tool for companies to develop work plans and validate progress towards their compliance with BioTrade principles and criteria. This framework also enhances market recognition of the ethical, environmental and quality standards of BioTrade products and services. The verification framework can also be used in B2B relations, rather than a labelling scheme for product claims of compliance.

Given the BioTrade experience in supporting the supply chain of natural ingredients, this sector was selected as one of the priorities for the development of a verification framework derived from the BioTrade principles and criteria. The Ethical BioTrade Verification Framework for native natural ingredients was developed in 2007. As discussed further in the case studies, it is currently being implemented by UEBT at a B2B level, as well as by BioTrade country programmes to develop and implement their activities.

Though still very new, the UEBT has already succeeded in bringing together private sector companies across the value chain who are seeking ways to verify their commitment to sustainable and responsible BioTrade. In so doing, the pioneering work of the UEBT is demonstrating how a multilateral initiative in support of a multilateral environmental agreement can be mainstreamed into the private sector in a way that makes good sense for both business and biodiversity.

Distinctive signs

Distinctive signs, such as geographical indications, are potential tools to differentiate BioTrade products in markets.[70] UNCTAD and its partners have supported the development of studies to identify the unique characteristics of some BioTrade products in relation to their geographical origin, production processes and certain qualities or reputation that can be attributed essentially to their provenance. Geographical indications are also referred to as "Appellation of Origin". Collective trademarks have been considered as important marketing tools for producers and BioTrade companies. They can be used to generate and consolidate niche markets, often with a premium price.

Geographical indications protect the identity and quality standards of BioTrade products as well as preserving and enhancing their reputation and market share, thus maximizing the economic incentives for BioTrade activities. Through the recognition of the physical and environmental factors as well as the traditional practices linked to the product, geographical indications also have a potential to promote the sustainable use of the relevant components of biodiversity and protect the structures and knowledge that have maintained them.

Nevertheless, geographical indications have costs and limitations that must also be considered in order to determine their most useful application in relation to BioTrade products. In this respect, feasibility studies were developed with the support of UNCTAD and national BioTrade programmes in Colombia, Peru and Ecuador for the species borojó (*Alibertia patinoi*), maca *(Lepidium peruvianum Chacon)* and cocoa Arriba flavour (*Theobroma cacao L.*), respectively.

The use of collective trademarks has also been explored. The strategy under collective trademarks is to develop a common concept and image identifying the SMEs or the products they make. This can include quality standards that have to be implemented in order to use the mark. Companies can then own their own logo. The trademark is the property of the persons who applied for it and not the property of the state, as is the case with the "Appellation of Origin".

As highlighted in the case studies, trademarks can play a particularly critical role for small, rural BioTrade associations such as Jambi Kiwa in Ecuador.

5.2 Social incentives

As already discussed, social incentives focus on the

enhancement of skills, knowledge and abilities which are improved through access to training and technologies, as well as to the development of a supportive and cohesive environment around actors pursuing shared goals and adopting sustainable practices. In addition to market incentives, BioTrade provides an array of social incentives.

5.2.1 Strengthen skills, knowledge and abilities

The BioTrade Initiative and its partners provide guidance and technical assistance to enhance local capacities for developing sustainable practices. These are designed with a commercial value chain approach, as well as an ecosystem and adaptive management approach which are explained as follows:

- The **ecosystem approach** is based on a holistic vision integrating ecological and social issues, as well as the interactions and processes that are involved in a productive system. In practice, the planning of productive processes related to BioTrade initiatives is undertaken according to the ecosystem approach. This guarantees that the initiatives will be environmentally and socially responsible with regard to their impact on species, habitats and local communities.[71]
- **Adaptive management** allows for the implementation of corrective measures in systems on an ongoing basis, based on a process of continued monitoring. In the case of management of biological resources, adaptive management is different from the monitoring of the impacts (environmental, social and economic) on the ecosystems and populations resulting from the use of biological resources.[72]

In the context of BioTrade, adaptive management contributes to the implementation of sustainable practices, the identification of impacts on species and ecosystems and the continual improvement of BioTrade initiatives.[73] In order to guide BioTrade actors on sustainable species' management, in 2009, the UNCTAD BioTrade Initiative published the *Guidelines for the Development and Implementation of Management Plans for Wild-collected Plant Species used by Organizations Working with Natural Ingredients*. These guidelines are based on experiences in the Plurinational State of Bolivia, Brazil, Colombia, Ecuador, Peru, Uganda and Viet Nam. These countries use a participatory approach that facilitates the exchange of information among collectors, intermediaries and companies.[74]

These guidelines benefit BioTrade actors as they provide cost effective methodologies for the compliance of BioTrade principles and criteria, the implementation of good agricultural practices defined by the WHO (World Health Organization) and the improvement of quality standards required along the supply chain. National programmes also provide technical assistance to organizations for the development of management plans for specific species. Furthermore, training is organized to enhance individual skills and abilities – i.e. human capital – for the adoption of sustainable practices.

Non-public actors, and companies in particular, have also seen BioTrade as a business tool to enhance their internal control systems guaranteeing not only the sustainable use of the species harvested or collected but also improving their documentation and traceability which are needed for accessing international markets.

Through technical assistance, BioTrade organizations improve their sustainable practices as well as the quality of their products and hence provide value-added products. This also enhances the negotiating power of BioTrade organizations in local, national and international markets. Hence, the improvement of human capital does not only act as a social incentive but also allows increased access to international markets for BioTrade products.

All of the case studies highlight the critical importance of strengthening skills and knowledge. However, the case of TreeCrops programme in Malawi is perhaps one of the most striking because it covers such a range of skills and knowledge needed from on-the-ground management of the biodiversity resource to opening up important international markets. The BioTrade approach leads to a development of skills and knowledge at several levels in order to access markets, increase values and ensure sustainability.

5.2.2 Strengthening social capital

The BioTrade Initiative and its partners provide support as well for strengthen "social capital" which is understood as the social structure enabling people to coordinate action in order to achieve desired goals (here the sustainable trade of biodiversity products and services). Social capital is enhanced through the creation of BioTrade networks, the strengthening of BioTrade value chains and the creation of sector associations.

Creation of BioTrade networks

Through the creation of BioTrade networks which link national, regional and international organizations across value chains, BioTrade commerce can be implemented in an integrated manner. The different

private sector actors interact regularly, for instance through workshops and meetings. This structure strengthens the social capital of BioTrade actors by facilitating the sharing of experiences and the achievement of common objectives such as the promotion of an enabling environment for BioTrade products.

An example discussed earlier was the platform created in order to support the adoption of a development friendly regulation for novel foods. Regional workshops were organized in Latin America and in Africa which brought together different stakeholders involved in BioTrade. These workshops formulated recommendations to policy makers to contribute to a fairer treatment from traditional foods, based on their experiences.

Other cases of the development of BioTrade networks include the unique partnership between Nativa and Cosmetic Valley – which is essentially a partnership of networks. Also, UEBT is providing new insights on the development of international networks across value chains.

Strengthening BioTrade value chains

In order to provide assistance for the creation of a cohesive social structure for selected BioTrade products, the BioTrade Initiative has adopted the value chain approach. The UNCTAD BioTrade Initiative sees the strengthening of value chains as a critical element in facilitating the implementation of good practices related to the sustainable use and conservation of biodiversity and in promoting the equitable sharing of environmental, social and economic benefits among value chain actors.[75]

The strengthening of value chains helps to facilitate the coordination between the different actors and to increase competitiveness in the sector. For example, BioTrade Criterion 3.1 emphasizes the importance of interaction between value chain actors and the engagement of all of them. This especially allows actors to assess their contribution to value creation and provides them with a solid footing for negotiating an adequate price and the equitable sharing of other monetary and non-monetary benefits.

BioTrade partners provide technical assistance to strengthen the value chain of BioTrade products. For instance, the UNCTAD BioTrade Initiative has set out a methodology based on experiences from BioTrade national programmes operating in the Plurinational State of Bolivia, Colombia, Costa Rica, Ecuador, Peru and Uganda, aimed at supporting value chains of BioTrade products – *Guidelines for a Methodology to Support Value Chains for BioTrade Products* (2009).

The methodology includes the mapping of value chain actors. The different actors in a value chain are characterized, their problems in accessing current and potential markets are identified and solutions to these problems are sought. Focused on the strengthening of relationships between different actors all along the value chain of BioTrade products, the value chain approach enhances the social capital of BioTrade private actors. Each one of the steps of the value chain methodology consists of activities that lead to the achievement of tangible results. This is reflected in Figure 3[76] showing the support processes within BioTrade value chains.

From the case studies, the strengthening of value chains is particularly evident in the case study of PhytoTrade Africa which has succeeded in linking remote BioTrade suppliers to developed markets in Europe and North America. This has required a strategic approach to identifying which BioTrade products to develop for which markets and to addressing the array of challenges and opportunities along the value chain.

The case study of *Caiman yacare* in the Plurinational State of Bolivia also highlights how the implementation of the value chain approach has allowed the generation of confidence in relationships between value chain actors as well as the design of management plans coherent with local realities. As a result, a cohesive and supportive environment for sustainable trade of *Caiman yacare* was developed.

Sector associations

Another interesting approach to strengthening "social capital" is the creation of sector associations. The BioTrade Initiative and its partners have supported the development and/or the strengthening of sector associations such as PhytoTrade Africa and Nativa.

The UNCTAD BioTrade Initiative and its partners supported PhytoTrade Africa in strengthening a viable and enduring natural products industry in southern Africa based on natural resources accessible to poor rural producers. The existence of PhytoTrade Africa permits the development of a supportive and cohesive structure for the natural product industry in southern Africa. Owing to the strengthening of a network between value chain actors and to the services provided to its members, PhytoTrade Africa acts as an incentive measure for the engagement of southern African non-public actors (businesses, NGOs) in sustainable activities. More information is available in the PhytoTrade Africa case study above.

The UNCTAD BioTrade Initiative and its partners also support Nativa, the BioTrade products and ingredients Andean-Amazonian trade association. The creation of Nativa aims to develop a cohesive sector for natural ingredients for the cosmetics, pharmaceutics and food industries, based on native products from the Andean and Amazon region that comply with BioTrade principles and criteria. The fair and equitable sharing of benefits as well as the respect for indigenous communities rights is essential to the organization of value chains. Through the network created by Nativa and its services, the sector association acts as an incentive measure to engage non-public actors in the conservation and sustainable use of biodiversity. Furthermore, by working together, businesses can gain greater capacity and facilitate access of their products on international markets. Therefore, the creation of the trade association also acts as a market incentive for the engagement of private actors in sustainable practices.

5.3 Financial incentives

The BioTrade Initiative, as well as adherence to the BioTrade principles, may be considered a "financial incentive" which can generate access to financial resources needed to develop sustainable businesses. Moreover, the initiative itself often facilitates the mobilization of funds at the national level and to date has managed to leverage significant funds.[77] Such funding for the implementation of national and regional BioTrade programmes is normally obtained through public actors.

In addition, as highlighted in the case studies, private BioTrade funds have been created to facilitate access to finance for non-public actors engaged in the conservation and sustainable use of biodiversity. This includes the potential for foreign direct investment in BioTrade enterprises.

Directly focused on financing BioTrade companies, the Fondo Biocomercio has provided funds to enable these businesses to develop their products and access markets. By strictly adhering to the BioTrade principles, as noted in the case study, this Fund has used finance as a powerful driver to develop the BioTrade sector in Colombia.

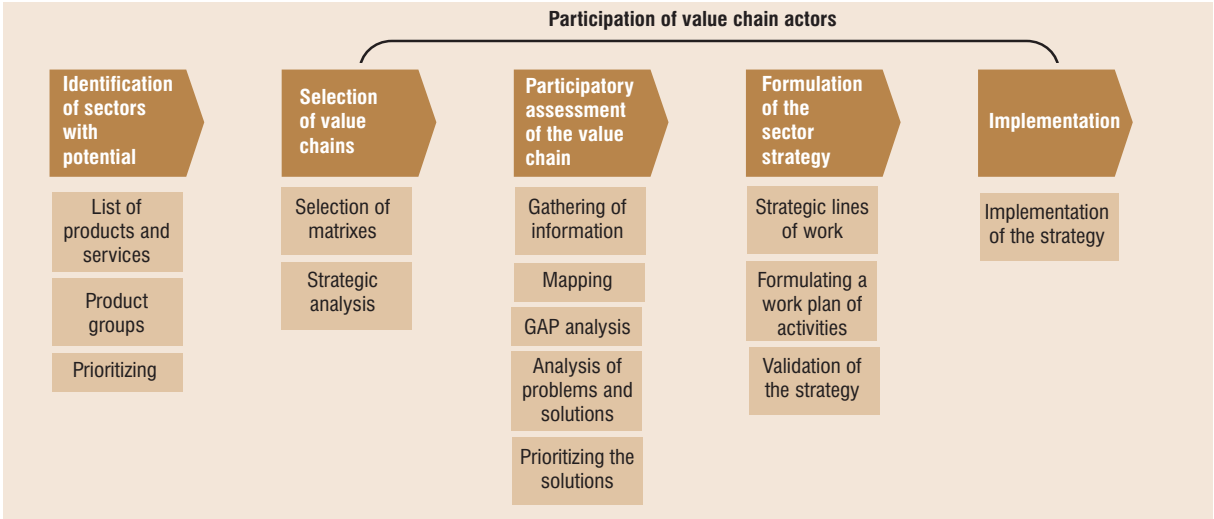
On a much larger scale, Funbio has also developed innovative financial packages to support the development of biodiversity-based businesses. In particular, their various funding programmes have highlighted both the opportunities and the challenges of scaling up funding for this type of businesses.

5.4 Physical incentives

In some BioTrade projects, physical equipment is provided to reduce the environmental impact of companies' production modes. Owing to the strengthening of physical capital, the productivity of companies and the quality of products have improved and thus, BioTrade companies are able to sell their products at better prices.

As the strengthening of physical capital increases, the productivity of companies increases, costs of production can be reduced and a higher benefit can be obtained. Several national BioTrade programmes have also facilitated the provision of equipment to companies. For example, Jambi Kiwa in Ecuador received a tea-bagging machine and a quality control laboratory through BioTrade support.

Figure 3. The support process for BioTrade value chains



6. CONCLUDING REMARKS

6.1 Towards a BioTrade incentive measures framework

Together, the seven case studies presented in this information paper provide the start of a platform on which it might be possible to develop a BioTrade incentive measures framework that identifies key challenges and drivers. This section illustrates such a framework and at the same time summarizes some of the key insights coming out of the case studies. In the following section, the development of such of framework is presented as one of the possible recommendations for the next steps in a programme of work on BioTrade incentive measures.

The preliminary framework used in this section includes the following:

- type/focus of activities;
- challenges/needs;
- incentive measures; and
- key drivers.

6.1.1 Innovative partnerships – Nativa and Cosmetic Valley

- Type/focus of activities
  - Partnership between a BioTrade association and a competitiveness cluster
- Challenges/needs
  - Converting the sustainable use of biological resources into a source of technical and market innovation
  - Accessing global markets
- Incentive measures (generated through the partnership)
  - Market incentives – access to niche markets interested in sustainable and responsible practices, with a broader and competitive product range
  - Social incentives – experience and knowledge sharing enhanced, as well as the development of joint R&D projects
  - Financial incentives – shared funding for research and development and market promotion and access
- Key drivers
  - Market demand for natural and sustainably produced cosmetic products
  - Creation of a business partnership that increases the competitiveness of its members and enables knowledge-sharing

6.1.2 Ensuring sustainable supply – PhytoTrade Africa

- Type/focus of activities
  - Trade association in the natural products sector
- Challenges/needs
  - Ensure the existence of an adequate supply base to meet demand once products are launched into the market
  - Access to global markets for NPs
  - Develop and implement strategic marketing strategies, especially if the product is based on entirely new ingredients in the marketplace
- Incentive measures
  - Market incentives – support to obtain product certification, to access markets that fulfil regulatory requirements and to develop commercial partnerships
  - Social incentives – develop skills on sustainable production, harvesting and compliance to quality standards and broaden the social network
- Key drivers
  - Ensure a reliable supply chain, strengthen social capital and support the generation of reliable markets for BioTrade products

6.1.3 Integrated marketing strategies – TreeCrops

- Type/focus of activities
  - Sustainable and formal trade of baobab
- Challenges/needs
  - Develop and implement strategic marketing action plans, especially if the product is based on entirely new ingredients in the marketplace
- Incentive measures
  - Market incentives – EU market entry of TreeCrops' baobab, through the approval of PhytoTrade Africa's application to the EU novel foods regulation; entry of TreeCrops' baobab in the United States of America, through the approval of PhytoTrade Africa's application to USA-GRAS; direct access to potential buyers and markets, for instance through the participation to trade fairs
  - Social incentives – enhance skills, abilities and knowledge of producers; new and extended social networks
- Key drivers
  - Market access to the European Union and the United States of America;

- Expansion of formal employment owing to the creation of TreeCrops

6.1.4 Direct financial support – Fondo Biocomercio

- Type/focus of activities
  - Private fund for BioTrade businesses
- Challenges/needs
  - Facilitate access to finance and broaden the knowledge of financial institutions on the risks and opportunities of BioTrade businesses

Incentive measures

- Financial incentives – tailored funding mechanisms to meet the needs and capacities of BioTrade business to grow and access markets
- Key drivers
  - Access to funding for BioTrade companies adapted to their business practices and needs
  - Strong knowledge on BioTrade-related sectors by a financial institution

6.1.5 Trading CITES-listed species – Bolivian BioTrade

- Type/focus of activities
  - Sustainable use of a CITES-listed species
- Challenges/needs
  - Lack of cooperation within and among value chain actors
  - Policy constraints and measures that limited the sustainable harvest of biodiversity, considering its biological characteristics
- Incentive measures
  - Market incentives – stable supplies of skins and meat and access to better prices
  - Social incentives – enhance skills, abilities and knowledge of producers on sustainable practices; strengthen relationships between value chain actors
- Key drivers
  - Participative value chain approach and joint elaboration of management plans valuing local knowledge and practices

6.1.6 Community-based BioTrade – Jambi Kiwa

- Type/focus of activities
  - Community-based SME dedicated to sustainable production and processing
- Challenges/needs
  - Need to introduce new concepts of self-management and institutional strengthening, market access with quality differentiated products
- Incentive measures
  - Market incentives – product differentiation through certification and inclusion of BioTrade practices, access to environmentally and socially responsible markets and business partnerships
  - Social incentives – enhance skills, abilities and knowledge of its members, organizational strengthening and enhanced networks
  - Financial incentives – an operational microcredit facility considering the needs of Jambi Kiwa and its members
  - Physical incentives – improvement of facilities and equipment (e,g. tea-bagging machine, ventilators and quality control laboratory)
- Key drivers
  - Product differentiation based on sustainable practices and local culture
  - Organizational strengthening
  - Use of international standards

6.1.7 Verifying and promoting BioTrade – UEBT

- Type/focus of activities
  - Market differentiation of BioTrade products and companies
- Challenges/needs
  - Develop market-based recognition of commitments to BioTrade principles and supply of BioTrade goods and services
- Incentive measures
  - Market incentives – a differentiation scheme for member companies
  - Social incentives – international networking of BioTrade businesses
  - Financial incentives – facilitation of access to funding
- Key drivers
  - Market recognition of UEBT as a key driver for communicating its objectives and promoting its mission

6.1.8 Innovative financial support – Funbio

- Type/focus of activities
  - Private finance of biodiversity-based businesses
- Challenges/needs
  - Financial sustainability of beneficiary companies
- Incentive measures
  - Social incentives – sustainability dialogues to exchange best practices and lessons learned
  - Financial incentives – innovative funding mechanisms to meet the needs and capacities of

BioTrade business to grow and access markets
- Key drivers
  - Develop and invest in regional portfolio of linked sustainability projects

During the international workshop, case studies were reviewed in details. This process resulted in a number of general observations.

- Market demand can be considered as the key driver and prerequisite for the success of BioTrade experiences. For instance, in the case of PhytoTrade Africa, failures were observed when successful initiatives were replicated without taking into account the existence of a limited market demand.
- It appears to be easier to work with flora than with fauna because of the negative public perceptions associated to fauna-based products and especially when it is possible to clearly distinguish the species in the product (e.g. shampoo rather than crocodile skin products).
- The beneficiaries of incentive measures should be clearly defined. It could also be interesting to classify incentives along the value chain and then to identify which value chain actors should be targeted in order to impact the entire value chain positively.
- Sometimes, the private sector is reluctant to invest in activities related to the conservation and sustainable use of biodiversity, as there are risks associated to this type of activity. As the concept of "access and benefit sharing" exists, it would also be interesting to introduce the concept of "access and risk sharing".
- Diversifying the range of products which allows the diminishing of the risks associated with seasonality and other such factors.
- An important aspect in BioTrade experiences is the support to build capacities at the local level and to connect value chain actors across the sector. This is an important prerequisite for the sustainability of initiatives.
- Companies need both loans and technical assistance and those specific needs have created a niche for intermediaries. Fondo Biocomercio and Funbio have entered this niche; alongside financial services, they also offer technical assistance to their beneficiaries.
- The type of financial mechanism needs to be adapted to the type and size of companies. For instance, in the case of cocoa in Ecuador, it was easy to get funds from a traditional bank (i.e. the Dutch bank Rabobank). However, in the case of small SMEs such as Jambi Kiwa, this kind of loan is more difficult to obtain and the creation of a microcredit revolving fund was more suitable.

6.2 Possible next steps

As this information paper makes clear, the work of the UNCTAD BioTrade Initiative has generated a set of incentive measures for the sustainable and responsible use of biological resources. For the most part, these are voluntary, market-based measures which directly engage the private sector in activities supporting the conservation of biodiversity. The experience to date provides a solid basis on which to further strategically develop the programme of work on BioTrade in support of the implementation of the CBD and other MEAs such as CITES. Some of the possible next steps could include the following:

- **Development of a BioTrade incentive measures framework**
  Building on the cases in this paper and the preliminary framework presented above, a more rigorous and well structured framework of BioTrade incentive measures could be drafted. The COPs of the CBD are appropriate spaces to discuss incentives for the sustainable use of biodiversity.
- **Development of a BioTrade handbook**
  As highlighted in these cases, there is now a considerable amount of guidance materials such as the BioTrade principles and criteria, the UEBT standards and various guidelines and information notes. These could be compiled into a BioTrade handbook that would serve as the key reference document for BioTrade businesses and supporters.
- **Report on biodiversity "capital" and BioTrade impacts on biodiversity conservation**
  In this regard, a report should focus on some concrete biodiversity indicators.
- **Expanding BioTrade's regional and national programmes**
  Until recently, much of BioTrade's experience is in South America and southern Africa. BioTrade programmes are being developed in Southeast Asia (Viet Nam and Indonesia) and efforts should continue in strengthening and expanding the activities in Asia as well as in the Middle East. This will address the opportunities and challenges of BioTrade in other regions.
- **Developing the BioTrade approach in marine ecosystems**
  Until recently, most of BioTrade's experience is in terrestrial ecosystems. Nevertheless, there could

be significant benefits to applying the BioTrade approach to marine ecosystems.

- **Establishing BioTrade within the programme of work of the CBD**
  The UNCTAD BioTrade Initiative has been consistently recognized by the parties to the CBD as a significant contribution to the implementation of the CBD. In the upcoming strategic review of the CBD's programme of work, there may be an opportunity to include BioTrade as a formal component of this programme.
- **Developing BioTrade programmes in biodiversity-related conventions**
  As the case study from the Plurinational State of Bolivia demonstrated, BioTrade can and does provide a significant contribution to CITES. It could also play a significant role in addressing the role of sustainable and responsible use of biological resources in other conventions, notably Ramsar and UNCCD. For instance, BioTrade could represent an opportunity for REDD. It could provide a framework to facilitate the sustainable use of forests. In the Plurinational State of Bolivia, for instance, ways of linking BioTrade to REDD are already being explored. Connections between BioTrade and the Intergovernmental Platform on Biodiversity and Ecosystem (IPBES) could be developed as well.
- **BioTrade and scale (e.g. big businesses)**
  How is BioTrade applied at different scales? It could be interesting to explore how different biodiversity approaches act at different scales. For instance, enhancing the sustainable use of biodiversity in big businesses or encouraging the creation and development of biodiversity businesses could be considered.
- **Recognition of the BioTrade potential**
  "Trade people" often focus on amounts being traded rather than the potential of the trade. The BioTrade Impact Assessment System could be a way to overcome this challenge.

Essentially, BioTrade incentive measures are making an important contribution to the conservation of biodiversity. Thus the work of the UNCTAD BioTrade Initiative and its partners should be broadened to enable more countries and more ecosystems to benefit from the BioTrade approach to the sustainable and responsible use of biological resources.

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Notes

1 Marion Klein worked as a consultant for the BioTrade Initiative of UNCTAD in 2009.

2 Lorena Jaramillo Castro is an Economic Affairs Officer for the BioTrade Initiative of UNCTAD.

3 Francis Vorhies is the Director of Earthmind, a not-for-profit sustainability network. He has been working as a consultant for UNCTAD BioTrade.

4 Key UNCTAD conferences: Bangkok, 2000; São Paulo, 2004; and Accra, 2008.

5 UNCTAD (2007a).

6 BioTrade beneficiary countries are the Plurinational State of Bolivia, Brazil, Colombia, Ecuador, Peru and Uganda. Furthermore, it works in southern Africa through PhytoTrade Africa (Botswana, Malawi, Namibia, Mozambique, South Africa, Swaziland, Zambia and Zimbabwe). National programmes are under development in Viet Nam and Indonesia.

7 Key UNCTAD conferences: Bangkok, 2000; São Paulo, 2004; and Accra, 2008.

8 UNCTAD (2006a).

9 Pearce, D. and Moran, D. (1994).

10 European Communities (2008), 27.

11 OECD (1999).

12 CBD (2007).

13 OECD (1999) and CBD (2007), 3.

14 For example, a side event was organized at the CITES Standing Committee meeting in July 2009 aimed at "making the private sector a full partner in CITES implementation". Private actors expressed some of their concerns, especially related to the complexity and length of CITES procedures. Nevertheless, the private sector was in favour of the creation of an "informal network" for business within the CITES Secretariat.

15 CBD Secretariat (2004a).

16 CITES (2007).

17 Ramsar (2002).

18 Ramsar (2008).

19 For more information on incentive measures, please see: www.cbd.int/incentives/positive.shtml.

20 UNCTAD (2009b). For more information, please see UNCTAD publication UNCTAD/DITC/BCC/2008/1.

21 Chambers, R. and Conway, G. (1992).

22 DFID (1999).

23 Note that Table 1 excludes the two categories of property rights and fiscal incentives both of which are the direct responsibility of governments and thus are not key features of the BioTrade Initiative.

24 References used for this case study: Nativa (2006); UNIDO (2008); UNCTAD (August 2006b); websites: Cosmetic Valley: www.cosmetic-valley.com; and interviews with: J.L. Ansel, Cosmetic Valley, G. Urrea, Labfarve and BioNativa, Y. Darricau and Caroline Feltesse, UNIDO service in France.

25 The association BioNativa was created in 2006 and brings together actors from the natural ingredients sector from Bolivia, Colombia, Ecuador and Peru. Nativa is a member of BioNativa.

26 Yves Darricau, Deputy Head of UNIDO, France.

27 Brochure Colombia – Native Biodiversity for a World of Beauty, Bogotá and Cundinamarca Region.

28 Taken from www.cosmetic-valley.com.

29 Competitiveness clusters are part of France's new industrial policy; defined as: "associations of companies, research centres and educational institutions, working in partnership (under a common development strategy) to generate synergies in the execution of innovative projects in the interest of one or more given markets". For more information, please visit the following website: www.competitivite.gouv.fr/spip.php?rubrique39&lang=en.

30 Taken from www.cosmetic-valley.com/en/developpement1.php.

31 This case study has been prepared by Itai Chibaya and Nontokozo Nemarundwe from PhytoTrade Africa.

32 Recommended references include: Bond, I. (2001); Cavendish, W. (2000); Centre for Development Cooperation Services (1996 per reference list); Chibaya, I.G. and Nemarundwe N. (2009); Fisher, M. (2004); Gelb, S. (2003)- Government of Malawi Report (2005); Hulme, D. and Murphree, M. (2001); Murombedzi, J.C. (2001); Neumann, R.P. and Hirsch, E. (2000); Scoones, I., Melnyk, M. and Pretty, J. (1992).

33 Le Breton, G. (2009).

34 Welford, L. and Le Breton, G. (2008).

35 Le Breton, op. cit.

36 Le Breton, G. (2008).

37 This case study was prepared by Itai Chibaya and Nontokozo Nemarundwe from PhytoTrade Africa.

38 References used for this case study include: interviews with John Bejarano (Executive Director) and María Helena Cendales (Evaluation and Monitoring Senior Executive), *Fondo Biocomercio* Colombia; references to Fondo Biocomercio Colombia is available at : www.fondobiocomercio.com.

39 The DTF (fixed-term deposit) rate is the main benchmark short-term interest rate in Colombia. It is calculated and published weekly by the Colombian Central Bank. By indexing its services to the behaviour of the DTF and hence having a variable interest rate, the fund can propose costs linked to the Colombian market situation.

40 References used for this case study include: interviews with Alfonso Llobet, FAN; PNBS - FAN - CAF (2009).

41 Further information at http://iucncsg.org/ph1/modules/Publications/action_plan1998/cyaca.htm.

42 President of the Plurinational State of Bolivia (1990); President of the Plurinational State of Bolivia (1999).

43 Original Community Lands of indigenous peoples are defined by Law No. 1715 of the National Service of Agrarian Reform. This title provides indigenous and original peoples the possibility of owning collective property and recognizes their right to use and exploit in a sustainable manner the renewable resources on their lands. Non-renewable natural resources are regulated by the National Political Constitution and special laws have been approved concerning this issue. Land with such resources cannot be taken away, transferred, taxed, seized, reverted or prescribed. Community rules regulate the distribution and redistribution of those lands for individual and family use. In accordance with norms and traditions, within the TCO; each individual has the same right to access natural resource. Source: http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/LACEXT/BOLIVIAEXTN/0,,contentMDK:21310704~pagePK:1497618~piPK:217854~theSitePK:322279,00.html.

44 UNCTAD (2009b).

45 The CPIB represents an important group of TCOs from the Beni Department, northeast region of the Plurinational State of Bolivia.

46 CBD (2005), p. 15.

47 References used for this case study include: CORPEI (2008); OAS (2008).

48 CORPEI is the Exports and Investment Promotion Corporation of Ecuador.

49 CORPEI op. cit.and OAS op.cit.

50 A revolving fund is an account that is repeatedly expended, replenished and then expended again. Loan principal repayments and interest revenues are subsequently used to make new loans (US EPA, 2000).

51 As translated from Spanish into English. OAS (2008).

52 This case study was prepared by Maria Julia Oliva, Senior Adviser on Access and Benefit Sharing at the UEBT.

53 References used for this case study include: UEBT (2007); UEBT (2008); UEBT (2009a); UEBT (April 2009b); UEBT (2009c); UEBT (2009 d).; UEBT website articles at www.ethicalbiotrade.org: Governance of the Union for Ethical BioTrade; *The History of the Union for Ethical BioTrade*; and *The United Nations and Ethical BioTrade*.

54 UEBT (2009a).

55 UEBT (2009d).

56 Similar to UNCTAD BioTrade principles and criteria.

57 This case study was prepared by Fábio Leite from Funbio.

58 References used for this case study include: Funbio (2008).

59 Funbio (2008), p.40.

60 Ibid., p.41.

61 Ibid., p.10.

62 Ibid., p.14.

63 UNCTAD (2005), p. 5.

64 ProFound (2009).

65 Wright LT and Heaton S (2006), p. 416; and Belz, F. (2001), p. 141.

66 Kilcher L et al. (SIPPO/FiBL) (2004), p.13.

67 This sub-section is based on the master's thesis research by Maria Klewer undertaken in collaboration with the UNCTAD-BioTrade Initiative.

68 UNCTAD (2006c), p. 24.
69 For more information, please see: www.fondobiocomercio.com.
70 UNCTAD (2007b).
71 UNCTAD (2007a), p.2.
72 CBD (2004b).
73 UNCTAD (2007a), p.2.
74 UNCTAD (2009a).
75 UNCTAD (2007a), p. 2.
76 UNCTAD (2009b).
77 UNCTAD (2005), p.7.

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