

UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

**UNCTAD**



# TRAINING MANUAL

## ON DEVELOPING JOINT BIOTRADE AND REDD+ PROJECTS



UNITED NATIONS



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## List of acronyms

ACR	American Carbon Registry
ADPML	Avoided Deforestation Project (Manaus) Limited
BTIAS	BioTrade organizations
CBD	Convention on Biological Diversity
CCB	Climate, Community and Biodiversity standard
CDM	Clean Development Mechanism
CIFOR	Centre for International Forestry Research
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COP	Conference of the Parties
CSD	Commission on Sustainable Development
Ecam	Amazon Conservation Team
ERT	Emission reduction tons
ETS	Emissions Trading Scheme (European Union)
FAO	Food and Agriculture Organization of the United Nations
FPIC	Free prior and informed consent
FUNBIO	Brazilian Biodiversity Fund
GHG	Greenhouse gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
IDESAM	Institute for Conservation and Sustainable Development of Amazonas
IPCC	Intergovernmental Panel on Climate Change
IPPN	Instituto Peruano de Productos Naturales
MEA	Multilateral environmental agreement
NCRs	Non-conformity responses
NGO	Non-governmental organization
PDD	Project design document
PNPB	National BioTrade Promotion Programme (Peru)
PNBSE	National Sustainable BioTrade Programme in Ecuador
REDD+	Reducing Emissions from deforestation and forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks
REDD+ SES	REDD+ social and environmental standards
UNCDD	United Nations Convention to Combat Desertification
UNCTAD	United Nations Conference on Trade and Development
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VCUs	voluntary carbon units
VVB	validation/verification body

## Background

Biodiversity is the source of many products and services utilized by society and its sustainable use is thus fundamental for long-term sustainable development. Natural resources are located mainly in rural areas, where over 70 per cent of the world's poor live and directly depend on these resources to cover 90 per cent of their needs in terms of food, fuel, medicine, shelter and transportation.<sup>1</sup>

The BioTrade Initiative of the United Nations Conference on Trade and Development (UNCTAD) seeks to generate additional economic opportunities and income through the sustainable commercialization of biodiversity-based products and services. BioTrade encompasses activities ranging from the production to the sale of products and services derived from native biodiversity. Its implementation is based on compliance with a set of environmental, economic and social sustainability criteria aimed at generating economic growth and sustainable livelihoods for rural populations while conserving biodiversity.<sup>2</sup>

Introduced by the United Nations Framework Convention on Climate Change (UNFCCC), REDD+ offers financial incentives to developing countries for reducing emissions from deforestation and forest degradation through the conservation of forest carbon stocks and sustainable management of forests. It therefore represents an opportunity for integrating BioTrade activities into climate - friendly policies, thereby strengthening local economic activities in forest buffer zones.

The present training manual is intended to support the development and implementation of joint BioTrade and REDD+ projects in order to maximize benefits and synergies. It includes a step-by-step project methodology that has been specifically designed for project proponents and developers. The manual also provides policy advisers and other interested stakeholders with key concepts and practical considerations on BioTrade and REDD+, the synergies between the two approaches and the potential for combining them.

The content of the manual draws on the experience of the UNCTAD BioTrade Initiative in promoting trade and investment in biological resources to further sustainable development. It also integrates Forests Alive's experience in developing REDD+ projects. Finally, the manual builds on the findings of the project "Strengthening the capacity of policymakers and business leaders in three BioTrade beneficiary countries [Brazil, Colombia and Ecuador] in integrating REDD+ projects into BioTrade strategies" which was formulated and implemented by UNCTAD between 2010 and 2012 under the United Nations Development Account programme.

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<sup>1</sup> CBD (2009).

<sup>2</sup> UNCTAD (2012b).

# Module 1 Introduction to BioTrade: Principles, criteria, approaches, methodologies and guidelines

## Learning objectives

This module will provide the reader with the necessary information to:

1. Describe BioTrade and its principles and stakeholders
2. Define a value chain and recognize the key elements of the UNCTAD value chain development methodology
3. Outline the social, environmental and economic benefits of BioTrade

## 1.1 What is biodiversity?

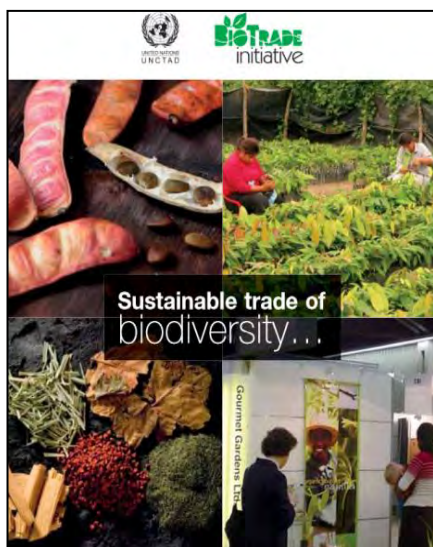
“Biological diversity means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems”.<sup>3</sup>

Article 2 of the 1992 Convention on Biological Diversity (CBD)

In addition to ecosystems and species, biodiversity also includes genetic resources.

## 1.2 What is BioTrade?

**Figure 1: Cover of a BioTrade Initiative brochure**



UNCTAD defines BioTrade as those activities related to the collection, production, transformation and commercialization of goods and services derived from native biodiversity (species and ecosystems) according to environmental, social and economic sustainability criteria<sup>4</sup> known as the BioTrade principles and criteria.

The BioTrade Initiative was launched by UNCTAD in 1996 to stimulate trade and investment in biological resources to further sustainable development in line with the objectives of the CBD.

The BioTrade Initiative operates through partners at the national, regional and international levels to implement its concept, principles and methodologies. It places a particular emphasis on supporting the creation and strengthening of biodiversity-based sectors, value chains and businesses that fulfil its principles and criteria. The operationalization of the Initiative has been supported with funding from donor countries and agencies, especially SECO of Switzerland.

## 1.3 What is the Convention on Biological Diversity and how does it relate to BioTrade?

The CBD was one of the treaties adopted at the United Nations Conference on Environment and Development (Rio Conference) in 1992.<sup>5</sup>

The CBD has three main objectives:

1. The conservation of biological diversity;
2. The sustainable use of the components of biological diversity; and
3. The fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

<sup>3</sup> An ecosystem can be defined as “a system of complex interactions of populations between themselves and with their environment” or as the “joint functioning and interaction of these two compartments (populations and environment) in a functional unit of variable size” (FAO (2003)).

<sup>4</sup> UNCTAD (2007).

<sup>5</sup> United Nations Conference on Environment and Development, 1992. Also known as the Earth Summit. For more information, see <http://www.un.org/geninfo/bp/enviro.html>.

## BioTrade and the Convention on Biological Diversity

The activities of the BioTrade Initiative aim to support the achievement of the three objectives of the CBD at the ecosystems and species levels.<sup>6</sup> Moreover, BioTrade supports article 11 of the CBD on incentive measures:

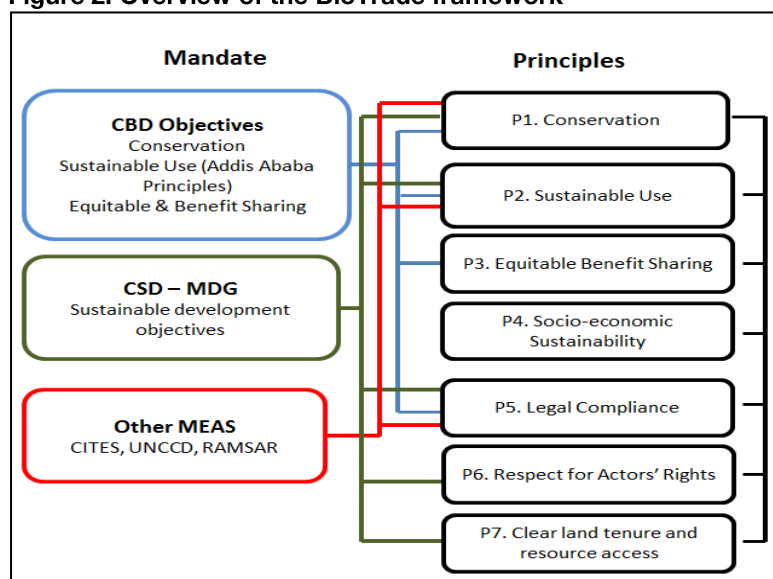
*“Each Contracting Party shall, as far as possible and as appropriate, adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity”.*

Subsequent decisions adopted by the Parties to the CBD at the sessions of the Conference of the Parties (COP) also provide guidance to BioTrade activities such as the Biodiversity Strategic Plan (2011–2020) and its Aichi Biodiversity Targets and the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (see annex I). Finally, given the contribution of the BioTrade Initiative to CBD objectives, it has also been referenced in several CBD COP decisions related to incentive measures, promoting business engagement, biodiversity and poverty eradication and development and sustainable use, among others.

### 1.4 The BioTrade principles and criteria

The BioTrade principles and criteria provide guidance to BioTrade partners and practitioners on how to promote biodiversity conservation through sustainable commercial use. They were developed following extensive consultations with stakeholders and BioTrade partners.<sup>7</sup> The principles are linked to the objectives of the CBD, the Commission on Sustainable Development and the Millennium Development Goals and other multilateral environmental agreements (e.g. the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), as outlined in figure 2.8

**Figure 2: Overview of the BioTrade framework**



Source: UNCTAD (2007).

Each principle is complemented by a set of two to five criteria serving as a tool to assess its level of implementation (see figure 3 for an example of a BioTrade principle and its corresponding criteria).<sup>9</sup>

<sup>6</sup> The UNCTAD BioTrade Initiative supports initiatives related to species and ecosystems, not genetic resources.

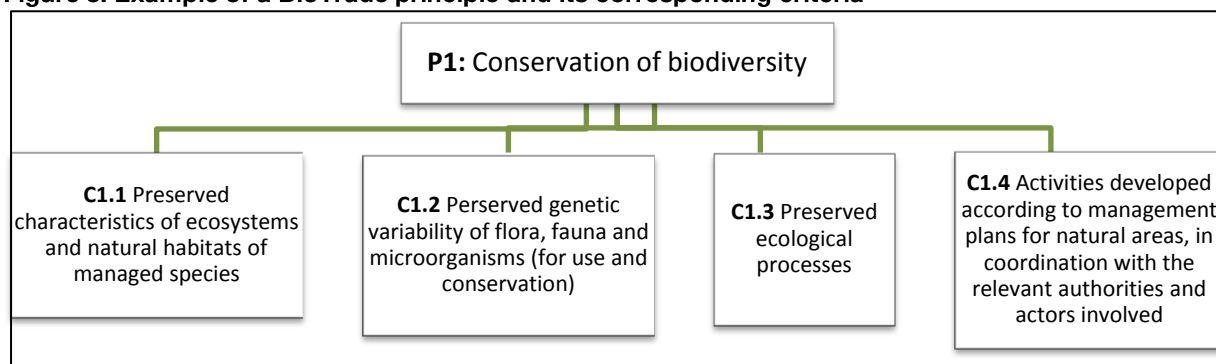
<sup>7</sup> UNCTAD (2007).

<sup>8</sup> Ibid.

<sup>9</sup> For a detailed list of the principles and criteria, see UNCTAD BioTrade Principles and Criteria (2007), available at [http://www.biotrade.org/ResourcesPublications/UNCTAD\\_BT\\_PC\\_en.pdf](http://www.biotrade.org/ResourcesPublications/UNCTAD_BT_PC_en.pdf).



**Figure 3: Example of a BioTrade principle and its corresponding criteria**



Source: UNCTAD (2007).

### 1.5 Who are the BioTrade stakeholders/actors?

BioTrade is implemented by BioTrade organizations (BTOs). The term BTO refers to any entity that uses and trades biodiversity-based ingredients and products in compliance with BioTrade principles and criteria. Examples of BTOs include private companies, whether small, medium-sized or transnational, as well as business associations and cooperatives (e.g. producers' associations), Non-governmental organizations (NGOs) and foundations.<sup>10</sup>

BioTrade partners include national programmes (e.g. ministries of environment and trade, trade promotion organizations and NGOs), as well as regional programmes (e.g. PhytoTrade Africa, General Secretariat of the Andean Community and Development Bank of Latin America (CAF)) and international initiatives (e.g. Union for Ethical BioTrade and UNCTAD). They support BTOs in implementing the BioTrade principles and criteria and have also developed methodologies such as businesses plan development and management plans for specific species and ecosystems to meet the specific needs of the latter.

Governments and public agencies play a key role in the development of BioTrade activities. For instance, they establish the legal framework under which BTOs operate. Examples of regulations with a direct impact on BioTrade activities include rules for the issuance of permits for the use and transportation of biodiversity or the establishment/operation of companies, quality and health requirements for production processes and products, obligations in terms of labelling, etc.

Other organizations involved in promoting BioTrade sectors and supporting BTOs include, among others, the following:

- Academia and botanical gardens which can assist with biological and taxonomic studies, support capacity-building programmes, provide information on species used or processes to enhance value addition, etc.
- Business incubators and developers which can support the development of management capacities for BTOs.
- Financial institutions and international cooperation agencies which can provide loans, grants and technical assistance.

The scopes of these actors may be at the national, regional or international levels.

### 1.6 What are BioTrade sectors?

BioTrade supports different biodiversity-based sectors in different countries. The major sectors with potential for BioTrade that have been developed by BioTrade partners and BTOs are as follows:

- Personal care, pharmaceutical, food and fashion industries
- Decorative products and handicrafts
- Textiles and natural fibres
- Ornamental fauna and flora (e.g. flowers and foliage)
- Sustainable tourism (i.e. nature-based tourism, ecotourism and birdwatching)

<sup>10</sup> UNCTAD (2012).

## 1.7 What are BioTrade products and services?

BioTrade products and services are derived from native biodiversity (i.e. plants, animals and ecosystems services)<sup>11</sup> and produced in accordance with BioTrade principles and criteria. They range from live organisms (e.g. wildlife for pets) to man-made industrial or artisanal products (e.g. personal care products) or to ecosystem services (e.g. ecotourism). Examples of BioTrade products and services include those provided in table 1.

**Table 1: Examples of BioTrade sectors, products and services**

BioTrade sectors	Examples
<b>Personal care</b>	Essential oils, natural dyes, soaps, creams and butters, moisturizers, etc.
<b>Pharmaceuticals</b>	Extracts and infusions from medicinal plants, natural medicine capsules, etc.
<b>Food</b>	Tubers, nuts, cocoa, fish products, jams, sweets and snacks, jellies, pulps and juices, spices and sauces, teas and infusions, food supplements, meat from caiman and fish (paiche (arapaima)), etc.
<b>Fashion</b>	Skin and derived products (e.g. belts and purses) from Yacare caiman, etc.
<b>Handicrafts</b>	Furniture, decoration objects, jewellery and garments
<b>Textiles and natural fibres</b>	Garments and shoes of natural fibres (e.g. cabuya)
<b>Ornamental fauna and flora</b>	Heliconia and other tropical flowers
<b>Sustainable tourism</b>	Ecotourism, birdwatching, etc.

Source: UNCTAD (2011).

As a major ecosystem service, carbon sequestration has been considered by BioTrade partners in Africa and Latin America. However, implementation has not yet taken place. The elaboration of the present training manual is a pioneer initiative of UNCTAD to address this interest.

## 1.8 What is a BioTrade value chain?

### Definition

BioTrade value chains are the coordinated relationships between actors who are involved directly and indirectly in a productive activity with the aim of taking a BioTrade product or service from its supply source and getting it to a customer. A value chain involves alliances between producers, processors, distributors, traders and regulatory and support institutions, among others, whose common starting point is the understanding that there is a market demand for their products and services. These different actors set out a joint vision to identify mutual needs and work cooperatively to achieve their goals.<sup>12</sup>

### The value chain approach

The value chain approach allows actors to efficiently and collectively address issues such as competitiveness, market access, resource access and management practices and benefit sharing. An effective collaboration at the value chain level will allow stakeholders to better identify and seize market opportunities, address bottlenecks and implement quality standards.

Box 1 describes the UNCTAD value chain support methodology, which is designed to facilitate the commercialization/trade of BioTrade products. This methodology is used as a reference in this manual for the development of BioTrade activities (see module 4). It supports, among others, the identification of promising biodiversity-based species and products to be sourced within the selected forested area or its vicinity (e.g. the buffer zone of a national park).

<sup>11</sup> For more information, see the definitions of biological resources and ecosystems in article 2 of the CBD.

<sup>12</sup> UNCTAD (2009a).

### Box 1: The value chain support methodology

The UNCTAD Methodology to Support Value Chains for BioTrade Products aims to support and consolidate the value chains for BioTrade products, particularly those destined for national and international markets. It is implemented through a participatory process in which all actors – both productive and institutional – are involved. The process focuses on market demand and the sector's potential to enter these markets. It includes five steps, starting with the identification of sectors with BioTrade potential and concluding with the definition and implementation of a sector strategy.

<b>Step 1</b>	Identification of sectors that have trade potential Identifying the species and products with the best potential at the national level.
<b>Step 2</b>	Selection of the value chains to be supported Selecting value chains that can be supported based on environmental, biological, social, political, economic and market-related criteria, as well as technological and infrastructure criteria.
<b>Step 3</b>	Participant assessment of the value chain Characterization of the actors in the value chain; identifying problems in accessing current and potential markets and finding solutions to these problems.
<b>Step 4</b>	Formulation of a sector strategy Designing a strategy that prioritizes concrete actions for the development of the sector, identifying those responsible for such actions and detailing the resources needed.
<b>Step 5</b>	Implementation of the strategy Carrying out plans and actions to develop the sector and to develop access to target markets. This step also includes formulating a monitoring and evaluation system.

Source: UNCTAD (2009a).

## 1.9 Overview of UNCTAD BioTrade methodologies for the sustainable management of wild-collected species

The conservation and sustainable use of biodiversity resources are among the seven BioTrade principles and have a direct influence on the day-to-day work of BTOs, such as those involved in harvesting or breeding activities. The UNCTAD methodological guidelines described in box 2 illustrate how these principles can be implemented on the ground.

### Box 2: Resource assessment methodologies

*Resource assessment guidelines for wild-collected species:*

<b>Step 1</b>	Species appraisal for BioTrade management Compilation of available biological and socioeconomic information on the managed species. Identification of information gaps and assessment of potential sustainable use.
<b>Step 2</b>	Assessment of demographic attributes of the managed population Field inventories to collect data on key population parameters. Data analysis and calculation of demographic parameters.
<b>Step 3</b>	Estimation of harvest rates and sustainable yield Analysis of population dynamics without harvesting. Analysis of the implications of harvesting scenarios.
<b>Step 4</b>	Management implications Identification of good practices. Improvement of monitoring systems.

Source: UNCTAD (2013).

*Guidelines for the development and implementation of management plans for wild-collected species used by organizations working with natural ingredients:*

<b>Step 1</b>	Identification of collection areas and collectors Definition of the areas from which the resources are being extracted. Collection of information on the ecosystem(s). Identification of the suppliers and collectors.
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<b>Step 2</b>	Assessment of managed resources Gathering of information on the variables affecting the productivity of the species. Inventory of the managed population. Definition of extraction quotas or harvest rates. Identification of the social and economic issues affecting resource management.
<b>Step 3</b>	Definition of good practices to be implemented Definition of good practices for direct species management. Preparation of collectors' manuals.
<b>Step 4</b>	Definition of follow-up and monitoring systems Selection of the relevant variables. Definition of standard information collection procedures and description of the roles and responsibilities of the involved actors.
<b>Step 5</b>	Implementation of documentation systems Set up and operation of a data registration system comprising specific records for collectors, intermediaries and buyers.

Source: UNCTAD (2009b).

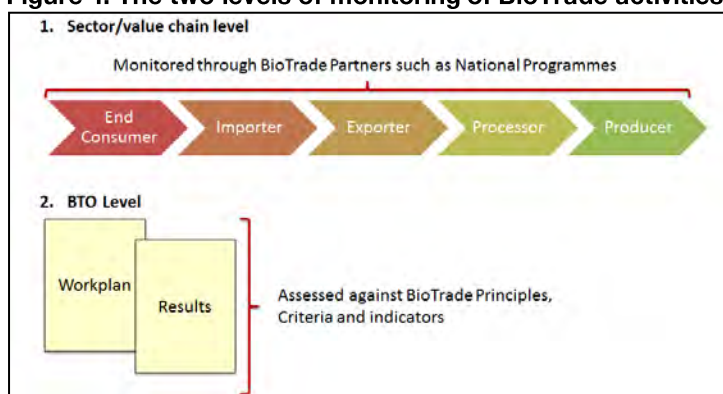
### 1.10 How are BioTrade activities monitored?

BioTrade activities are monitored through the use of work plans designed to ensure the implementation of the BioTrade principles and criteria.

Individual workplans are prepared by national and international partners at the BTO level based on the results of an assessment of their level of compliance with the BioTrade principles and criteria. Iterative assessments combining external and self-evaluations are then used to measure the progress of BTOs in complying with BioTrade standards. The BioTrade Initiative and its partners are committed to assist BTOs in the implementation of their workplans.

BioTrade partners such as national partners (e.g. national programmes) and regional and international partners (e.g. PhytoTrade Africa and Union for Ethical BioTrade) aggregate data from BTOs in order to monitor the implementation the BioTrade principles and criteria at the sector or value chain level. By doing so, they are able to identify and address gaps in the implementation of the principles and criteria. They can, as well, better respond to the needs of BTOs (i.e. by providing technical assistance on a specific topic or by addressing a policy constraint). Figure 4 depicts these two monitoring levels.

**Figure 4: The two levels of monitoring of BioTrade activities by national partners**



Source: Forests Alive.

In addition to these monitoring practices, BioTrade actors are also engaged in assessing the impact of BioTrade at the environmental, economic and social levels. For this purpose, the BioTrade Initiative, with the active participation of its partners, has developed a BioTrade Impact Assessment System (BTIAS). The BTIAS can either be used directly by BioTrade partners or serve as a reference for the design of their own impact assessment systems.<sup>13</sup>

<sup>13</sup> Detailed information on the BTIAS is available in the following publication: UNCTAD (2012), *The BTIAS*, UNCTAD/DITC/TED/2010/9, New York and Geneva, available at [http://www.biotrade.org/ResourcesPublications/UNCTAD\\_DITC\\_TED\\_2010\\_9.pdf](http://www.biotrade.org/ResourcesPublications/UNCTAD_DITC_TED_2010_9.pdf).

### 1.11 What are the biodiversity-related, social and economic benefits of BioTrade?

BioTrade, as a multidimensional approach, generates benefits at the environmental, social and economic levels. Table 2 illustrates some of these positive impacts.

**Table 2: Environmental, social and economic benefits of BioTrade**

<b>Environmental benefits</b>	Conservation of biodiversity.
	Promotion of good conservation and sustainable use practices.
	Awareness raising and capacity-building regarding the value of conserving biodiversity.
<b>Social benefits</b>	Employment and income generation, for instance for communities, small and medium-sized enterprises and associations, including for local and indigenous communities.
	Education, training and creation and development of skills and in some cases infrastructure.
	Positive impact on rural livelihoods, income and conservation of traditional knowledge.
<b>Economic benefits</b>	Generation of income along value chains at national levels.
	Diversification of business activities and product ranges, as well exports.
	Development of value added products that are traded at local, national and international markets.

## Module 2 Introduction to REDD+: Project design, implementation and carbon trading

### Learning objectives

*This module will provide the reader with the necessary information to:*

1. Define REDD+ and its benefits in terms of the climate, community and biodiversity
2. Describe its standards, methodologies and requirements
3. Identify potential market opportunities for REDD+ projects

### 2.1 What is REDD+?

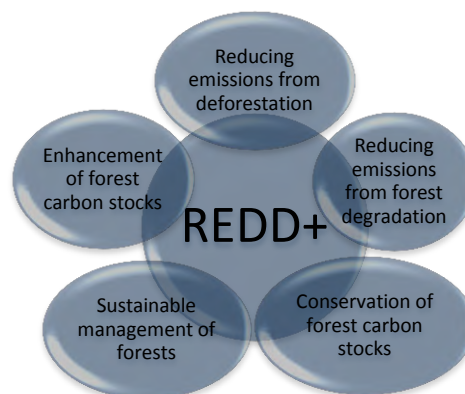
Reducing Emissions from Deforestation and Forest Degradation (REDD) is a framework administered under the UNFCCC through which developing countries are rewarded financially for any emission reductions achieved that are associated with a decrease in the conversion of forests to alternate land uses<sup>14</sup> and thus keeping forests alive.

Article 3 of the Kyoto Protocol under land use, land use change and forestry requires annex I Parties<sup>15</sup> to: 1) protect and enhance sinks and reservoirs of greenhouse gases (GHGs) in order to achieve quantified emission reductions; and 2) report on GHG emissions by sources and removals by sinks.

Reducing emissions from deforestation (with the acronym RED) was introduced as an agenda item at the eleventh session of the Conference of the Parties (COP11) in Montreal, Canada. At COP13 in Bali, Indonesia, the reduction of emissions from forest degradation was added to the previous term (providing the second D in REDD).<sup>16</sup>

In 2008, at COP14, the term REDD+ was introduced. REDD+ stands for reducing emissions from deforestation and forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks. Figure 5 provides an overview of the areas covered by REDD+.

**Figure 5: Overview of the five REDD+ components**



The succeeding UNFCCC conferences, COP15 and COP16, in 2009 and 2010, respectively, consolidated the international commitment to reducing overall emissions, considering the role of native forest preservation. REDD+ includes, for example full engagement with local and indigenous communities and the sustainable management of forests. The ultimate aim is to reduce emissions, by measuring carbon stocks and potential carbon loss. In doing so, REDD+ confers an economic value to forests and an incentive to developing countries to protect their forests.

<sup>14</sup> Parker, C., Mitchell, A., Trivedi, M., Mardas, N. and Sosis, K. 2009. The Little REDD+ Book. Global Canopy Programme, Oxford.

<sup>15</sup> Annex I Parties include the industrialized countries that were members of the Organization for Economic Cooperation and Development (OECD) in 1992, plus countries with economies in transition (the EIT Parties), including the Russian Federation, the Baltic States and several Central and Eastern European States (source UNFCCC). Under the Kyoto Protocol, annex I parties were assigned national GHG emission quotas with a view to reducing, individually or jointly, their overall emissions of such gases by at least 5 per cent below 1990 levels.

<sup>16</sup> The Bali Action Plan Decision 1/CP.13, paragraph 1(b)(iii).



The fundamental principle of REDD+ projects is to create an alternative source of revenue for private landowners and local communities through the commercialization of carbon credits. Therefore, it offers an economically, socially and environmentally beneficial alternative to unsustainable practices (logging, forest degradation and deforestation).

## 2.2 Who is involved in REDD+ projects?

Four main types of actors are actively involved in the development, implementation, funding and design of REDD+ projects:

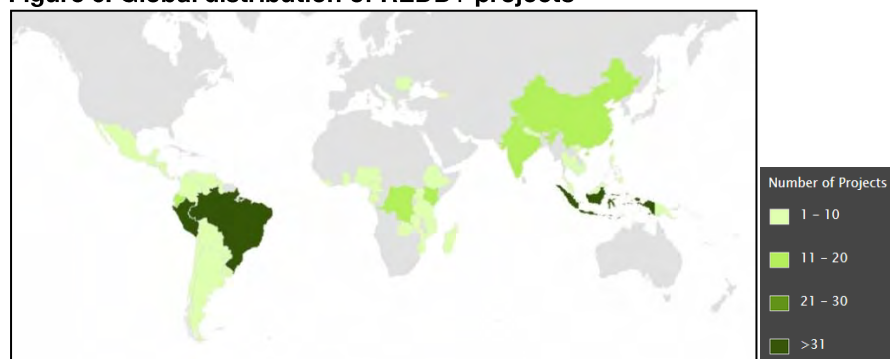
- a) Project proponents – e.g. local/indigenous community organization or private company with a legally recognized right of use<sup>17</sup> over the selected project area. Project proponents are those responsible for implementing project activities, as well as those who receive the project benefits.
- b) Project developer – an institution or, typically, a private company that develops a REDD+ project through collaboration with the project proponents and in accordance with a selected standard and methodology. The project developer is in charge of conducting fieldwork and calculations, preparing project documents as required by the selected standard, submitting the project for validation/verification and monitoring the project, if required by the project proponent.
- c) Project financier or donor – a private or public institution that provides funding for developing a project. The project financier may either provide funding from the start of a project or commit to pre-purchasing carbon credits once they have been issued. Donors provide funding normally at the start of a project and are typically Governments, international organizations and foundations.
- d) Other stakeholders – local and national governments, NGOs and research institutions involved with a REDD+ project or project area. These stakeholders are also involved and may take part in the design, implementation and monitoring of REDD+ projects. Their engagement confers more credibility and acceptance of the project in the host country.

More details about both BioTrade and REDD+ stakeholders are provided in module 3.

## 2.3 Where do REDD+ projects take place?

REDD+ projects take place in developing countries. REDD+ was proposed as a mechanism to provide financial incentives to developing countries to reduce GHG emissions and protect forests. REDD+ projects can be developed on private or public land. On public land, they may take place in national parks which are under threat from illegal logging and mining.

**Figure 6: Global distribution of REDD+ projects**



Source: Centre for International Forestry Research (CIFOR)<sup>18</sup>

Figure 6 shows the global distribution of REDD+ projects. To date, there have been a number of completed REDD+ projects in countries such as Brazil, the Congo, Indonesia and Peru.

<sup>17</sup> For more information regarding the right of use and other related legal/regulatory requirements, see step 1(b) on land tenure in module 4.

<sup>18</sup> The map is available at <http://www.forestclimatechange.org/redd-map/#>.

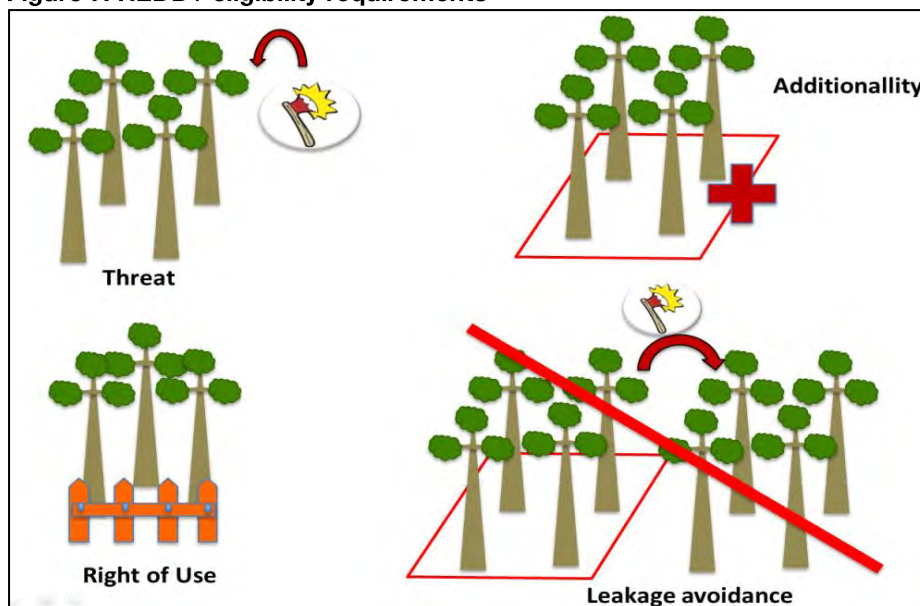
## 2.4 What are the basic requirements for REDD+?<sup>19</sup>

The basic requirements for REDD+ are as follows:

- a) Eligible project area –the area of forest land that is under threat from deforestation and/or forest degradation, where the project proponents have the right of use, as follows:
  - i) Right of use – the project proponents must demonstrate control of the project area by providing evidence of a right of use that is legally recognized. The specific legal instruments requested in this regard (e.g. land titles, concession contracts, etc.) can vary from one country to another.
  - ii) Threat – the forest area must be under threat by conversion to other land uses or by degradation. The baseline scenario can be built considering planned and/or unplanned deforestation and/or forest degradation.
- b) Evidence of threat – there must be evidence to suggest that the baseline scenario will take place if the project is not implemented.
- c) Additionality – there must be evidence that the emission reductions achieved through the project would not have occurred under a business-as-usual scenario in the absence of the project.
- d) Leakage avoidance – the project must ensure that the baseline activity (i.e. planned and/or unplanned deforestation and/or forest degradation) would not increase anywhere else, within the same country, as a result of the increase in forest protection associated with the project.
- e) Time frame – minimum and maximum time frames for maintaining the forest vary depending on the standard used to implement a carbon project (see module 2, section 8). The Verified Carbon Standard (VCS), for instance, requires a forest to be maintained for a minimum period of 30 years.

Figure 7 summarizes the above eligibility requirements.

**Figure 7: REDD+ eligibility requirements**

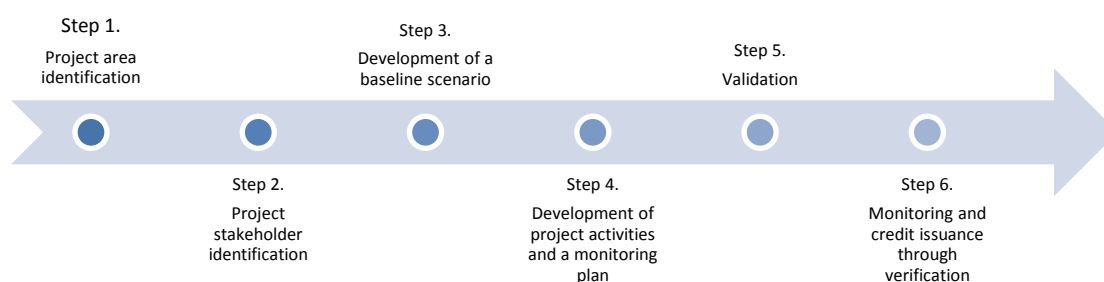


## 2.5 What are the basic steps of a REDD+ project?

Despite the differences in existing methodologies, REDD+ projects can be broken down into six basic steps from the initial design to the completion of a project, as described in figure 8.

<sup>19</sup> For further details, see module 4.

**Figure 8: The basic steps of a REDD+ project**



REDD+ projects require extensive preparation. Steps 1 to 4 cover activities related to the definition and design of a project (e.g. project area, stakeholders, baseline scenario, activities and monitoring plan). This preparation phase is followed by a validation process (step 5) conducted by an independent body (e.g. certification body for a particular standard). The project then enters into its implementation phase during which emission reductions are monitored over successive periods, typically ranging from two to five years. At the end of each monitoring period, emission reductions are verified and carbon credits issued and commercialized. This monitoring → verification → credit issuance sequence (step 6) is repeated throughout the project lifetime.

## 2.6 What are the existing carbon markets?

There are two major markets where carbon transactions take place, as follows:

- Voluntary market – the voluntary carbon marketplace encompasses the transactions of carbon credits that are not purchased with the intention of surrendering them to a regulated (compliance) carbon market. The entities buying carbon offsets are not legally obliged to reduce emissions and elect to do so for ethical, branding or other purposes.
- Compliance market – marketplaces where regulated entities obtain and surrender emissions permits (allowances) or offsets in order to meet predetermined regulatory targets. Examples include the European Union Emissions Trading Scheme (ETS) and the Australian Carbon Pricing Mechanism. Joint Implementation and the Clean Development Mechanism (CDM) are examples of financial mechanisms designed to help countries achieve the targets set under the Kyoto Protocol.<sup>20</sup>

## 2.7 How are REDD+ carbon credits commercialized?<sup>21</sup>

- Issuance – once a project has been validated and verified under a selected standard,<sup>22</sup> and measurable emission reductions can be demonstrated, carbon credits are issued. Subsequent issuances occur throughout the project cycle. Their frequency varies according to the standard and methodology used. Carbon credits (or carbon offsets) have different names under different standards. For example, credits generated under the VCS are called Voluntary Carbon Units (VCUs) and credits generated under the American Carbon Registry (ACR) are called Emission Reduction Tons (ERTs). A carbon credit is equivalent to one ton of carbon dioxide, which was reduced or captured through an emission reduction or mitigation project, or a carbon sequestration project. The price of a carbon offset varies depending on the type of project, location and the additional benefits generated. For example, projects that also achieve biodiversity and community benefits such as the VCS-climate, community and biodiversity (VCS-CCB) standard, tend to be more expensive.
- Registry – the credits issued are held in a registry account owned by the project proponent. There are several registries to choose from, for example Markit, APX, Climate Action Reserve, ACR, etc.

<sup>20</sup> Joint Implementation and CDM were project-based mechanisms under the Kyoto Protocol. They enabled industrialized countries to generate carbon emission reduction units by carrying out joint implementation projects with other developed countries (Joint Implementation) or by investing in sustainable development projects reducing emissions in developing countries (CDM). Source: UNFCCC.

<sup>21</sup> For further details, see module 4.

<sup>22</sup> See step 6 of the project development methodology in module 4.



- c) Retirement – a carbon credit can only be used once to offset one ton of emissions. To prevent a carbon credit from being used more than once, the credit is retired from the market when used as an offset. A credit buyer may purchase credits and retire them immediately to offset their emissions. The carbon offset's unique serial number is taken out of circulation and cannot be resold. A statement/certificate of retirement is produced as evidence of this process.
- d) Transfer – a credit purchaser may buy credits but not wish to use them to offset their emissions. They purchase the credits either to retire them at a later date, or with the intention to trade the credits to other purchasers. This is typical behaviour for carbon credit brokers. Instead of retiring the credit once purchased, the credits are moved into the registry account of the credit purchaser.
- e) Trading and marketing – project proponents can directly sell carbon credits and manage their registry accounts or they may opt for the utilization of brokers to market and sell credits on their behalf. A broker will then: 1) approach buyers; 2) market the projects to attract new buyers; and 3) manage trades and registry accounts.

## 2.8 What are the existing standards for REDD+?

Standards provide project developers with a set of guidelines, principles and criteria that define good carbon accounting practices for the calculation of GHG emissions. Standards provide a list of eligible methodologies which are to be followed when implementing a REDD+ project. Projects are validated by third parties in charge of assessing the implementation of the methodology and compliance with the criteria set by the standard.

### Main voluntary market standards

Table 3 shows a list of standards and certifications used in the voluntary market and the scope of the methodologies they support.

**Table 3: Overview of standards and certifications in use in the voluntary market**

Standards and Certifications	Description	REDD +			
		Deforestation	Forest Degradation	Forest Management	Enhancement
Clean Development Mechanism (CDM)	Methodologies for reforestation/afforestation only. Typically used alongside REDD Methodologies for carbon stock enhancement.				●
Verified Carbon Standard (VCS)	Provides methodologies for the entire scope of REDD+ and allows the use of CDM methodologies.	●	●	●	●
American Carbon Registry	Provides methodologies for the entire scope of REDD+ and allows the use of CDM methodologies.	●	●	●	●
Plan Vivo	A certification of avoided deforestation projects assigned on a project-by-project basis. Currently not widely used.	●			●
Carbon Fix	Similar to CDM, only afforestation and reforestation methodologies. Carbon Fix is now part of the Gold Standard.				●

Source: Adapted from L Rimmer, 2013, Forests Alive, Presentation at the second BioTrade Congress.

The CDM is included in the above table because it is a financial mechanism created to help countries meet their Kyoto Protocol targets.<sup>23</sup> The methodologies developed under the CDM can be used to generate carbon credits for a voluntary market.

<sup>23</sup> See footnote 16.






When selecting a standard, a project developer must also consider the potential buyer(s) of the carbon credits and the standards they would be interested in. For example, the most widely used international carbon standard in the voluntary market is the VCS. This standard has the largest market share in terms of credit sales and is widely recognized by companies wishing to offset their emissions by purchasing carbon credits.<sup>24</sup>

### Capturing co-benefits

As a consequence of protecting carbon stocks in forests, a project can deliver multiple benefits for biodiversity and local/indigenous communities. A good project design will capture both the biodiversity and community co-benefits. The importance of incentivizing these non-carbon benefits was recognized at COP19 in Warsaw.<sup>25</sup>

Standards such as the VCS and ACR certify only emission reductions and carbon sequestration. These standards can be combined with additional standards which certify the co-benefits (generated in relation to biodiversity conservation, livelihood enhancement of local communities, etc.), thereby increasing carbon credit value (e.g. by capturing premium prices) and saleability on the forest carbon market. Table 4 lists the co-benefit standards which are used in conjunction with REDD+ projects.

**Table 4: Overview of co-benefits standards relevant to REDD+ projects**

Standards and Certifications	Description	Emission Reductions	Poverty Alleviation	Biodiversity Conservation
Climate, Community and Biodiversity (CCB)	To certify under this standard a project must demonstrate Climate, Community and Biodiversity benefits through good project design.	Combined with VCS or ACR standards to account for emission reductions		
SOCIALCARBON	Originally associated with renewable energy projects, this standard is not being considered under REDD+ after it released its "Amazon REDD Indicators"	Combined with VCS or ACR standards to account for emission reductions		
Plan Vivo	To certify a project under this standard, the project must also demonstrate strong community benefits.			

The CCB standard is the most widespread certification and is mainly used in conjunction with the VCS. Both standards have worked together to provide guidance documentation to implement joint VCS-CCB projects. The CCB standard certifies projects with good biodiversity and community benefits. The CCB also issues a gold certification for those projects which demonstrate outstanding benefits such as strong benefits to indigenous communities or the protection of endangered species. This standard is particularly of interest in the context of BioTrade due to its strong similarities with the BioTrade principles and criteria, particularly with regard to community and biodiversity considerations.

<sup>24</sup> For more information on markets and carbon credits, see module 2, sections 6 and 7.

<sup>25</sup> Decision 9/CP.19, paragraph 22.

## 2.9 What are the existing methodologies for REDD+?

This section provides a non-exhaustive list of methodologies associated with the major standards of relevance for REDD+ projects.

### Verified Carbon Standard methodologies

Table 5 lists the VCS methodologies relevant to the agriculture, forestry and land use sectors. Besides the three methodologies specific to REDD activities (highlighted in blue), VCS also provides guidelines for agriculture, forestry and land use which are relevant to developing other modalities of forest carbon projects, such as Improved Forests Management projects.<sup>26</sup>

**Table 5: Selected Verified Carbon Standard methodologies in the agriculture, forest and land use sectors**

ID	Available methodology	Scope
VM0007	REDD Methodology Modules (REDD-MF), v1.4	Avoided emissions – quantifies GHG emission reductions and removals from avoiding unplanned and planned deforestation and forest degradation.
VM0009	Methodology for avoided deforestation, v2.1	Avoided emissions – considers different baseline scenarios including planned deforestation and unplanned deforestation in the mosaic and frontier configurations.
VM0010	Methodology for improved forest management: Conversion from logged to protected forest, v1.2	Improved forest management – this methodology is applicable when the baseline scenario includes planned timber harvest.
VM0011	Methodology for calculating GHG benefits from preventing planned degradation, v1.0	Improved forest management – preventing the planned degradation of a forest by stopping selective logging.
VM0015	Methodology for avoided unplanned deforestation, v1.1	Avoided emissions – estimates GHG emissions from areas where unplanned deforestation is taking place and quantifies the emission reductions achieved by curbing deforestation.

Source: VCS.<sup>27</sup>

### The American Carbon Registry and Plan Vivo

The American Carbon Registry has two REDD methodologies, one for avoiding planned deforestation<sup>28</sup> and a REDD modular methodology as an alternative to VCS methodology VM0007.<sup>29</sup> A document explaining the differences between the ACR and VCS modular methodologies is available on the ACR website.<sup>30</sup>

The Plan Vivo certification also has guidelines for avoiding deforestation.<sup>31</sup>

Project developers are advised to contact the standards issuers before proceeding with implementation of a REDD methodology, to ensure that they are using the most relevant and up-to-date methodology.

<sup>26</sup> VCS methodologies are available at <http://www.v-c-s.org/methodologies>.

<sup>27</sup> Other examples of methodologies in the agriculture, forestry and land use sectors are available at <http://www.v-c-s.org/methodologies/find>.

<sup>28</sup> The ACR methodology on avoiding planned deforestation is available at [http://americancarbonregistry.org/carbon-accounting/standards-methodologies/reducing-emissions-from-deforestation-and-degradation-redd-2013-avoiding-planned-deforestation/acr-methodology-for-redd-avoiding-planned-deforestation-v1-0-april-2011\\_final.pdf](http://americancarbonregistry.org/carbon-accounting/standards-methodologies/reducing-emissions-from-deforestation-and-degradation-redd-2013-avoiding-planned-deforestation/acr-methodology-for-redd-avoiding-planned-deforestation-v1-0-april-2011_final.pdf).

<sup>29</sup> The ACR REDD methodology modules are available at <http://americancarbonregistry.org/carbon-accounting/carbon-accounting/redd-methodology-modules-1>.

<sup>30</sup> Details on the differences between ACR and VCS modules (in relation to REDD methodology modules) are available at <http://americancarbonregistry.org/carbon-accounting/differences-between-acr-and-vcs-modules>.

<sup>31</sup> Resources are available at <http://www.planvivo.org/tools-and-resources/>.

Methodologies are typically revised every two years to accommodate changes in the understanding of carbon accounting.

## 2.10 What are the outcomes of a REDD+ project?

REDD+ projects have positive outcomes at both environmental and social levels. Five main benefits can be identified as follows:

- a) Emission reductions, as a result of the cessation of baseline activities (deforestation or forest degradation).
- b) Forest protection, as forests must be maintained throughout the project lifetime, which lasts approximately 30 years.
- c) Conservation of biodiversity, by maintaining forests, ecosystems and the different species occurring in the project area that is protected.
- d) Community engagement, as project participants are involved in project design and implementation and also benefit from REDD+ outcomes, in particular from the environmental services provided by forests, such as emission reductions, air quality, landscape beauty, etc.
- e) Generation of revenue, by selling carbon credits. Project proponents are financially compensated for maintaining the forest.

## 2.11 How are the benefits of REDD+ projects shared among the stakeholders?

REDD+ projects require the consent of the stakeholders involved, such as landowners, Governments or communities, often in combination. This is normally achieved through consultation processes with these stakeholders that take place prior to the start of a project. When communities are involved, their consent to develop projects located on collective or customary land is required through a process known as free, prior and informed consent (FPIC) (see the United Nations Declaration on the Rights of Indigenous Peoples<sup>32</sup>). This also ensures that benefit-sharing arrangements are discussed and agreed upon with the stakeholders and communities involved prior to project implementation.

A number of REDD+ guidelines and safeguards<sup>33</sup> are being developed at the national and international levels to ensure public participation, community engagement and benefit sharing. For example, the UNFCCC proposed a set of safeguards that should be promoted when undertaking REDD+ projects (COP16, in Cancun, Mexico in 2010<sup>34</sup> and the Durban outcomes<sup>35</sup>). The Cancun Agreements and the subsequent Durban Agreement also requested parties implementing REDD+ to provide information on how safeguards are being addressed and respected throughout the implementation of REDD+ activities. The UN-REDD Programme and the Forest Carbon Partnership Facility (two of the largest REDD+ funders) also gathered feedback on their draft guidelines for obtaining stakeholders' FPIC and engagement.

There are also independent voluntary initiatives such as the REDD+ Social and Environmental Standards (REDD+ SES) or the ACR nested REDD+ standard, which include technical and safeguard requirements for the registration of REDD+ projects. Countries have also been developing their own REDD+ policies and safeguards. For example in Brazil, Law 12.187/2009 defines quantifiable and verifiable emission reduction targets and envisages a Brazilian emission reduction market. The Brazilian states have adopted their own policies and laws regarding REDD+, such as the state policy for climate change (Law 3135/2007) in the state of Amazonas. In East Africa, a number of countries are developing REDD+ safeguards. For example, the second draft national strategy for REDD+ in the United Republic of Tanzania recognizes a

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<sup>32</sup> United Nations Declaration on the Rights of Indigenous Peoples, available at [http://www.un.org/esa/socdev/unpfii/documents/DRIPS\\_en.pdf](http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf).

<sup>33</sup> Safeguards are procedures and approaches that can help to ensure that REDD+ activities do no harm to people or the environment (UN-REDD Programme).

<sup>34</sup> Decision 1/CP.16, FCCC /CP/2010/7/Add.1, includes appendix 1, entitled "Guidance and safeguards for policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries".

<sup>35</sup> At COP17/CMP7 in Durban, South Africa in December 2011, Governments recommitted to REDD+ and resolved a set of financial and technical issues, including safeguards and reference levels (Decision -/CP.17,, available at [http://unfccc.int/files/meetings/durban\\_nov\\_2011/decisions/application/pdf/cop17\\_safeguards.pdf](http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/cop17_safeguards.pdf). FCCC/CP/2011/9/Add.1, Decision 3/CP.17, "Launching the Green Climate Fund", foresees the development of environmental and social safeguards and fiduciary principles and standards that are internationally accepted under the Fund.



number of policies and laws relevant to ensure that both livelihoods and environmental concerns are clearly addressed.<sup>36</sup>

## 2.12 How are REDD+ projects monitored?

REDD+ projects require ongoing monitoring to measure emission reductions and other data. The project proponents must present a monitoring plan to define the parameters monitored at the outset of a project. There are multiple monitoring events during a project cycle, which occur both remotely and through in situ visits. After each monitoring event, a monitoring report is prepared and submitted to a selected validation/verification body, accredited under the selected standard.

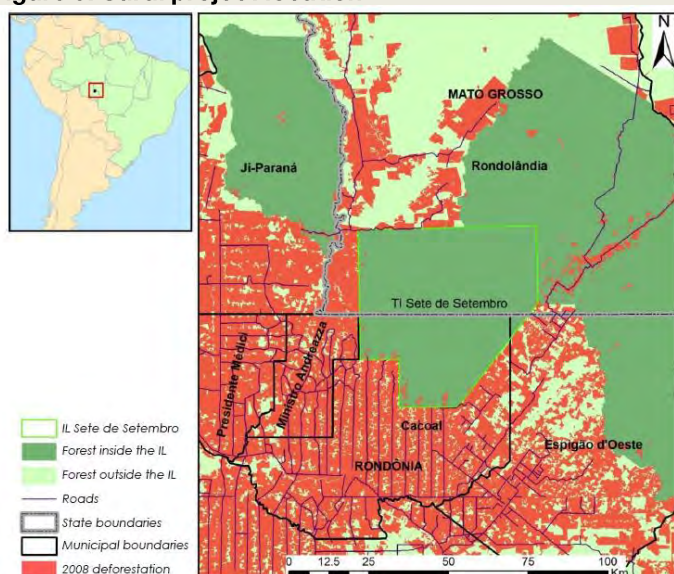
The frequency of monitoring events is determined by the standard and methodology used. Monitoring events can be carried out by the project developer or by another entity, depending on what has been agreed with the project proponents under a contract or other instrument.

An important component of the monitoring requirements, as demonstrated by existing approved REDD+ projects, relates to capacity-building among local communities and project owners through the transfer of skills to ensure that they are able to undertake ongoing monitoring tasks. Such capacity-building can serve to increase the sense of ownership among project participants and serve to improve local employment. Box 3 presents a case study of the Suruí Carbon Forest Project, which was the first example of a fully community-driven REDD+ project developed in the Amazon forest region of Brazil.

### Box 3: Community-driven REDD+ project: Case study of the Suruí Forest Carbon Project

The Suruí Carbon Forest Project is the first REDD+ project in Brazil to be driven by an indigenous community association on indigenous land. Its implementation area is located in Sete de Setembro, between the states of Rondônia and Mato Grosso.

Figure 9: Suruí project location



Source: P Soares, 2013, IDESAM, Presentation at the second BioTrade Congress.

Note: "IL" refers to indigenous land

The region is currently highly threatened by invasions, illegal logging and deforestation for the conversion of lands to pasture and agriculture.

The project is led by the association of indigenous people Metareilá Suruí, representing the Paiter-Suruí people and is conducted in partnership with several institutions, which include the following:

- Association of defence Etnoambiental Kanindé – NGO responsible for preparing the ethno-zoning, technical assistance and reforestation plan

<sup>36</sup> D Mwayafu and J Kisekka (2012), available at <http://redd-net.org/files/safeguards%20final%20web.pdf>.

- Forest Trends and the Katoomba Incubator Group – responsible for providing technical support in the formulation and implementation of the project, legal advice, training on payment for environmental services and contact with investors
- Amazon Conservation Team (Ecam) – responsible for the participatory project construction, legal and anthropological support and the development of a database of geographic information systems
- Brazilian Biodiversity Fund (FUNBIO) – founder and manager of the permanent fund of the project which will transfer the funds to the Metareilá Suruí.

The Institute for Conservation and Sustainable Development of Amazonas (IDESAM) is responsible for coordinating the technical aspects related to forest carbon, such as the definition of the baseline scenario, quantification of emission reductions and carbon stocks, formulation of the project design document (PDD) and process of validation.

The project was validated by the VCS and CCB standards in April 2012. Figure 10 summarizes the key steps in the project process.

**Figure 10: Key steps of the Suruí Carbon Forest Project**



Source: P Soares, 2013, IDESAM, Presentation at the second BioTrade Congress.

In September 2013, Natura, a leading BioTrade company in the field of personal care products, bought 120,000 verified carbon units from the project, thus becoming one of the first companies in the world to purchase carbon credits from an association of indigenous people. The resources collected will be used to finance the 50 year management plan of the Suruí people, improve their quality of life and support forest protection and management activities.<sup>37</sup>

<sup>37</sup> More information on the Suruí Carbon Forest Project is available at <http://idesam.org.br/nossos-projetos/carbono-surui/>.

## Module 3 Synergies between BioTrade and REDD+

### Learning objectives

*This module will provide the reader with the necessary information to:*

1. Recognize the similarities between BioTrade and REDD+
2. Outline the differences between the two initiatives and how these affect the design of projects
3. Identify the opportunities for the implementation of both initiatives

### 3.1 Why combine BioTrade and REDD+?

As an ecosystem, a forest has many values, some immediately identifiable such as the production of commodities such as timber, some less apparent such as ecosystem services (e.g. clean air and water). Forests have complex interactions with the Earth's atmosphere and play an important role in absorbing and storing carbon, producing oxygen through photosynthesis, encouraging cloud formation and locking in water. Rainforests support a large portion of the Earth's biodiversity. Scientific evidence also suggests that the more biodiverse an ecosystem is, the more resilient it is to natural threats such as diseases and pests.<sup>38</sup> If a forest is lost, these benefits will cease to exist. The overexploitation of timber therefore has negative consequences on local climate, biodiversity and, especially, community livelihoods.

The strong interrelations between forests, climate and biodiversity enforce the idea that these values should be managed as one, for the benefits from these ecosystems are threatened by the weakening of just one forest value. Combining BioTrade and REDD+ is therefore a logical step because it recognizes the value of many native fauna and flora species within a forest ecosystem.

Taking a holistic approach to identifying ecosystem resources will allow communities to develop projects which deliver stronger economic, social and environmental (including biodiversity) benefits. This extension of REDD+ activities to include BioTrade can offer a community more diverse economic opportunities. The protection of biodiversity is strengthened through these incentives, which encourage communities to move away from activities which degrade forest ecosystems or result in the overexploitation of biological resources.

REDD+ projects have already started to integrate multiple benefits into project designs. The use of the CCB standard, for instance allows project proponents to demonstrate that their carbon credits are worth more than one ton of carbon; they also provide good biodiversity and community outcomes. On the carbon market, the majority of the purchased certified credits are also certified under the CCB standard. For example, The State of the Forest Carbon Market 2013<sup>39</sup> states that 78 per cent of VCS projects (equivalent to a 44.5 per cent share of the forest carbon market) had joint VCS-CCB certification<sup>40</sup>. It also shows that while VCS projects had an average price of \$8.50/credit, projects claiming a CCB certification had an average price of \$9.10/credit.

CCB certification and BioTrade both require, inter alia, a demonstration of good biodiversity and community principles. The difference lies in where the economic incentives are derived from. The CCB certification is a co-benefits certification that could add value to carbon credits. BioTrade introduces new economic activities involving the trade of products and services derived from biological resources in a sustainable way. BioTrade demonstrates the value of the whole ecosystem and, as such, goes beyond the confines of carbon financing.

### 3.2 What are the synergies between BioTrade and REDD+ goals?

The synergies between the goals of BioTrade and REDD+ are clearly reflected when comparing the BioTrade principles and criteria with relevant aspects of REDD+ projects. BioTrade principles relate directly to the conservation of biodiversity (principle 1) and the sustainable use of biodiversity (principle 2). REDD+ has no specific aim to conserve biodiversity, but it is argued that the protection of native forest from deforestation and forest degradation will result in the conservation of biodiversity. Therefore, the conservation of biodiversity is a positive consequence of REDD+ activities, despite the fact that these activities are not implemented specifically for this purpose. Similarly, important linkages can be observed between the remaining five BioTrade principles and REDD+, as described in table 6.

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<sup>38</sup> International Union of Forest Research Organizations (2012).

<sup>39</sup> Forest Trends (2013).

<sup>40</sup> Forest Trends (2012).

**Table 6: BioTrade principles with REDD+ considerations**

BioTrade principle	Description	REDD+ considerations
<b>Principle 3</b>	Fair and equitable sharing of the benefits derived from the use of biodiversity (ecosystems and species)	REDD+ will introduce a new revenue stream from the sale of carbon credits. The fair and equitable sharing of the revenue should also be considered when designing benefit-sharing schemes. In essence, the implementation of the principle has been expanded beyond benefits derived from the use of biodiversity to include other ecosystem values.
<b>Principle 4</b>	Socioeconomic sustainability (productive, financial and market management)	The assessment of socioeconomic sustainability will require the consideration of REDD+ activities and carbon credit sales. It is envisaged that the extra revenue stream from carbon credits will help make both BioTrade and REDD+ activities more economically viable. The REDD+ activities should also create additional opportunities for enhanced involvement by community members in the implementation of the project, thereby contributing towards social sustainability.
<b>Principle 5</b>	Compliance with national and international regulations	This principle also applies to REDD+ projects. REDD+ projects must comply with national and international regulations.
<b>Principle 6</b>	Respect for the rights of the actors involved in BioTrade activities	This principle also applies to REDD+ projects. Free, Prior and Informed Consent is required for every REDD+ project when communities are involved. Respect for those stakeholders and actors in the project must also be upheld.
<b>Principle 7</b>	Clarity about land tenure, use and access to natural resources and knowledge	This principle is a basic requirement for REDD+, as mentioned in module 2.

### 3.3 Implementing BioTrade and REDD+: National or project-level approaches

Implementing BioTrade and REDD+ requires actions both at the national and local levels, each level of action having its own actors and focus.

#### BioTrade

At the national level, programmes and/or actions are designed to strengthen value chains and support BTOs and stakeholders in implementing BioTrade principles and criteria as described in the following examples:<sup>41</sup>

- a) National BioTrade Promotion Programme (Peru) – in Peru, the National BioTrade Promotion Programme (PNPB)<sup>42</sup> was launched in 2003 with the objective of promoting trade in goods and services derived from native biodiversity. The PNPB is closely linked to the implementation of Peru’s National Biodiversity Strategy (ENDB)<sup>43</sup> which aims to promote the use of biodiversity under sustainability criteria based on the country’s biological, cultural, social, institutional, productive, entrepreneurial, technological, legal and financial conditions. PNPB works with national institutions and international partners to provide support and technical assistance to local BTOs in areas such as market access, quality management and the development of value added

<sup>41</sup> UNCTAD and its partners implement activities in Africa, Asia and Latin America. The case studies presented in this section are related to the project priority countries: Peru and Ecuador.

<sup>42</sup> Information on the Programa Nacional de Promoción del BioComercio is available at <http://www.minam.gob.pe/diversidadbiologica/problemativa/biocomercio/>

<sup>43</sup> Estrategia Nacional de Diversidad Biológica: <http://www.minam.gob.pe/diversidadbiologica/problemativa/instrumentos-de-gestion-de-la-diversidad-biologica/estrategia-nacional-de-diversidad-biologica/>



products. The action of PNPB also encompasses the review of policies and regulations relevant to BioTrade.<sup>44</sup>

- b) National Sustainable BioTrade Programme in Ecuador (PNBSE)<sup>45</sup> – in Ecuador, PNBSE aims at “facilitating sustainable development and biodiversity conservation in line with the objectives of the CBD, through the promotion of trade and investment activities which boost the use of Ecuadorian resources”. PNBSE provides support to strengthen sectors that use native biodiversity through technical assistance and coaching, contacts, information and co-funding at each stage of the value chain.

## REDD+

Countries are looking to develop REDD+ strategies at the national level as Governments establish policies and programmes to mitigate GHG emissions from deforestation and forest degradation. National REDD+ strategies aim to provide guidance on robust and transparent accounting and verification approaches at a national or regional level. In some cases, REDD+ projects at a community level already exist. If so, the challenge for many national-level strategies is to ensure that these projects can be integrated effectively into a national strategy. National strategies provide guidance on monitoring, allocating benefits and establishing social safeguards to those at the project level.

The VCS has a jurisdictional and nested REDD+ framework which offers a global framework for accounting and crediting REDD+ programmes at a national and subnational scale.<sup>46</sup> This is a tool which could assist countries to further develop their national REDD+ programmes. This tool is currently being piloted in several Latin American countries such as Brazil, Chile, Costa Rica and Peru.<sup>47</sup>

## Guidelines for combining BioTrade and REDD+

The step-by-step guidelines for combining BioTrade and REDD+ outlined in this manual focus on a project-level approach, one that is implemented at a community scale and directly involves BTOs. Nevertheless, it is understood that BTOs and REDD+ project proponents would collaborate closely with national-level actors. Such collaboration would be particularly relevant for activities linked to the development of BioTrade value chains.

### **3.4 What are the key differences between BioTrade and REDD+?**

BioTrade and REDD+ can differ in various aspects, from their economic rationale to their project boundaries and/or their stakeholders. Understanding and taking into account these differences is important in order to develop joint projects, as follows:

- Economic activities – combining BioTrade and REDD+ will provide project proponents with two potential revenue sources. Whereas REDD+ generates economic value through avoided emissions and the trading of carbon credits, BioTrade activities are based on the commercialization of products and services sustainably derived from the local native biodiversity. BioTrade activities generate income generally in the short term while REDD+ activities only become a source of revenue in the medium to long term. The former can therefore compensate/subsidize the latter until carbon credits are sold.
- Project boundaries – a REDD+ project boundary is defined as an area under threat from deforestation or forest degradation. A BioTrade project boundary is defined by the geographic spread of the biological resources a community wishes to market and from which it can legally exploit and sell value added products. BioTrade products and services can be derived from the forest, be located in the forest-bordering habitats, or not be within the vicinity of a forest at all. Joint BioTrade and REDD+ projects will only work if biological resources to be marketed through the BioTrade Initiative are within or adjacent to a forested area under threat by deforestation and/or degradation. In this case, by implementing joint BioTrade and REDD+ projects in the concerned areas, the detrimental activities will be curtailed. Degradation will be prevented by putting in place economic incentives and the risk of leakage will be reduced as the activity causing the degradation will also be monitored and remediated.

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<sup>44</sup> MINAM (2013), available at <http://www.minam.gob.pe/diversidadbiologica/wp-content/uploads/sites/21/2013/10/Manual-Biocomercio.pdf>.

<sup>45</sup> Information on the Programa BioComercio Sostenible Ecuador is available at <http://www.biocomercioecuador.ec/biocomercio-en-el-ecuador/programa-nacional-de-biocomercio-sostenible>, and also referenced on the BioTrade website ([www.biobio.org](http://www.biobio.org)).

<sup>46</sup> The framework is available at <http://www.v-c-s.org/JNRI>.

<sup>47</sup> For more information, see <http://www.v-c-s.org/jnr-pilot-program>.

- Actors involved – implementing a REDD+ project requires fewer actors than a BioTrade project. Of those actors who are responsible for training and assessments, many roles may be modified to accommodate both BioTrade and REDD+ activities, such as risk assessments or leakage and field surveys (expanded upon in module 4, step 3.3). Additional actors are introduced through the marketing and sale of carbon credits and BioTrade products and services. The number of actors this process will introduce will vary depending on the strategy chosen to market credits and the selected value chain(s). For example, electing to use a carbon credit broker will reduce the time spent dealing with potential offset purchases. Another potential credit marketing strategy is to offset the value chain with the products and services produced from the BioTrade activities (further explained in module 3, section 5).

Similarly, activities related to the development of BioTrade value chains can require the involvement of a high number of stakeholders but can be coordinated with the support of local, national or international institutions active in the field of BioTrade or in biodiversity-based sectors. Finally, it has to be noted that the export of BioTrade product/services will lead to the involvement of a greater number of stakeholders.

### 3.5 What are the opportunities in combining BioTrade and REDD+?

#### Combining costs and benefits

There are two potential revenue streams that result from combining BioTrade and REDD+ but both types of activity come with specific implementation costs. The combined implementation of BioTrade and REDD+ related activities will allow for these costs to be reduced, as noted in table 7.

**Table 7: Combined and specific costs of joint BioTrade and REDD+ projects**

BioTrade-specific costs	Shared costs	REDD+-specific costs
<ul style="list-style-type: none"> <li>Species and ecosystems identification and mapping</li> <li>Value chain assessments and formulation of strategies</li> <li>BTO assessments, including compliance with the BioTrade principles and criteria<sup>48</sup></li> <li>Implementation of value chain strategies and BTO workplans</li> </ul>	<ul style="list-style-type: none"> <li>Community engagement</li> <li>Capacity-building, training and workshops</li> <li>Preparation of project documents</li> <li>Project site management and monitoring</li> <li>Forest inventories and biodiversity management plans/resource assessments</li> </ul>	<ul style="list-style-type: none"> <li>Calculation of avoided emissions</li> <li>Carbon credit registry costs</li> <li>Validation and verification costs</li> </ul>

By reducing the costs of project implementation while maintaining both revenue streams, the economic viability of a project will be made stronger.

#### Offsetting the value chain

A carbon credits sales strategy can be fully independent of BioTrade activities if the project proponents wish. An opportunity, however, will exist to market credits to actors in a BioTrade value chain, for instance downstream actors. For example, credits could be offered to the end purchaser of BioTrade products to offset the delivery of such products, thereby combining the two revenue streams into the same market. This option could vary depending on the types of products and services selected for BioTrade. The example of the Suruí Carbon Forest Project (see box 3) shows that large companies operating in BioTrade can engage in the purchase of carbon credits.

Another option is low carbon or carbon neutral products and services that are marketable and are suited particularly well for markets which rely on brand purchasing. For example, conscientious travellers may wish to offset their ecotourism trips. Another example would be an eco-friendly agricultural product (e.g. cocoa) or clothing business wishing to market their environmentally friendly approach to niche markets for the food sector or fashion. Several other sectors, including cosmetics and handicrafts, are also influenced by such environmental and social certifications.

<sup>48</sup> BTOs working with the selected goods and services that agree to fulfil BioTrade principles and criteria through the implementation of workplans. Activities under such workplans are supported by BioTrade partners and programmes.

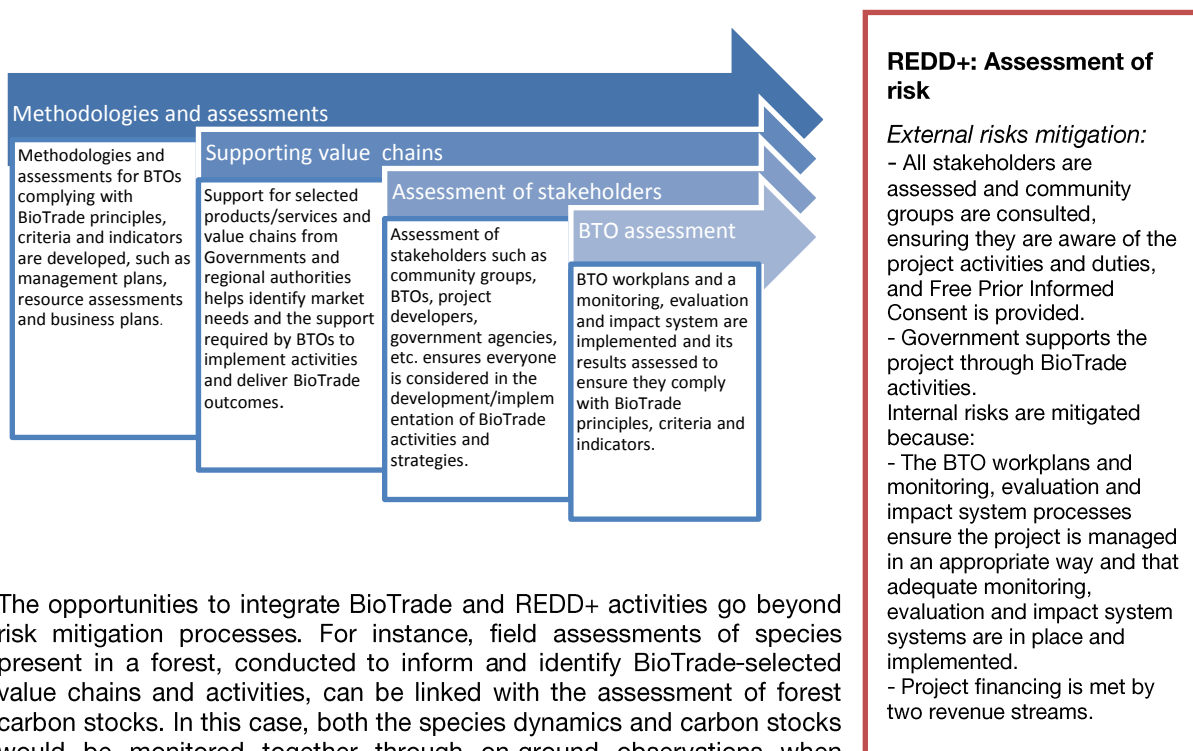
## Integrating capacity-building and workshops

Both BioTrade and REDD+ activities require extensive consultation and capacity-building among project participants and proponents and local communities. For instance, the process of implementing BioTrade activities involves steps to identify products and stakeholders, assess value chains and build capacity for the implementation of sustainable resource management practices and BioTrade businesses. BTOs implement BioTrade activities and continually monitor and evaluate the fulfilment of their workplans to ensure they comply with BioTrade principles and criteria.

A key component of REDD+ is the management of risks associated with the project. These risks can be natural (i.e. fire, pests or disease resulting in high tree mortality in the area), internal (i.e. poor project management structure, market or financing) or external (i.e. corruption, land rights being revoked, community not supporting the project or changes in policy environment not favouring REDD+ projects). The implementation of REDD+ activities therefore requires conducting a risk assessment. In the context of combined BioTrade and REDD+ activities, this assessment could be integrated into BioTrade-related capacity-building activities and workshops. For example, the mapping and assessment of stakeholders in BioTrade activities would ensure that the relevant community groups are consulted before activities take place. From the perspective of a joint project, this process may be linked to the assessment of community engagement, which is a requirement for the assessment of external risks under REDD+. The assessment of community engagement is to ensure that the community provides consent to the REDD+ project and supports the activities. When BioTrade and REDD+ are combined, local communities consent to support and participate in both types of activities. Moreover, by gaining the support of stakeholders, the risk of community groups resisting the project is reduced.

The assessment of internal risks under REDD+ is another example of the potential for combining BioTrade and REDD+ activities. This assessment, which ensures that those managing the project have the necessary technical capacity, can be combined with the assessment of skills and resources undertaken by BTOs in order to develop their workplans. A suitable workplan and monitoring and evaluation system covering BioTrade and REDD+ activities would then mitigate risks associated with, inter alia, poor management, inadequate skill sets and ineffective monitoring frameworks. Figure 11 provides details of some BioTrade activities which may be incorporated into the assessment and mitigation of risks associated with REDD+ projects.

**Figure 11: The potential for mitigating REDD+-related risks through BioTrade activities**



The opportunities to integrate BioTrade and REDD+ activities go beyond risk mitigation processes. For instance, field assessments of species present in a forest, conducted to inform and identify BioTrade-selected value chains and activities, can be linked with the assessment of forest carbon stocks. In this case, both the species dynamics and carbon stocks would be monitored together through on-ground observations when appropriate.

## Module 4 Developing and implementing BioTrade and REDD+ projects

### Learning objectives

*This module will provide the reader with the necessary information to:*

1. Outline the steps for developing and implementing BioTrade and REDD+ projects
2. Identify a viable project
3. Define the components of good project design

This module details a pilot methodology for developing and implementing joint BioTrade and REDD+ projects. The methodology focuses on enabling a mutually supportive development of BioTrade and REDD+ activities within the same project area and in respect of the specific requirements of the two approaches. It includes the following 6 steps:



### Step 1 – Identify project area and species/ecosystems with BioTrade potential

#### a) Forested areas

To be eligible under REDD+, the selected project area must be a forest<sup>49</sup> under threat of deforestation and/or forest degradation. The threat must be known to exist from step 1. It will be further categorized and quantified during step 3.

Combining BioTrade activities in the same project area requires careful planning. BioTrade-like activities may already exist in the selected forest area, in which case moving to enforce the BioTrade principles in these activities should be more straightforward. If BioTrade-like activities do not exist, the potential products and services for BioTrade should be identified. A list of species/ecosystem services and products/services with business potential should be constructed. The list should include information such as the product, species name, ecosystem, location, geographical distribution (as BioTrade supports mainly native species), supply, market potential, relevant regulation, production system and community involvement in the generation of the selected product/services. It is also important to understand the ecosystem/habitat of the species. If the species is found within the forest, it may be included within the area of REDD+ activities. Species may also be found in the bordering habitat, adjacent to the area of REDD+ activities. If the species cannot be found within or adjacent to the REDD+ area, a joint project might not be feasible.

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<sup>49</sup> A forest is defined as “a minimum area of land of 0.05–1.0 hectares with tree crown cover (or equivalent stocking level) of more than 10–30 per cent with trees with the potential to reach a minimum height of 2–5 metres at maturity in situ” in decision 11/CP.7 of the Marrakesh Accords, FCCC/CP/2001/13/Add.1, 21 January 2002.



## b) Land tenure

For both BioTrade and REDD+ projects, evidence must be provided to show that no disputes exist over who has land tenure on the proposed project site. The land may be owned by an individual, a community, an organization or a Government. Beyond land ownership, the rights to the use of the land and its biological resources must be in place before the project starts. REDD+ projects also need to consider carbon rights. In some instances, it is assumed that carbon rights are directly related to the land tenure, but this is not always the case. As some countries do not appropriately recognize carbon rights, the owner(s) of these rights need to be clearly identified.

Evidence must be provided to demonstrate that the proponents have rights to the land, carbon and biological resources, using which BioTrade products and services will be produced and traded. The evidence must be in the form of a document that can stand in a legal court. The land rights must be secure for the project lifetime (which can be no less than 30 years for a REDD+ project). The risk associated with losing land rights should be considered when implementing the non-permanence risk buffer (see step 3).

## Step 2 – Identify stakeholders and the community engagement strategy

Key stakeholders of joint BioTrade and REDD+ projects are described below.

Stakeholders	Description
<b>Project proponents</b>	<p>Project proponents are those responsible for implementing the project activities and also those who receive the project benefits.<sup>50</sup> For REDD+ projects, project activities will include patrolling the site to prevent illegal activities, monitoring the site for natural disturbances and reporting on the monitoring activities. For BioTrade, project activities can involve, among others, the collection/harvest/production/manufacturing and selling of biodiversity-derived products and services, monitoring species, managing BioTrade businesses and ensuring that the project activities comply with BioTrade principles and criteria. In both cases, the proponents will help with the delivery of carbon credits and of the BioTrade products/services to the market. Project proponents must clearly indicate the responsibilities of each actor in the project and how the benefits are to be shared. The proponents will make decisions on the selected project activities by conducting workshops on:</p> <ol style="list-style-type: none"> <li>1. Assessing the BioTrade potential;</li> <li>2. Identifying the REDD+ baselines; and</li> <li>3. Assigning roles to deliver the project and the training required.</li> </ol> <p>Community engagement involves assessing the skills and capacity of stakeholders and designing appropriate capacity-building activities. For example, capacity-building activities from the Avoided Deforestation Project (Manaus) Limited (ADPML) Portel-Para REDD+ project<sup>51</sup> in northwest Brazil (state of Para) involves workshops that cover good forest management practices, land titling and participatory rural appraisals.</p>
<b>Project developer</b>	<p>A project developer is typically an organization that assists in the formulation and implementation of the project. This involves, inter alia, conducting fieldwork and calculations, providing guidance during BioTrade assessments, supporting the implementation of BioTrade principles and criteria, preparing project documents as required by the selected standard, submitting the project for validation/verification and conducting monitoring, if required by the project proponents. A project developer may therefore be described as an expert in delivering projects on behalf of project proponents.</p>
<b>Non-governmental organizations</b>	<p>NGOs with knowledge of communities, resource management and/or legal frameworks operating in the proposed region and activity may be brought in to advise on community engagement, capacity-building and community rights. Environmental NGOs may be valuable sources of information on species, ecosystems and environmental services in the selected project area.</p>

<sup>50</sup> Benefit sharing for REDD+ can be defined as agreements between stakeholders on the distribution of monetary benefits from the commercialization of forest carbon, as noted in IUCN (2010).

<sup>51</sup> ADPML Portel-Para REDD+ project, VCS project database, available at <http://www.vcsprojectdatabase.org> (accessed 5 May, 2013).

**Local government**

Local governments are usually keen to become involved in project activities, especially if they promote local development and are intended to ensure that communities are fairly represented in the project development process. The involvement of local governments is also a way of conferring more credibility to and acceptance of the project, as well as of allowing for an enabling policy environment supportive of the project.

**Downstream actors**

BioTrade products and services will flow down a value chain. This chain may include, inter alia, manufacturers, exporters, importers, distributors, retailers, etc. from biodiversity-based sectors such as pharmaceuticals, personal care, fashion, food and sustainable tourism, among others, that ensure the BioTrade products and services reach the end consumers.

**End consumers and offset purchasers**

For carbon credits, the end consumers are organizations that are looking to purchase GHG offsets. For BioTrade, the products and services can be sold directly to the final consumer (e.g. through BTO retail stores) or indirectly through downstream actors (e.g. retailers and distributors working in niche markets).

Steps 1 and 2 consider matters related to the project area and relevant stakeholders of joint BioTrade and REDD+ projects. The subsequent steps focus on methodological considerations.

### Step 3 – Define the baseline and methodology

#### Step 3.1 What is the baseline scenario?

REDD+ projects are designed to protect forests from deforestation and degradation. The Food and Agriculture Organization of the United Nations (FAO) defines deforestation as “the conversion of forest to another land use or the long-term reduction of the tree canopy cover below the minimum 10 per cent threshold”.<sup>52</sup>

The VCS offers a specific definition of forest degradation for the consideration of REDD+ projects, as follows: “the persistent reduction of canopy cover and/or carbon stocks in a forest due to human activities such as animal grazing, fuel-wood extraction, timber removal or other such activities, but which does not result in the conversion of forest to non-forest land (which would be classified as deforestation), and qualifies as forests remaining as forests, such as set out under the IPCC 2003 Good Practice Guidance”.<sup>53</sup>

The baseline scenario of a REDD+ project can be either deforestation, degradation or both providing they are spatially discrete.<sup>54</sup> These activities can also be planned (designated and sanctioned) or unplanned (unsanctioned or illegal). For example, in the same project area, a project could aim to avoid illegal deforestation and illegal degradation. An exclusive area is defined to avoid deforestation and the remaining area will avoid degradation. Figure 12 illustrates the possibilities of a forest degradation baseline scenario.

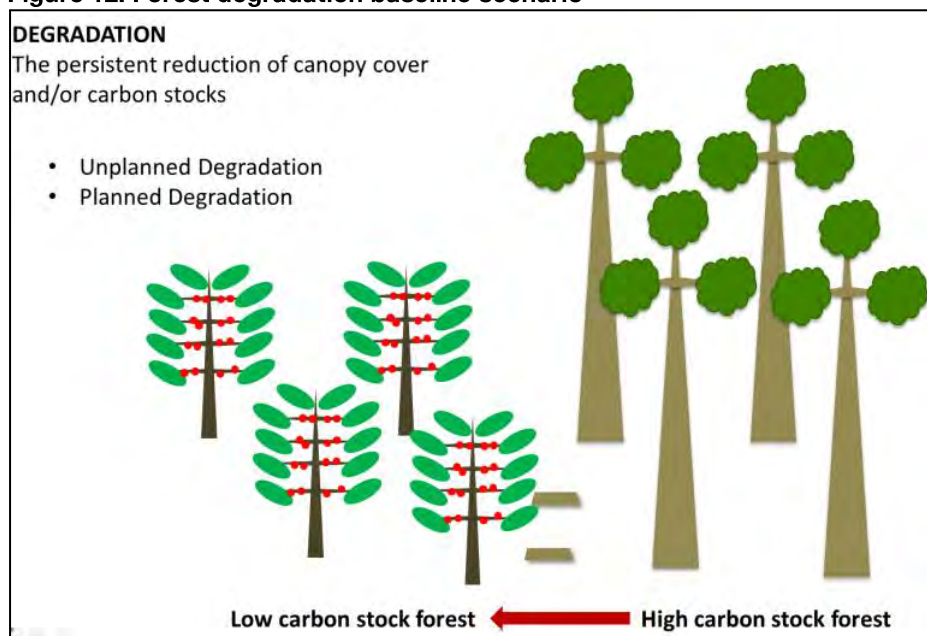
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<sup>52</sup> The definition is available at <http://www.fao.org/docrep/009/j9345e/j9345e07.htm>.

<sup>53</sup> VCS (2013).

<sup>54</sup> Spatially discrete is a term used to describe activities which cannot occur in the same area; they must have boundaries which do not overlap in any way.

**Figure 12: Forest degradation baseline scenario**



Once it has been decided whether the forest is being protected from deforestation, degradation or both, and whether these activities are planned or unplanned, the next step is to identify the driver(s) and the level of the threat. For unplanned activities, an area is identified where these activities have already taken place. This area is then used as a reference to what could happen in the area being protected. For example, if the reference area has seen unplanned deforestation at a rate of 5 per cent each year due to subsistence agriculture, and there are signs this driver exists within the project area, the reference area is used to predict what could happen in the project area in the future. Planned activities are easier to predict, as the drivers and level of threat are documented clearly in the right to harvest or convert the forest.

### Step 3.2 How is a methodology selected?

Defining the baseline scenario is crucial to selecting an appropriate REDD+ methodology and designing a project monitoring plan. Some methodologies are specific to a baseline activity, for example VCS methodology VM0015 is specific to avoiding unplanned deforestation.<sup>55</sup> Methodologies are chosen taking into consideration the baseline scenario, the standard covering the baseline activity<sup>56</sup> (and the forest types the methodology is designed for).

### Step 3.3 What are risk, leakage and additionality?

After the methodology has been selected, a pilot study is conducted to determine the threats and potential carbon stock of the forest. Before proceeding to a full project, the following considerations should be made:

1. Assessment of risk (or non-permanence) – as mentioned in module 3, from a REDD+ perspective, risks to the project can be natural (i.e. fire, pests or disease resulting in high tree mortality in the area), internal (i.e. poor project management structure or financing) or external (i.e. corruption, land rights being revoked or community not supporting the project). The concept of non-permanence refers to the possibility that emission reductions/carbon sequestration induced by the project may only be temporary. As such, it is used to integrate the eventuality of a loss of carbon stock into the project design. The VCS uses a calculator to quantify risk.<sup>57</sup> Risk is expressed as a percentage called the non-permanence risk buffer. This percentage is removed from the total credit allocation and issued as a non-saleable offset unit which is held back until the end of the project. This is an insurance mechanism in case the project encounters any unforeseen emissions. If the risk is too high, the project is not eligible, and therefore the risk assessment must be done before embarking on future steps. BioTrade activities could be used as a risk mitigation instrument. They could result in greater community cooperation, increased

<sup>55</sup> The methodology is available at <http://v-c-s.org/methodologies/VM0015>.

<sup>56</sup> For instance, as discussed in module 2, Plan Vivo only implements projects that avoid deforestation.

<sup>57</sup> The calculator is available at <http://www.v-c-s.org/sites/v-c-s.org/files/AFOLU%20Non-Permanence%20Risk%20Tool,%20v3.2.pdf>.

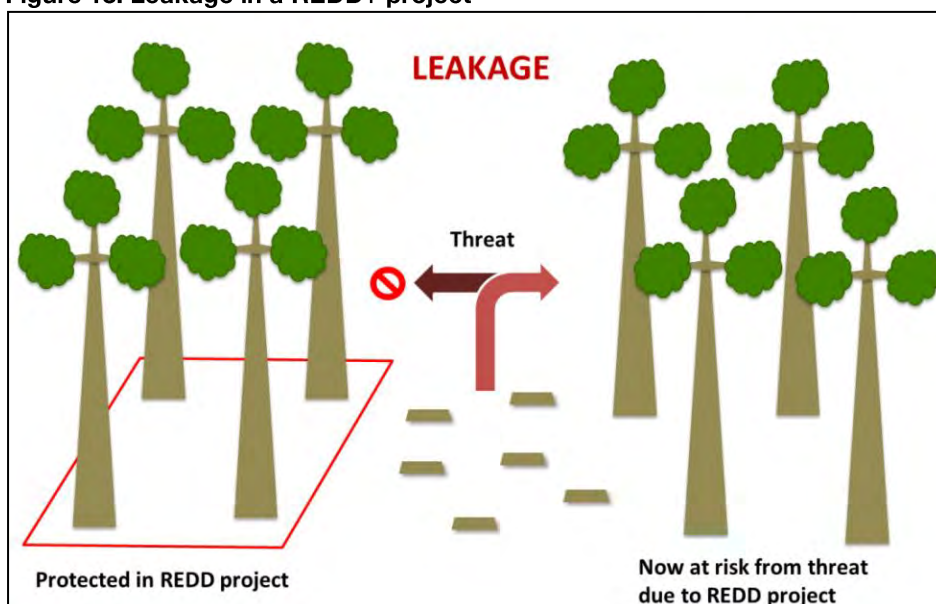
financial stability particularly by generating benefits in the short-term and a stronger management framework.

2. Leakage – “leakage refers to the increase in GHG emissions outside the project boundary (but within the same country; i.e. international leakage is not accounted for) which is measurable and attributable to the project activity”.<sup>58</sup> Figure 13 illustrates how leakage involves the transfer of a threat from the project area to neighbouring forest land. There are two types of leakage, activity shifting and market leakage, which are explained below. When total avoided emissions are calculated, emissions from leakage are subtracted. Therefore, leakage has a large influence over the final credit allocation of a project and should be assessed and monitored throughout the project.

Activity shifting leakage occurs when a threat is shifted (i.e. unsustainable agriculture) to another area of forest which is unprotected due to the REDD+ project being implemented in the area of original threat.

Market leakage occurs when an area is protected from wood extraction, but another area is logged to meet the market demand. Therefore, the reduced emissions the REDD+ project claims are not reduced; they are simply relocated to another site. However, as previously mentioned, leakage is not considered beyond a country’s boundary.

**Figure 13: Leakage in a REDD+ project**



3. Additionality – all projects must be additional, i.e. the REDD+ project activity to avoid deforestation and/or land degradation would not have occurred in the absence of carbon finance”. Projects which are not additional are not eligible under any standard. For example, a project is not additional if the project area is already protected under a different financing mechanism, or there is no evidence to show that the forest is under threat from deforestation or degradation. There are tools to demonstrate additionality, such as the VCS additionality tool.<sup>59</sup> This is a key concept that needs to be considered if BioTrade activities are already implemented in the project area since they are likely to result in a reduction of threat to the forest.

#### Step 3.4 How are carbon stocks assessed?

Carbon stocks can be identified using direct or indirect measurements, as follows:

- Direct measurement – field plots are areas of forest that are marked out in the project area to be measured. The forest cannot be sampled in its entirety due to resource constraints and therefore the plots allow for the taking of samples representative of the forest area. A sample is a

<sup>58</sup> VCS (2013).

<sup>59</sup> The tool is available at <http://www.v-c-s.org/methodologies/VT0001>.

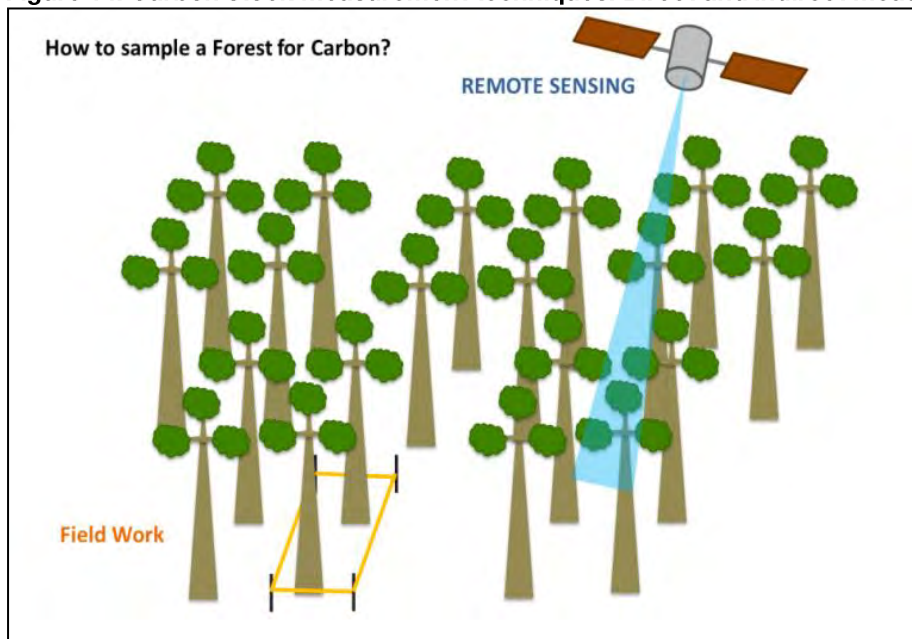


measurement of the trees present in the plot. The volume of trees can be converted to the amount of carbon in trees and these values may be used to determine the mean carbon stock in the project area. The forest and carbon inventory, through field plots, can be developed back-to-back with the elaboration of the resource assessment and management plan that must be developed by the BTO to guarantee the sustainable use of the selected species and ecosystems in the project area.

- Indirect measurement – tools such as remote sensing (the use of satellite imagery) or light and radar measurements or published figures in peer reviewed material will provide an estimation of the mean carbon stock. Some field measurements are still required to assess the accuracy of the carbon stock measurements taken from indirect measurements but, generally, indirect measurements require less exhaustive field sampling.

Figure 14 presents an overview of the direct and indirect measurement options.

**Figure 14: Carbon stock measurement techniques: Direct and indirect measurement options**



Source: L Rimmer, 2013, Forests Alive, Presentation at the second BioTrade Congress.<sup>60</sup>

### Step 3.5 What are the statistical requirements?

Different standards require different statistical parameters to be met when assessing carbon stocks. For example, VCS requires field work to be completed at a confidence level of 90 per cent, with a statistical error of 15 per cent. The following parameters are used in forest carbon projects:

- Mean carbon stock – the sum of the carbon stock from each plot divided by the number of plots. This figure is calculated as tons of carbon per hectare (tC/ha). The parameter is used to calculate the total carbon stock of a forest by multiplying the mean carbon stock with the forest area:

$\text{Total carbon stock of forest (tC)} = \text{mean carbon stock (tC/ha)} * \text{area of forest (ha)}$
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- Standard deviation – a statistical parameter to describe the spread of data around the mean.
- Standard error of the mean – a parameter to describe how accurate the mean value is.

Tools such as the Winrock International Sampling Calculator<sup>61</sup> are available to help project developers achieve these statistical parameters. Once the user has entered the required confidence level and statistical error as defined by the selected methodology, as well as some preliminary data from a pilot study, the calculator will indicate the number of plots needed to meet the required level of certainty.

If the data collected does not meet the required statistical parameters, more data should be collected accordingly. For example, plots may be sampled to determine the mean carbon stock of a forest (tC/ha)

<sup>60</sup> The field plot measurement option is represented by a yellow rectangle.

<sup>61</sup> More information on the use of the calculator is available at <http://www.winrock.org/resources/winrock-sample-plot-calculator>.

and a statistical analysis of the data collected might determine the standard error of the mean (the parameter which determines accuracy of the mean value) as 34 per cent; higher than the required 15 per cent, as defined by the VCS methodology. More plots would thus be required to reduce the standard error of the mean parameter before the mean carbon stock could be used in the calculation of total carbon stocks (tC).

### Step 3.6 How is BioTrade integrated into the REDD+ baseline work?

From step 1 (identify project area), there should be some indication of the potential BioTrade products and services that could be derived from the identified native species and ecosystems (i.e. feasible to develop value added products or services such as ecotourism or cosmetic products as conducted according to stage 1 of Guidelines for a Methodology to Support Value Chains for BioTrade Products).<sup>62</sup>

During step 3, further action is taken in order to select and assess the value chains to be strengthened and analyse the challenges and opportunities for local collectors and/or producers to comply with the BioTrade principles and criteria. As is the case for REDD+ activities, the tasks described in the BioTrade guidelines require bringing together stakeholders for workshops and consultation activities at which qualitative and quantitative assessments will be conducted.

To carry out activities at the value chain level, the project proponents should, as much as possible, seek collaboration from BioTrade partners (i.e. national BioTrade programmes or regional programmes working in the country), entities responsible for trade promotion or the sustainable use of biological resources and the relevant civil society organizations and academia. This would permit the reduction of transaction costs, facilitate stakeholder involvement and, ultimately, result in increased opportunities for the commercialization of the selected BioTrade products and services derived from the project area.

### Selecting value chains to be supported<sup>63</sup>

In accordance with the UNCTAD value chain support methodology, the BioTrade value chains to be strengthened are identified on the basis of a matrix analysis involving experts and value chain actors with knowledge of the product groups identified during steps 1 and 2.<sup>64</sup> The matrix analysis is centred on the following four focus points: economy and market; environment and biodiversity; social and political considerations; and technology and infrastructure. Each focus point is assessed qualitatively and allocated a score (0, 1 or 2; 0 indicates a limiting factor and 2 indicates few limitations to that particular focus). The scores are added together for each product group and the product groups ranked from highest (the value chain with the least limiting factors) to lowest. To allow for a comprehensive analysis, the grading process should as much as possible involve actors with experience in different areas of activity such as, but not limited to, production, marketing, sector regulation, retailing/distribution and export/import.

### Participant assessment of selected value chains

The assessment aims to analyse the challenges and opportunities at each step of the value chain, as well as the current value chain gaps in fulfilling market requirements. With this information, solutions to support the development of the selected value chains are sought jointly with all value chain stakeholders involved in the participatory assessment. The analysis covers, inter alia, the focus areas illustrated in table 8.

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<sup>62</sup> UNCTAD (2009a).

<sup>63</sup> The following sections on value chain selection and assessment are based on the UNCTAD value chain support methodology (UNCTAD, 2009a). See module 1 for an overview of this methodology.

<sup>64</sup> Ibid.

**Table 8: Requested information for the development of a BioTrade assessment<sup>65</sup>**

<b>Economy and market</b> <ul style="list-style-type: none"><li>▪ Supply</li><li>▪ Demand</li><li>▪ Quantity requirements</li><li>▪ Costs</li><li>▪ Means of financing</li><li>▪ Access to market information</li></ul>	<b>Environment and biodiversity</b> <ul style="list-style-type: none"><li>▪ Availability of raw materials</li><li>▪ Sustainable use of raw materials</li><li>▪ Impact of the productive process</li><li>▪ Biodiversity conservation practices</li></ul>
<b>Social and political considerations</b> <ul style="list-style-type: none"><li>▪ Benefits generated</li><li>▪ Employment</li><li>▪ Company organization</li><li>▪ Legislation</li><li>▪ Taxes</li><li>▪ Institutional support</li></ul>	<b>Technology and infrastructure</b> <ul style="list-style-type: none"><li>▪ Existing capacity for market entry</li><li>▪ Adequate infrastructure for production and marketing</li><li>▪ Adequate technology</li><li>▪ Technical support</li></ul>

The BioTrade assessments are implemented through the organization of one or several workshops on the selected value chains, involving key stakeholders such as export and import companies, processors, retailers/distributors, government agencies, academic institutions, service providers and donors, among others. These consultations result in the production of the following four main outputs:

- A comprehensive stakeholder mapping and value chain assessment (including costs, profits, time frames, etc.)
- The identification of and compliance with requirements to access the target market
- The analysis of gaps to fulfil market requirements and the formulation of solutions to address the gaps
- A prioritization of the solutions/actions and funding in order to develop the value chain and facilitate the commercialization of its products/services<sup>66</sup>

Another important benefit of the participatory assessment is to facilitate the exchange of information, build consensus between value chain actors and contribute to the emergence of a holistic view of the value chain and acknowledgement of the common needs and actors involved.

#### Assessment of BTOs

As discussed in module 1, the compliance of BTOs with the BioTrade principles and criteria is evaluated through iterative conformity assessments. This is done by grading BTOs based on several clusters of indicators, each linked to a given BioTrade criteria. Once all the indicators have been assessed, an average grade per indicator is calculated by dividing the total score of the BTO on a given principle with the maximum possible number of points for this principle.

Box 4 features an extract of an evaluation grid which illustrates the relationship between the principles and criteria and the indicators used in the framework of a BTO assessment.

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<sup>65</sup> UNCTAD (2009a).

<sup>66</sup> The prioritized actions are listed along with their respective steps, expected outcomes and timelines.

**Box 4: Extract of an assessment form** (criteria 1.1 and criteria 1.2)

<b>Name of BioTrade organization</b>	
Product	
Category	

Rating	
n.a.	Not applicable
0	Non compliance
0.5	Partial compliance
1	Compliance

Principle	Criteria	Indicator	Workplan and survey	Comments/ observations
1. Biodiversity conservation	1.1 The BTO implements activities oriented towards the maintenance, recuperation and/or restoration of ecosystems and native species (in particular endangered ones).	1.1.1. The BTO implements practices that contribute to the conservation of native fauna and flora species in its area of influence.		
	1.2 The BTO performs activities to maintain the natural genetic variability of organisms from which its products are obtained.	1.2.1. The BTO undertakes, directly or through third parties, programmes to monitor fauna and flora populations within its area of influence		
		1.2.2. The activities contribute to the conservation of the varieties or races within the species from which the BTO's products are obtained.		

Source: Adapted from an evaluation form of the National Sustainable BioTrade Programme (Ecuador).

Assessment results are used to identify areas of improvement and design BTO workplans with concrete activities (i.e. development and implementation of sustainable resource management practices) that will in turn enable each BTO to increase its level of compliance with BioTrade principles.

The box below provides examples of BTO assessment frameworks

**Box 5: Examples of BTO assessment frameworks**

The BioTrade Initiative provides the overall framework of the BioTrade principles and criteria which are then adapted to specific sectors by BioTrade partners. For instance, the Union for Ethical BioTrade (UEBT) has developed a comprehensive framework for the personal care and food sectors.<sup>67</sup> Similarly, in relation to ecosystem services, the BioTrade programme in Ecuador and Rainforest Alliance have developed a framework for sustainable tourism activities.<sup>68</sup> As well, in Peru, the Ministry of Environment and the Peruvian Institute of Natural Products<sup>69</sup> have released an assessment framework for the BioTrade activities taking place in the country.<sup>70</sup>

<sup>67</sup> [http://ethicalbiotrade.org/dl/public-and-outreach/Ethical-BioTrade-Standard\\_2012.pdf](http://ethicalbiotrade.org/dl/public-and-outreach/Ethical-BioTrade-Standard_2012.pdf)

<sup>68</sup> More information is available at [http://biocomercioecuador.ec/remos\\_downloads/Guia%20aplicacion%20PyC%20Turismo.pdf](http://biocomercioecuador.ec/remos_downloads/Guia%20aplicacion%20PyC%20Turismo.pdf).

<sup>69</sup> Instituto Peruano de Productos Naturales.

<sup>70</sup> More information is available at <http://www.minam.gob.pe/diversidadbiologica/wp-content/uploads/sites/21/2014/02/Manual-de-Uso-de-la-Herramienta.pdf>.



## Step 4 – Define the project activities and monitoring plans

### Step 4.1 What is the project scenario?

The project scenario outlines the activities proposed by a project.

In a REDD+ project, the objective is to protect a forest from deforestation and degradation. The project activities are those which work towards protecting the forest and can include monitoring the forest area and reporting to ensure that a loss of carbon stock through illegal deforestation and forest degradation does not occur. Monitoring also includes mitigating risks identified in step 3. Furthermore, for BioTrade strategies, workplans (i.e. including management plans for the ecosystems and species used) will contribute to ensuring that the collection/harvesting of species is done sustainably without threatening the ecosystems or its species (and their traditional use by local communities).

When baseline emissions are calculated, the total avoided emissions over the project lifetime are divided by the number of years in the project, providing a value for avoided emissions per year. Emissions that occur during the project lifetime (project emissions) are calculated as they happen and therefore differ each year.

Project emissions are emissions from natural disturbances and illegal logging. These emissions cannot be predicted but once they occur they can be accounted for in the monitoring report. Therefore, the calculation of project emissions occurs in step 6 (monitoring and commercialization). For example, during a monitoring period, part of the forest could be affected by illegal logging. Therefore, the emissions from the illegal logging would need to be deducted from the baseline emissions which assumed the forest would not be cut down. The emissions from the illegal logging must be calculated and subtracted from the baseline emissions. The area should be monitored for illegal logging continuously throughout the project lifetime.

Although project emissions remain unknown, the project activities need to be defined in a workplan as part of the project description document. These activities will define how the forest will be protected and monitored and how risks are to be mitigated.

### Step 4.2 How does the Climate, Community and Biodiversity standard fit into the project scenario?

A project could extend its activities to demonstrate a clear benefit to biodiversity and communities in the area it covers. These activities can be validated and verified using the CCB standard.<sup>71</sup> This standard is not a carbon standard and therefore cannot be used to calculate avoided emissions. The CCB standard has often been combined with REDD+ projects due to the benefits REDD+ projects deliver to biodiversity and local communities. The CCB provides a framework to validate and monitor biodiversity and community activities (see module 2, section 8 on standards).

Examples of biodiversity activities include the management of a forest to prevent invasive species and pests, the rehabilitation of degraded ecosystems and specific management to protect endangered species. Examples of community activities can include the use of revenue from carbon credits to improve community livelihoods, the protection of cultural heritage and the development of economic activities beyond the revenue from carbon credits.

By implementing a REDD+ project with CCB certification, project proponents are able to demonstrate that the project delivers multiple benefits which increases the value of the carbon credits on the voluntary market. CCB requirements and objectives are also compatible with BioTrade, as seen in table 9.

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<sup>71</sup> More information is available at <http://www.climate-standards.org/>.

**Table 9: Overview of the convergence between the Climate, Community and Biodiversity standard and BioTrade**

PRINCIPLES CONVERGENCE		
	CCB	BCT
Clarity – land property and access to resources	✓	✓
Distribution of the benefits	✓	✓
Improving the living conditions; organizational / profitability	✓	✓
Legal framework fulfillment	✓	✓
Ecosystem and biodiversity services preserved and /or improved	✓	✓
Information access and respect to all actors involved	✓	✓

Source: D Valenzuela, 2013, Presentation at the second BioTrade Congress.

#### Step 4.3 How is the BioTrade strategy developed?

The formulation, implementation and monitoring of a sector/value chain strategy are the final steps under the UNCTAD value chain support methodology.

The sector strategy builds on the results of the BioTrade assessment and in particular on the prioritized solutions/actions and funding identified to develop the value chains and support the commercialization of the selected BioTrade products/services. The strategy will further develop these actions, indicating specific timelines, listing available resources (both financial and in kind) and indicating the roles and responsibilities of the actors in charge of its implementation. The strategy will also include guidelines to formulate and implement monitoring and evaluation systems and develop a funding strategy.

An important step in ensuring the adherence of the value chain actors to the sector strategy is not only their inclusion in the endorsement of the strategy but also the emergence of a win-win scenario for all the actors involved, hence developing activities at both sector/value chain and BTO level is important.

Table 10 is an extract from the Colombian natural ingredients for cosmetics and the pharmaceutical sector strategy. It shows the variety of stakeholders (e.g. suppliers, laboratories, funding institutions, trade and import promotion agencies and the BioTrade programme) and the crucial role of the BTOs in the success of the planned actions (development of resource management plans and implementation of good agricultural practices).

**Table 10: Extract of a natural ingredient sector strategy in Colombia**

OVERALL OBJECTIVE	SPECIFIC OBJECTIVES	ACTIVITIES	EXPECTED OUTCOMES	INDICATORS	RESPONSIBLE	FINANCIAL SOURCES	PERIOD	Results achieved (January to July 2004)
		Develop management plans for producers and suppliers of raw materials, for the companies involved in the EDP.	Management plans for raw materials for producers and company suppliers. (Supply)	Number of management plans developed; percentage of companies in the EDP that are implementing the plans.	BioTrade Colombia	Consultant: \$5,000 from GEF (Global Environmental Facility)	Dec. 2003 to Apr. 2004	Four companies have finished their management plans: Asprome, Morenos Ltd., Medick and Labfarve. The other three companies in the EDP are starting to design their management plans with CBI.
1. Technical, productive, technological, legal and commercial consolidation of seven companies that are part of the Export Development Programme (EDP).	1.1 Consolidation of producers of raw materials.	To train entrepreneurs and suppliers in the implementation of Good Agricultural Practices (GAP).	Entrepreneurs and suppliers from the EDP participating in training and GAP-implementation workshops.	Number of enterprises and suppliers trained in GAP.	BioTrade Colombia	Consultant: \$3,000 GEF and BTFP (first phase)	Dec. 2003	A training workshop was developed with the laboratories and their suppliers of medicinal plants. 7 laboratories and 15 suppliers were trained in Good Agricultural and Collection Practices (GACP) and quality assurance.
		Design and implement a plan to organize both production and local suppliers.	Plans designed and implemented by three suppliers in the value chain.	Number of enterprises and producer groups implementing the plans.	BioTrade Colombia	USD 15,000 BTFP		Since the GACP training, companies and their suppliers have developed joint work plans for quality assurance of raw materials. At least four companies are implementing these plans.

Source: UNCTAD (2009a), pages 28–29.

#### Step 4.4 How does the project ensure good practices?

The result of steps 1 to 4 is a Project Design Document (PDD).<sup>72</sup> In a combined BioTrade and REDD+ project, both activities should be included. A map is provided with the areas of BioTrade and REDD+ activities. A description of BioTrade activities should include the species and ecosystems in the area of influence, its derived products and services, why these were chosen, the BTO assessment/workplans, the BioTrade strategy, monitoring and evaluations systems and the stakeholders involved. A description of REDD+ activities should include the threat that is being avoided, the methodology selected, the results of the carbon stock assessment and the monitoring plan. All stakeholders are listed with their allocated responsibilities. The PDD should be very comprehensive and define good practices for the project lifetime.

A crucial element for both BioTrade and REDD+ activities is the monitoring plan and system. The project requires a strategy to monitor costs, revenues and benefit sharing from both streams of activities. Shared BioTrade and REDD+ monitoring plans also aim at collecting information on training and capacity-building actions for the local community and cover as well the implementation of data collection and adaptive management strategies.

BioTrade and REDD+ activities are monitored at a landscape scale. For the former, through the use of management plans and resource assessments, landscape management is conducted, whereby monitoring and evaluation systems are defined in order to guarantee that ecosystems and their species are not threatened. In addition, some of the BTO activities related to its supply chains are monitored using workplans and compliance assessments (see step 3.6).

For REDD+ activities, methodologies help identify the parameters to be monitored. An example of a parameter could be the carbon stock of a forest. Resampling the forest is the clear way to monitor this parameter, but this does not need to occur in each verification period as the cost of sampling the carbon stock is high. The length of time between each parameter to be monitored is thus an important factor to consider. Another example of a parameter to be monitored is the area of forest affected by disturbances. Measurements of this parameter are required for each monitoring period; otherwise the project emissions cannot be calculated. A monitoring plan is designed, considering the following three important aspects: the cost of monitoring a parameter; the data available and the data required; and the technical expertise required to carry out the assessment. There are several ways to monitor parameters. An example would be the monitoring of illegal logging, which may be monitored on the ground by rangers and community-members employed by or benefiting from the project, or may be monitored using satellite imagery to identify the areas affected. These different approaches have different resource (i.e. human, financial and technical) requirements. Remote sensing will require higher technical expertise than on-ground monitoring by a ranger, but a ranger may be more expensive in the long term. Nevertheless, it is unlikely that satellite images can provide all the data required to describe an illegal logging activity or to explain its reasons and it is also important to involve local communities in the implementation of activities. The monitoring of parameters should also consider how disturbances may be mitigated, to reduce their occurrence at the project site.

Finally, an adaptive management plan can be created, which assesses the project implementation in each monitoring period. It is not likely that a perfect project structure can be implemented from the start. The project will adapt to solve issues as they arise. An adaptive management plan is used to document and address the changes to the PDD and why these changes occurred.

### **Step 5 – Validate the project**

#### Step 5.1 What is validation?

Before a project can generate carbon credits it must be validated under its chosen standard. Validation is the process of comparing the project design, monitoring plan and carbon credit calculation with the rules and guidelines set by the standard. The calculations are reviewed by the validator to ensure they follow the selected methodology (i.e. VCS, CCB, etc.). The PDD is assessed to ensure that the project proponents have included and discussed every point listed in the guidelines provided by the standard. These points could relate to the description of the project area, the rights of the project proponents, the assessment of additionality, etc.

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<sup>72</sup> PDD templates are available at [http://www.v-c-s.org/sites/v-c-s.org/files/VCS Project Description Template%20 v3.2\\_0.doc](http://www.v-c-s.org/sites/v-c-s.org/files/VCS%20Project%20Description%20Template%20v3.2_0.doc) (VCS) and <http://americancarbonregistry.org/carbon-accounting/tools-templates/documents/ACR%20Template%20for%20GHG%20Project%20Plans.docx> (ACR).



### Step 5.2 What are non-conformity responses?

The validator will review the project documents and then prepare a list of points to be clarified or a list of non-conformity responses (NCRs). The NCRs will then be addressed by the project developer until the project meets all the requirements and no more NCRs are issued.

There could be instances when NCRs are more serious. An example of this occurs when a project is not found to be additional. Addressing this will generate great cost to the developer, which is why a developer must be clear on the project requirements at the start of the development process (as identified in step 3).

If the project meets the standard's requirements, the validator will issue a validation report.

### Step 5.3 How is a validator selected?

Once a project developer is satisfied with the project documents, calculations and monitoring plan, a validation/verification body<sup>73</sup> (or VVB) is recruited. These are independent bodies that assess the project against the standard.

When choosing a VVB, it is recommended that several potential VVBs be approached and the validation process discussed with each. The following questions may be considered:

- What is the VVB's experience with validating projects under this standard?
- What is the VVB's experience with validating projects which use this methodology?
- What is the VVB's cost structure for this validation?
- Is this a fixed cost or will costs increase if unforeseen delays occur?
- What is the time frame for this validation?
- What does the VVB require to make its initial assessment?

Moreover, if a CCB certification will be pursued, it may be relevant to confirm whether the VVB has experience with community-based projects involving the conservation and sustainable use of non-timber forest products. The level of experience of the VVB, working in the targeted region/country and with the ecosystems, could also be considered.

Before signing a contract with a VVB, the project developer must be clear on what is expected of them and what is expected of the VVB. This will help deliver a smooth validation process.

## **Step 6 – Monitor the project, and commercialization**

### Step 6.1 What is verification under REDD+?

The validated monitoring plan should be followed for all future verifications. Verification is the assessment of a project to determine if it is following the design that was described in the PDD.

Through adaptive management, the monitoring plan may require modification. This is typically allowed, provided it is well justified and does not drastically change the outcome of the project. When a change is made, the project proponents enter a deviation in the monitoring reports (which will be verified at the end of the monitoring period). Adaptive management is used for both BioTrade and REDD+ activities to ensure that a project is being implemented effectively and can still meet its goals despite changes in circumstances. As long as project goals remain the same, and the key parameters continue to be monitored, the PDD does not need to be revalidated. However, all changes will still need to be recorded in the monitoring report.

For BioTrade activities, verification takes the form of an assessment of the compliance of the BTOs with the BioTrade principles and criteria (see step 3.6).

### Step 6.2 How are carbon credits issued?

Credits are issued after each monitoring period. The monitoring report describes the avoided baseline emissions, the project emissions and the emissions from leakage. A risk assessment must also be conducted during each monitoring event, and a risk buffer<sup>74</sup> will be removed from the total credits.

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<sup>73</sup> A list of all eligible VVBs is available on the websites of the carbon and co-benefits standards selected. Sample VVBs for selected countries are available through the Colombian Institute for Technical Standards and Certification (<http://www.icontec.org>), Det Norske Veritas Climate Change Services AS (<http://www.dnv.com>), Instituto Brasileiro de Opinião Pública e Estatística Limitada (<http://www.ibope.com>) and Rainforest Alliance (<http://www.rainforest-alliance.org/>).

An example of the calculations conducted in each monitoring period is shown in table 11.

**Table 11: Calculation of total avoided emissions**

Baseline emissions	Avoided emissions from deforestation and/or forest degradation, calculated in step 3.
Project emissions	Emissions from natural disturbances and illegal logging, minus the carbon sequestered in the forest. These can only be calculated once they occur and are therefore identified during the monitoring of the project area (step 6).
Leakage emissions	Calculated as a percentage of baseline avoided emissions using an assessment of leakage. This could change as the project progresses and drivers of deforestation and forest degradation change.
Total avoided emissions	The total avoided emissions for the monitoring period is the result of the baseline emissions minus the project emissions and leakage emissions for that period. Once the risk buffer has been removed from this value, the remainder is converted into the number of carbon credits to be issued.

The documents from the verification process are submitted to the registry holding the project credits and a request for issuances is made. The documents are reviewed for a final time by the registry and then the credits are issued into the account, ready to be traded.<sup>75</sup>

A case study with regard to the potential of combining BioTrade and REDD+ is presented in box 5.

**Box 5: Potential of combining BioTrade and REDD+: Case study of the Kichwa initiative in Ecuador<sup>76</sup>**

Ecuador is one of 17 megadiverse countries in the world and has a long tradition in the production of cocoa beans. Ecuador's unique cocoa variety, known internationally as cacao nacional or cacao arriba, is recognized by the industry for its outstanding organoleptic characteristics. Traditionally, cocoa is cultivated mainly by smallholders, as for instance the Kichwa people in the Amazon region of Ecuador. Gathered by a series of mid-level operators, the fermented and dried beans are brought to ports on the Pacific Coast and thence to leading high-quality chocolate manufacturers around the world.

The Kichwa people cultivate cocoa in traditional production systems called chakras. As opposed to a conventional monoculture model, chakras do not allow for intensive production but serve as a support system that contributes to maintaining and enriching the local biodiversity, which is one of the richest in the world.<sup>77</sup>

**Figure 15: Chakra system**



**Figure 16: Monoculture system**



<sup>74</sup> A risk buffer corresponds to a specific number of credits defined according to the identified level of risk.

<sup>75</sup> With regard to the commercialization of carbon credits, see module 2, section 7.

<sup>76</sup> Based on B Torres et al., Presentation at national workshops in Ecuador on integrating REDD+ and BioTrade (2013), available at <http://www.biobio.org/MeetingsEvents/REDD+%20Nov2013%20Col-Ec-Br/Ec2.%20Sr.BolierTorres-12Nov.pdf>; and Biodiversity in Good Company Initiative, available at [http://www.business-and-biodiversity.de/fileadmin/user\\_upload/documents/The\\_Good\\_Companies/Factsheets\\_CoP\\_11/GIZ\\_Raw\\_Cocoa\\_from\\_Ecuador.pdf?PHPSID=d8be7b40a14976eee221de2a9bf5f401](http://www.business-and-biodiversity.de/fileadmin/user_upload/documents/The_Good_Companies/Factsheets_CoP_11/GIZ_Raw_Cocoa_from_Ecuador.pdf?PHPSID=d8be7b40a14976eee221de2a9bf5f401).

<sup>77</sup> Biodiversity in Good Company Initiative.

In chakras, cocoa is cultivated in growing areas of 0.5 to 3 hectares, and trees coexist with medicinal plants and subsistence farming productions.

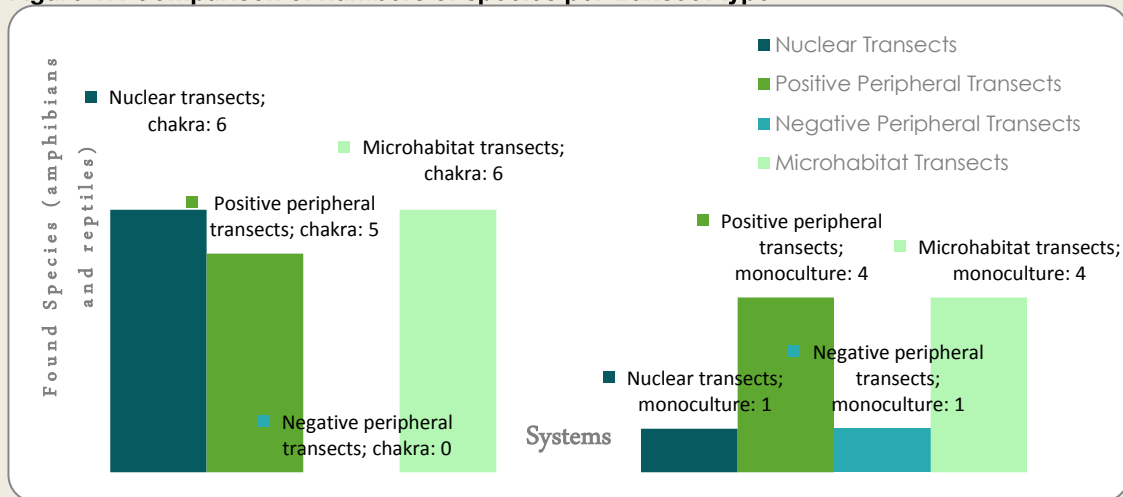
In 2005, the German International Technical Cooperation Agency (GIZ)<sup>78</sup> implemented its value links methodology with the aim of promoting the sustainable management of raw cocoa in the Amazon region of Ecuador.

After identifying a market opportunity for this natural resource, GIZ intermediated between local producers and a Swiss chocolate manufacturer. An intervention strategy was then implemented in agreement with different value chain actors and with the collaboration of public partners such as ministries, trade offices and other interested parties. The measures adopted included productivity increases, the introduction of quality standards and general quality enhancement, as well as legal framework adaptation and market access improvements.

As a result, local producers were able to increase their incomes while preserving the positive impacts of chakras in terms of biodiversity conservation and food security.

Tables 12 and 13 illustrate the environmental benefits of chakras by comparing some of their characteristics in terms of biodiversity and carbon sequestration to those of a conventional cacao monoculture production system. Figure 17 and table 12 show that chakras provide habitats for a more diverse fauna and flora than a monoculture system. The average number of tree species in particular is more than six times higher in chakras.

**Figure 17: Comparison of numbers of species per transect type**



Source: B Torres et al., 2013, Presentation at national workshops in Ecuador on integrating REDD+ and BioTrade.

**Table 12: Average number of families, genera and species of trees per production system (only trees with an approximate diameter of  $\geq 10$  cm are considered)**

	Chakra	Monoculture
<b>Families</b>	7.7	1.4
<b>Genera</b>	8.9	1.4
<b>Species</b>	9.3	1.5

Source: B Torres et al., 2013, Presentation at national workshops in Ecuador on integrating REDD+ and BioTrade.

In addition to conserving biodiversity, chakras also bring significant benefits in terms of climate change mitigation. As shown in table 13, chakras have a carbon sequestration capability that is 65.9 per cent higher on average than the capability of monoculture systems.

<sup>78</sup> Deutsche Gesellschaft für Internationale Zusammenarbeit.

**Table 13: Average carbon sequestration per production system**

<b>Storage components (mgC/ha)</b>	<b>Chakra</b>	<b>Monoculture</b>
Aerial biomass	52.8	5.7
Root biomass	15.3	1.8
Total biomass	68	7.6
Necromass	4.1	2.8
Organic soil	69.2	74.9
<b>Total carbon</b>	<b>141.4</b>	<b>85.2</b>

Source: B Torres et al., 2013, Presentation at national workshops in Ecuador on integrating REDD+ and BioTrade.

The Kichwa initiative is a concrete example of the potential for combining BioTrade and REDD+. First, from a BioTrade perspective, chakras contribute to the conservation and sustainable use of biodiversity while generating additional income and offering multiple ecosystem services. Second, from a REDD+ perspective, chakras act as a tool for preserving forests and maintaining carbon stocks. Finally, the Kichwa initiative shows that communities can be successfully engaged in both forest protection and the sustainable commercialization of products derived from native biodiversity.



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## Annex I.

### Aichi Biodiversity Targets and Nagoya Protocol

#### **Aichi Biodiversity Targets**<sup>79</sup>

During the tenth Session of the Conference of the Parties (COP10) to the CBD, in Nagoya, Japan, a revised and updated Strategic Plan for Biological Diversity 2011–2020 was adopted. This includes the Aichi Biodiversity Targets, which comprise 20 targets to address the following five strategic goals:

1. Address the underlying causes of biodiversity loss by mainstreaming biodiversity across Government and society;
2. Reduce the direct pressures on biodiversity and promote sustainable use;
3. Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity;
4. Enhance the benefits to all from biodiversity and ecosystem services; and
5. Enhance implementation through participatory planning, knowledge management and capacity-building.

#### **Nagoya Protocol**<sup>80</sup>

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is a supplementary agreement to the CBD. The Nagoya Protocol applies to genetic resources and associated traditional knowledge that are covered by the CBD and to the benefits arising from their utilization.

The Nagoya Protocol was adopted on 29 October 2010 in Nagoya, Japan, in the framework of COP10, and entered into force on 12 October 2014. Its objective is the fair and equitable sharing of benefits arising from the utilization of genetic resources, thereby contributing to the conservation and sustainable use of biodiversity.

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<sup>79</sup> More information is available at <http://www.cbd.int/sp/targets/>.

<sup>80</sup> More information is available at <http://www.cbd.int/abs/text/>.

## Annex II.

### REDD+ project timeline

This timeline has been developed based on the experience of REDD+ project developers. It should be considered for informative purposes only.

Each project varies widely with regard to the factors of time and cost. This is due to variations in factors relating to the following:

- Legal requirements regarding land ownership and tenure, as well as the right to use the existing biological resources and associated traditional knowledge, if required;
- Project scale and accessibility;
- Forest type and density;
- Number of project stakeholders and participants and their project engagement;
- Project funding arrangements (i.e. public/private funding);
- The complexity of developing baseline scenarios;
- Availability of spatial data and information relating to the site, the biological resources available and forest species allometry; and
- Legal framework related to REDD+.

Nevertheless, it is possible to provide an indicative time frame based on each stage of a project and information available from current projects. These indicate a period of at least two to four years for a project to reach the point of commercialization of carbon credits, as shown below.

Step	Estimated time	Variables to consider
Step 1 – Identify project area	3 months	Finding a site which has the potential for both BioTrade and REDD+ activities could delay the process if not available. If disputes related to land tenure as well as resource and traditional knowledge usage occur in the project area, time and cost will increase while disputes are being resolved. Disputes may take 12 months or more to settle.
Step 2 – Identify stakeholders and the community engagement strategy	3–6 months	If disputes are being resolved from step 1, this step will happen simultaneously. Hidden costs can emerge from community consultation processes, particularly when many stakeholders are identified or there is opposition to the project and lack of understanding of REDD+/BioTrade and the roles and responsibilities of stakeholders.
Step 3 – Define the baseline and methodology	6–12 months	Sampling the carbon stock can become a lengthy process to meet statistical requirements. The sampling of carbon stocks is also very costly due to the use of on-ground field measurements and remote sensing equipment. Pilot studies are conducted to determine the indicative carbon stock, extent of the threat, leakage and risk. From the pilot study it will be decided whether the project is viable or not. Costs vary depending on the size of the project, the homogeneity of the forest, the number of stakeholders, the engagement of local communities and whether disputes need to be resolved.
Step 4 – Define the project activities and the monitoring plan	3–6 months	Monitoring costs vary depending on the available infrastructure, technology and skills/expertise in place to monitor forests. Some countries are developing forest monitoring systems which will ultimately reduce the cost of project implementation. Similarly, communities can be trained to carry out monitoring activities.
Step 5 – Validate the project	6–9 months	This process increases in length when more non-conformity responses are issued and the complexity of the requests. Typically, the longer the validation process, the higher the validation fees charged by the validator.
Step 6 – Monitor the project, and commercialization	Continuous	Monitoring and commercialization will happen continuously throughout the project lifetime.
Time to commercialization	Low estimate: 2 years High estimate: 4 years	