



Connecting Sustainable Development Goals 15 and 16:

BioTrade experiences in Colombia and Indonesia



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Abbreviations and acronyms

APC	Presidential Agency for International Cooperation (Colombia)
APED	Aceh Partnerships for Economic Development
ASOPROCAR	Asociación de Productores de Cacao de Rivera (Colombia)
Balitri	Indonesian Spice and Industrial Crops Research Institute
BAPPEDA	Badan Perencanaan Pembangunan Daerah (Regional Development Planning Agency)
BAPPENAS	Badan Perencanaan Pembangunan Nasional (National Development Planning Agency)
BCPR	Bureau of Crisis Prevention and Recovery (UNDP)
BKP3	Badan Ketahanan Pangan dan Pelaksana Penyuluhan Pertanian (Agency for Food Security and Agriculture Facilitation)
CAF	Development Bank of Latin America
CBD	Convention on Biological Diversity
CBS	Corporación Biocomercio Sostenible (Colombia)
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COAPI	Cooperativa de Apicultores del Huila (Colombia)
CORAMBIENTE	Corporación Buen Ambiente
DDR	disarmament, demobilization and reintegration
Dishutbun	Dinas Kehutanan dan Perkebunan (Forestry and Plantation Agency)
Forpala	Forum Pala (Nutmeg Forum)
GAM	Free Aceh Movement (Gerakan Aceh Merdeka)
GAP	good agricultural practices
GEF	Global Environment Facility
IAWG-DDR	United Nations Inter-Agency Working Group on Disarmament, Demobilization and Reintegration
IFACS	Indonesian Forestry and Climate Support Project
HLPF	High Level Political Forum on Sustainable Development
MEA	multilateral environmental agreement
NGO	non-governmental organization
NSBP	National Sustainable BioTrade Programme (Colombia)
NTFPs	non-timber forest products
SDGs	Sustainable Development Goals
SECO	Swiss State Secretariat for Economic Affairs
SMEs	small and medium enterprises
UEBT	Union for Ethical BioTrade
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
USAID	United States Agency for International Development

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

Shamika N. Sirimanne
Officer-in-charge
Division on International Trade in Goods and Services, and Commodities

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1. INTRODUCTION

Biodiversity is life's foundation as it provides resources for basic human needs in terms of food, fuel, medicine, shelter, transportation, as well as environmental services such as protecting water sources. It is also important for businesses as natural raw materials enable the development of products and services, or are used for recreation or cultural activities, which also generate income for local communities. Around 1.6 billion people depend on forests and non-timber forest products (NTFPs) for their livelihoods (Secretariat of the CBD, 2015a). Many households in Asia, derived as much as 50–80 per cent of their annual household income from NTFPs, namely from biodiversity resources (Secretariat of the CBD, 2014). In the Latin American region some 75 per cent of households depend directly on biodiversity to meet their basic needs for food and water as well as to preserve their culture (CAF, 2015).

Biodiversity is the natural capital base for a sustainable economy. Many developing countries rich in biological resources have the potential to capture the market and use such products as an engine for sustainable development. The conservation of biodiversity and the sustainable use and trade of its derived products and services can provide countries valuable opportunities for economic development and improvement of livelihoods. Biodiversity is also increasingly recognized by business and consumers. It is a source of natural inputs to develop value added processes and provides a business opportunity for capturing consumer preferences for socially, environmentally and health-friendly products. The Economics of Ecosystems and Biodiversity report (UNEP, 2010) estimated that by 2050, the sustainability-related global business opportunities in natural resources (e.g. food, energy, forestry, agriculture, water and metals) range between would amount to \$2–6 trillion. The markets for biodiversity-friendly products are also growing. The Secretariat of the CBD (2013) estimated that the natural cosmetics industry is worth around \$26 billion, the natural beverages industry \$23 billion and the botanicals industry \$85 billion. The growth rates are in general higher than other sectors, particularly for some segments such as superfoods whose market expanded by 202 per cent in the past five years. (2016 Mintel).¹ The forecast for this biodiversity-friendly products are also promising, including relevant segments such as the dietary supplements market

that is expected to reach \$278 billion by 2024² (Grand View Research Inc., 2016), or consumer sales in the United States of America of natural, organic and healthy products that are forecasted to expand 64 per cent from \$153 billion in 2013 to \$252 billion by 2019 (NEXT Forecast 2016).³

However, biodiversity is being lost at accelerating rates; “13 million hectares of forest being lost every year ... and 52 per cent of the land used for agriculture is moderately or severely affected by soil degradation” (United Nations, 2015a). Livelihoods and natural-based industries are connected through biodiversity. Biodiversity loss reduces the capacity of ecosystems to provide the essential services for human survival. If biodiversity is not responsibly managed and sustainably used it will not generate livelihoods and business opportunities, nor provide the basic needs and development opportunities much needed in rural areas. This is particularly relevant in post-conflict situations in developing countries, as two thirds of biodiversity hotspots and priority conservation areas around the world have been affected by conflict between 1950 and 2000 (Hanson et al, 2009).

As part of a sustainable peacebuilding process, developing income-generating activities and creating sustainable jobs for conflict affected individuals (e.g. displaced people, returnees, victims and ex-combatants) is essential for their reintegration into civilian life. Biodiversity, through its sustainable use and generation of derived tradeable products and services, can serve as a key foundation upon which conflict-affected communities and ex-combatants can derive economically feasible and environmentally friendly opportunities. This is what UNCTAD, is promoting through its BioTrade Initiative. The Initiative fosters the development of biodiversity-based businesses, value chains and sectors under economic, social and environmental sustainability criteria.

This document aims to demonstrate how BioTrade is supporting countries to build sustainable and peaceful societies, thus illustrating the connection between the Sustainable Development Goals 15 (Life on land) and SDG16 (Peace, justice and strong institutions). It starts by providing an overview of the 2030 Agenda for Sustainable Development, and the linkages between trade, biodiversity and peaceful, inclusive societies. Secondly, BioTrade is analysed, particularly its principles, approaches and methodologies and how these can support peacebuilding and post-conflict processes. Afterwards, case studies from

Colombia and Indonesia are presented. Finally, the document provides general and specific conclusions and recommendations for developing post-conflict BioTrade initiatives and programmes.

For this study, the following definitions are considered:

- Disarmament, demobilization and reintegration (DDR): “A process that contributes to security and stability in a post-conflict recovery context by removing weapons from the hands of combatants, taking the combatants out of military structures and helping them to integrate socially and economically into society by finding civilian livelihoods.” (IAWG-DDR, 2006.)
- Ex-combatant: “A person who has assumed any of the responsibilities or carried out any of the activities mentioned in the definition of ‘combatant’, and has laid down or surrendered his/her arms with a view to entering a DDR process. Former combatant status may be certified through a demobilization process by a recognized authority. Spontaneously auto-demobilized individuals, such as deserters, may also be considered ex-combatants if proof of non-combatant status over a period of time can be given.” (IAWG-DDR, 2006.)
- Peacebuilding: “involves a range of measures targeted to reduce the risk of lapsing or relapsing into conflict by strengthening national capacities at all levels for conflict management, and to lay the foundations for sustainable peace and development. Peacebuilding strategies must be coherent and tailored to specific needs of the country concerned, based on national ownership, and should comprise a carefully prioritized, sequenced, and therefore relatively narrow set of activities aimed at achieving the above objectives.” (United Nations Secretary-General’s Policy Committee, 2007 quoted in United Nations Peacebuilding Support Office, 2015.)
- Post-conflict: “Can describe the time, period or events taking place in a given State or region that had experienced an outbreak of violence or conflict in its recent past.” (IAWG-DDR, 2006.)
- Recovery: “A restorative process in relation to the situation prior to the distress. It might entail ‘healing’, reparation, amelioration and even regeneration.” (IAWG-DDR, 2006.)
- Reintegration: “the process by which ex-combatants acquire civilian status and gain sustainable employment and income. Reintegration is essentially a social and economic process with an open time frame, primarily taking place in communities at the local level. It is part of the general development of a country and a national responsibility and often necessitates long-term external assistance.” (Note by the Secretary-General on administrative and budgetary aspects of the financing of United Nations peacekeeping operations, 24 May 2005 (A/C.5/59/31) in IAWG-DDR, 2014.)
- Returnee: “A refugee who has voluntarily repatriated from a country of asylum to his/her country of origin, after the country of origin has confirmed that its environment is stable and secure and not prone to persecution of any person. Also refers to a person (who could be an internally displaced person [IDP] or excombatant) returning to a community/town/village after conflict has ended.” (IAWG-DDR, 2006.)
- Violence against women/Gender-based violence: “Defined as “any act of gender-based violence that results in, or is likely to result in physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private. Violence against women shall be understood to encompass, but not be limited to, the following: (a) Physical, sexual and psychological violence occurring in the family, including battering, sexual abuse of female children in the household, dowry-related violence, marital rape, female genital mutilation and other traditional practices harmful to women, non-spousal violence and violence related to exploitation; (b) Physical, sexual and psychological violence occurring within the general community, including rape, sexual abuse, sexual harassment and intimidation at work, in educational institutions and elsewhere, trafficking in women and forced prostitution; (c) Physical, sexual and psychological violence perpetrated or condoned by the State, wherever it occurs” (UN General Assembly Declaration on the Elimination of Violence Against Women, 1993).” (IAWG-DDR, 2006.)

2. THE 2030 AGENDA AND THE SDGs

In Rio de Janeiro (Brazil), the international community joined forces in launching an inclusive process for defining the post-2015 development agenda during the United Nations Conference on Sustainable Development (Rio+20). It aimed to achieve “sustained and inclusive economic growth, social development and environmental protection and thereby to benefit all” (United Nations, 2012). This was translated into the the Rio+20 outcome document named *The Future We Want* which mandated establishing global Sustainable Development Goals (SDGs) which were adopted at the Special Summit of the United Nations General Assembly in September 2015. The SDGs comprise 17 goals (Box 1) and 169 related targets (and associated indicators), which define the global development framework until 2030. These goals aim to “end poverty, promote prosperity and people’s well-being while protecting the environment” (United Nations, 2015b).

The 2030 Agenda for Sustainable Development and its SDGs (United Nations 2015d) addressed the following critical areas for humanity and the planet:

- Planet: Protect the environment from degradation.
- Prosperity: All human beings enjoy prosperous and fulfilling lives, and technological progress is in harmony with nature.
- Peace: Foster peaceful, just and inclusive societies.
- Partnerships: Mobilize the means needed to implement the 2030 Agenda.

All SDGs are interconnected and must be achieved in an integrated manner considering environmental, economic and social actions, as well as peace and security. For addressing biodiversity loss requires environmental actions to conserve and sustainably use it, as well as social and economic actions that provide livelihood options for local communities using it. These communities consume the products and services derived from biodiversity and also sell the surplus to generate family income. This, in turn, strengthens the interest and commitment of families to preserve biodiversity and harvest the resources sustainably so as to maintain their livelihoods. In this manner, sustainable biodiversity use and trade can be an economic incentive to safeguard biodiversity. This is what UNCTAD is proposing with its BioTrade Initiative, and as defined further in the next chapter.

The integration of biodiversity and trade is reflected in the SDGs. For instance, the two biodiversity-related SDGs, Goal 14 on marine biodiversity and Goal 15 on

Box 1. Sustainable Development Goals (SDGs)



Source: Sustainable Development Knowledge Platform website (<https://sustainabledevelopment.un.org>).

terrestrial biodiversity include trade considerations. SDG 15 requires taking urgent action to end poaching and trafficking of protected species of flora and fauna, and to address both the demand and supply of illegal wildlife products (Target 15.7). Target 15.c enhances global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities. Both targets seek to combat illegal trade in wildlife and recognize how these actions undermine local economies and livelihoods while endangering species. Consequently, the targets advocate for legal, reliable and sustainable trade of wild flora and fauna as a means of providing sustainable livelihoods for the communities affected by illegal poaching and trafficking. Trade is also identified as a means of implementation of the SDGs in Goal 17, but it is also included in other SDGs such as Goals 1, 2, 8, 9 and 10.

The SDGs cannot be achieved without peaceful, equitable and inclusive societies where all people are able to enhance their quality of life in a sustainable manner. The 2030 Agenda preamble encourages countries to “redouble our efforts to resolve or prevent conflict and to support post-conflict countries, including through ensuring that women have a role in peacebuilding and state-building.” (United Nations, 2015d, 35.) SDG 16 recognizes and underscores the importance of promoting peaceful and inclusive societies for sustainable development, providing access to justice for all and building effective, accountable and inclusive institutions at all levels. High levels of armed conflict pose a direct threat to biodiversity when species are killed or their habitats are threatened. The loss of biodiversity and the essential services it provides could undermine or limit the livelihoods of local populations, minorities and vulnerable groups that depend on those resources. Exploitation, trafficking, sexual violence, corruption, no rule of law and unequal access to justice and decision making are also some features appearing in conflict areas that SDG 16 aims to tackle.

Natural resources, including biodiversity, are an asset for economic and livelihood recovery in developing countries as they are the cornerstone of production, food security and reduced vulnerability to natural disasters and social conflicts. Their adequate management could help promote peaceful and inclusive societies (Jaramillo Castro and Stork, 2015). Many armed conflicts involve natural resources or take place in biodiversity rich areas (Hanson et al, 2009; United Nations Peacekeeping, 2015). In post-crisis settings, therefore, after a peace agreement has been signed, individuals can access forests areas formally off limits due to security reasons to harvest biodiversity resources and thus threaten ecosystems unless sustainable alternatives are offered to them. Such developments could undermine the aims of SDG 15, for example: “to take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity...” (SDG 15.5.) In such situations, UNCTAD’s BioTrade Initiative can play a major role.

Actions need to be taken place at national and local level, where biodiversity is. Also, to achieve the 2030 Agenda, national implementation is essential and countries are translating them into national development plans, strategies and budgets. The Agenda also states that countries “conduct regular and inclusive reviews of progress at the national and sub-national levels, with the results to be shared, on a voluntary basis, at the annual meetings of the High Level Political Forum on Sustainable Development (HLPF), in a process that has come to be known as voluntary national reviews” (United Nations, 2017a, p. ii). Already, 65 countries have completed their Voluntary National Reviews, including Colombia and Indonesia. Among the SDGS that will be reviewed in-depth at the 2018 HLPF “Transformation towards sustainable and resilient societies” are SDGs 15 and 17, and in 2019 HLPF will be SDG 16. At the 2018 HLPF, 48 countries will present their reviews, including Colombia for its second review. (United Nations, 2017b).

3. BIOTRADE - CONNECTING SDGs 15, 16, AND 17

3.1 BioTrade conceptual framework

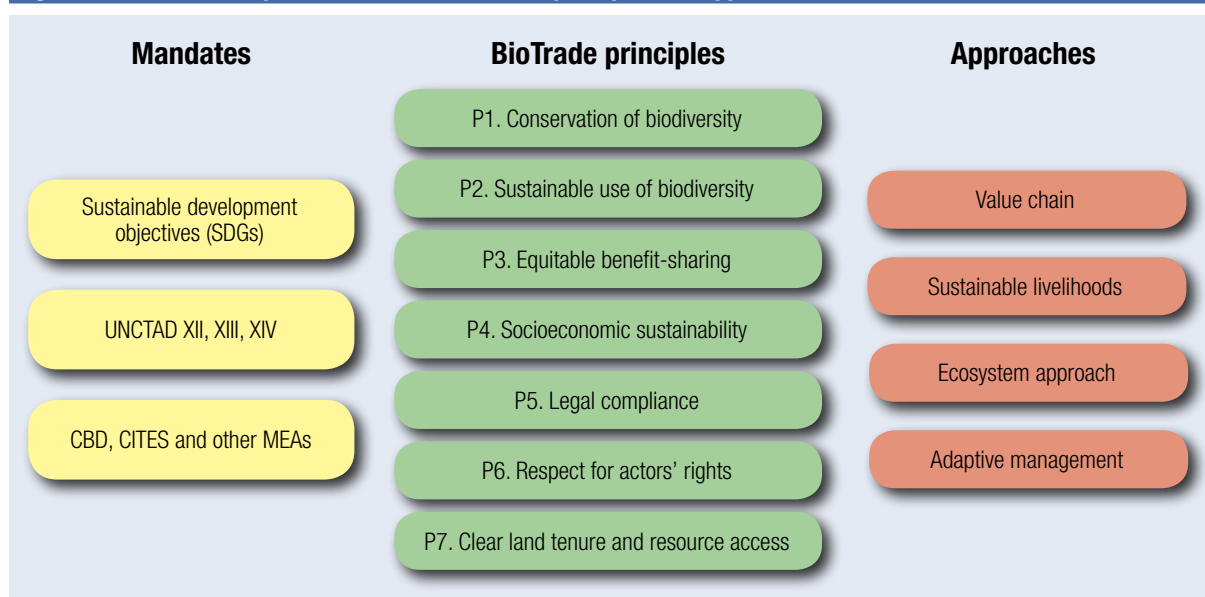
UNCTAD launched the BioTrade Initiative in 1996 in response to the Agenda 21 of the 1992 Earth Summit's. Through this Initiative, UNCTAD aims to promote trade and investment in biodiversity-based products and services, in line with social, economic and environmental sustainability principles and criteria. (see Figure 1 and Box 2). These Principles and Criteria, known as the BioTrade Principles and Criteria, are at the centre of the BioTrade framework and guide all the activities implemented by its programmes, partners and beneficiaries across the globe. They include seven principles that encompass the three dimensions of sustainable development and are in line with the mandates of sustainable development objectives (SDGs), UNCTAD, multilateral environmental agreements (MEAs) such as the Convention on Biodiversity (CBD) and Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

The international community has recognized BioTrade as a key strategy through which the sustainable use of resources can be implemented, while contributing to conservation and poverty alleviation objectives.

The three first BioTrade principles include the three objectives of the CBD: (1) Conservation of biological resources; (2) Sustainable use of its components; and (3) Fair and equitable sharing of the benefits arising from the utilization of biodiversity. BioTrade also contributes to promoting the legal, verifiable and sustainable trade in endangered animals and plant species consistent with CITES. For example, BioTrade is included in several CBD and CITES decisions of the Conference of the Parties (COPs) related to incentive measures, business engagement, sustainable use of biodiversity, integration of biodiversity into poverty eradication and development, and cooperation with other conventions and international organizations and initiatives; UNCTAD's contribution to the achievement of the Aichi Targets; and traceability for CITES-listed species. UNCTAD also presented BioTrade experiences during a joint briefing to the Second Committee of the United Nations General Assembly in 2013 and key contributions were published by the environment and trade community in The Economics of Ecosystems and Biodiversity (TEEB).

The Nairobi Maafikiano adopted at UNCTAD 14 in 2016, serves as a platform through which UNCTAD will act on the 2030 Agenda. It provides a solid mandate for UNCTAD to strengthen its work on BioTrade under paragraph 76 (q): "Promote sustainable trade in biodiversity products and services to strengthen the sustainability of biodiversity and foster sustainable

Figure 1. BioTrade conceptual framework: mandates, principles and approaches



Source: Adapted from UNCTAD, 2007.

Box 2. BioTrade, livelihoods, biodiversity and markets

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

Its programmes promote the development and trade of products and services that are derived mainly from native species and which conserve the biodiversity of the surrounding area. This is done through value chain development, generating sustainable livelihoods through the sale of biodiversity products and services, and the sustainable management of biodiversity.

BioTrade specializes in value added and niche products and services that are economically competitive and target specific markets. It includes high-value added products such as specialty products of a given region and culture.

BioTrade helps build the resilience and self-resilience of communities and create livelihood alternatives that safeguarding their surrounding biodiversity. Socioeconomic sustainability, equitable sharing of benefits and respect for the rights of actors are emphasized under BioTrade principles and criteria, which are the core for implementing BioTrade activities.

Source: adapted from UNCTAD, 2015.

growth, in close cooperation with other relevant agencies where appropriate”.

The BioTrade Principles, combined with the four approaches (value chain, sustainable livelihoods, ecosystem and adaptive management), guarantee the sustainability of the interventions. The Principles and Criteria are used to identify the social, economic and environmental challenges and gaps of BioTrade beneficiaries businesses and value chains. This information is then translated to improvement workplans or actions plans per beneficiary, value chain and/or sector, which guide the technical assistance provided by UNCTAD and partners, thus guaranteeing the sustainability of the actions.

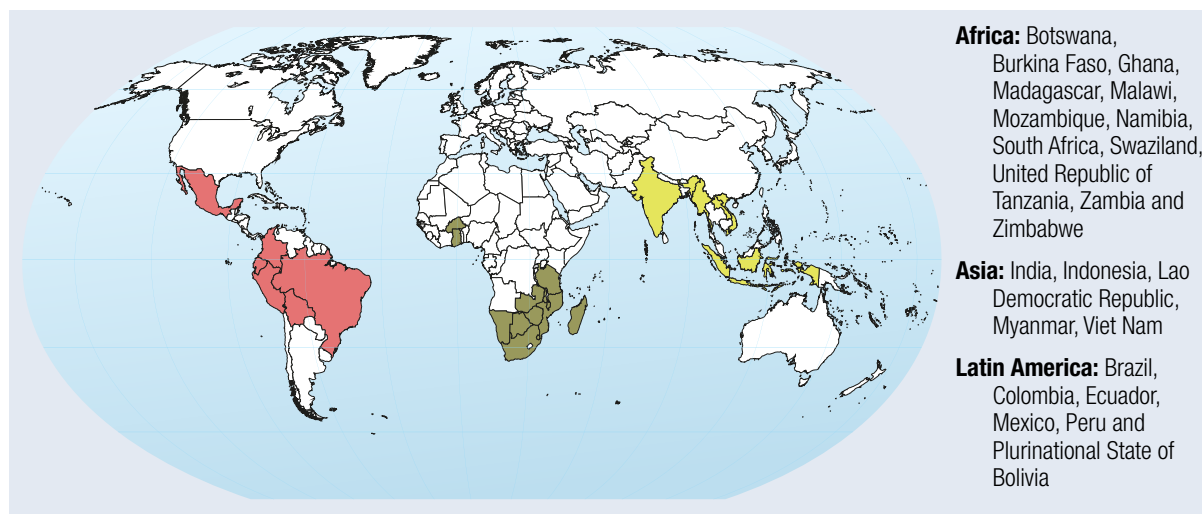
3.2 BioTrade sectoral and geographical scope

Biodiversity provides a variety of products and services that can be sustainably used to generate tradeable products and services. Therefore, it is important to prioritize those products and services that generate the major social, environmental and economic impacts to the countries and stakeholders promoting BioTrade. For this reason, UNCTAD, regional and national programmes and experts developed the BioTrade Principles and Criteria to guide interventions on the ground. Several methodologies, protocols and guidelines have been produced to support partners and programmes identify, implement and monitor

under a sustainability lense, the benefits and impacts generated for BioTrade beneficiaries (e.g. SMEs, community-based associations) in the prioritized sectors).

A growing number of stakeholders are embracing the BioTrade concept, its principles, criteria and frameworks, and are currently implemented by a broad range of stakeholders in over 20 countries in Asia, Africa and Latin America. Through the Union for Ethical BioTrade (UEBT), the BioTrade concept is also being implemented in the supply chains of transnational companies from developed countries such as France, Germany, Italy, Switzerland and United Kingdom of Great Britain and Northern Ireland. For example, UEBT is working jointly with the Swiss company Weleda to develop the sandalwood supply chain in Sri Lanka. Figure 2 shows an overview of the countries where partners are currently active with BioTrade and/or BioTrade-related activities.

At the regional level, BioTrade is also fostered and implemented by partners such as the Development Bank of Latin America (CAF), General Secretariat of the Andean Community and PhytoTrade Africa. PhytoTrade Africa, for example, supports the development of value added natural products from native biodiversity such as marula, baobab, devil's claws and kigela. It represents 56 member SMEs and their harvesters, collectors or communities in nine countries: Botswana, Madagascar, Malawi, Mozambique, Namibia, South

Figure 2. Developing countries implementing BioTrade

Africa, Swaziland, Zambia and Zimbabwe. Over 12,500 individuals engaged in primary production (78 per cent women) are beneficiaries of PhytoTrade Africa (UNCTAD, 2017). In 2014, gross revenue of its members amounted \$5.7 million and created 634 new local jobs and the markets being accessed include Europe, Asia, the United States, and Australia (UNCTAD, 2017). National BioTrade partners are ministries of environment and trade in Colombia, Ecuador and Peru, trade promotion agencies in Ecuador and Peru, NGOs such as Helvetas Viet Nam, Corporación Biocomercio Sostenible (CBS) (Colombia), Corporación Fondo Biocomercio (Colombia), EcoCiencia (Ecuador), among others.

The products and services traded by beneficiary countries cover sectors such as personal care, food,

pharmaceuticals, fashion, ornamental flora and fauna, handicrafts, textiles and natural fibres, sustainable tourism and forestry-based carbon credit activities (See Table 1). In 2015⁴, activities implemented by UNCTAD and its partners in BioTrade have benefited approximately 5 million farmers, collectors, breeders, hunters, producers and workers; creating jobs and generated additional income opportunities for rural and marginal communities as well as other actors in the value chain. Global sales of BioTrade products and services⁵ reached €4.3 billion in 2015 showing a clear increase from €35.34 million (\$40 million) in 2003. BioTrade is transitioning from a previously niche green market to a more robust sub-sector of the economy of many developing countries.

Table 1. BioTrade sectors prioritized by countries and partners

Sector	Type of product
Personal care	Essential oils, natural dyes, soaps, cream and butters, cosmetics, etc.
Pharmaceutical (phyto-pharma)	Extracts, capsules and infusions from medicinal plants, etc.
Food	Fruits pulps, juices, jams, biscuits and sauces, spices, nuts, tuberos, snacks food supplements, functional food, meat from caiman and fish, etc.
Fashion	Skin and belts, purses from Caiman yacare, etc.
Ornamental flora and fauna	Heliconias, orchids, butterflies, etc.
Handicrafts	Jewellery, decorative objects based on native species, garments, etc.
Textiles and natural fibres	Furniture and decorative objects based on natural fibres, purses, shoes, etc.
Sustainable tourism	Ecotourism, nature-based tourism, community-based tourism, etc.
Forestry-based carbon credit activities	Carbon neutral value chains, Reducing Emission from Deforestation and Forest Degradation, conservation, sustainable management of forests and enhancement of forest carbon stocks (REDD+), etc

3.3 BioTrade methodologies and tools

Enhancing local capacities and skills for engaging in biodiversity-based resources in beneficiary countries has been a major focus of UNCTAD and its partners. Several guidelines, training material and documents, a master's degree programme and online courses have been developed, as well as conferences and events have been organized. As BioTrade works on a variety of sectors and at different levels, some tools and methodologies have been developed specifically for the different stakeholders involved. For example, for policy makers (e.g. UNCTAD ABS guideline (2017)), for companies (e.g. UEBT's biodiversity sourcing strategies; national programme's business plans development), financial institutions (e.g. CAF's financial entities training programme under the Andean BioTrade Programme), research organizations (e.g. management plans), universities (e.g. on-line courses), and general public (e.g. UNCTAD's document on the 20 years of BioTrade).

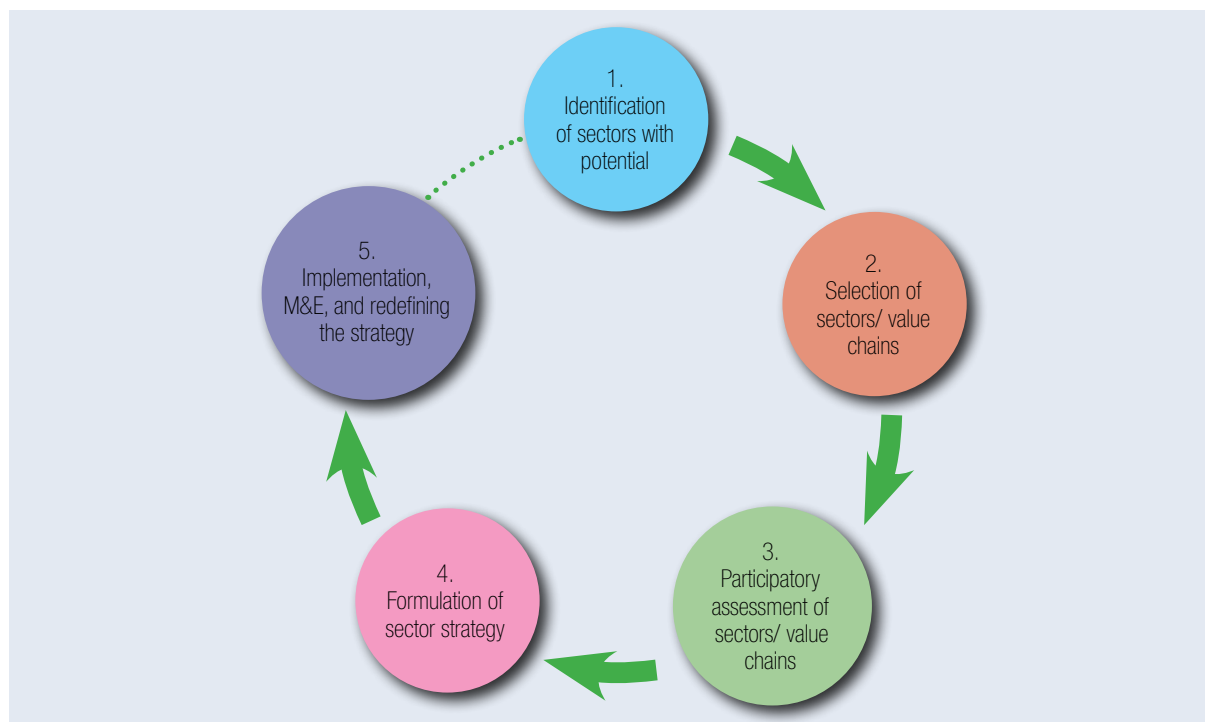
As BioTrade partners work to develop businesses, value chains and sectors, the topics covered under capacity-building activities may be considered under one of the following categories:

- **Policy frameworks:** Guidelines to fulfil regulations, protocols, management plans, Access and Benefit Sharing, patents, etc.
- **Market access:** Market studies, guidelines to develop and implement marketing and promotion strategies, guidelines on requirements to access specific markets, non-tariff measures databases for target markets, etc.
- **Value chain development:** Methodologies to identify and prioritize sectors and value chains, formulate implementation strategies and monitoring systems.
- **Managerial skills:** Guidelines to develop business plans and feasibility studies, cost assessments, traceability and documentation, etc.
- **Social practices:** Guidelines to enhance the participation of communities in decision making and value chain development, implementing methodologies for an equitable and fair distribution of benefits across the value chain stakeholders.
- **Environmental practices:** Guidelines to develop management plans and resource assessments for flora and fauna species, sustainable practice guidelines for ecotourism and community-based tourism initiatives, protocols for the use of wild species, including those listed under CITES Appendixes II and III.⁶

The tools and methodologies developed under BioTrade can be adapted to country and region specific circumstances and realities. These can include additional approaches, criteria or considerations to target specific geographical locations and beneficiaries. For example, the UNCTAD's Guidelines for a methodology to support value chains for BioTrade products and services (UNCTAD, 2009) bridges BioTrade and peacebuilding, and post-conflict recovery efforts. Value chains comprise the activities related to the development of a particular product or service, from the sourcing of the raw material to transportation, processing, commercialization, marketing and selling of the final product or service.

UNCTAD's BioTrade value chain methodology involves five steps, starting with the *identification* and *selection* of sectors or value chains based on environmental, biological, social, political, economic, market, technological and infrastructure criteria. In this phase, additional criteria related to target groups (women, youth, religious groups, ex-combatants or associated groups), geographical location as well as other criteria related to peacebuilding can be included. Then, a *participatory assessment* of the selected sector/chain is developed, which includes the identification of problems and solutions in accessing current and potential markets, in implementing sustainable and benefit-sharing practices, and promoting peacebuilding and post-conflict recovery. *A sector strategy is formulated and implemented* to strengthen or develop the sector while promoting the empowerment of value chain stakeholders (from companies to communities and sector associations) in the process in the short, medium and long term. Governments, both local and national, play a key role by creating an enabling policy environment and promoting the value chain for instance through research and development, infrastructure and incentives. Academia, business incubators and civil society also play essential roles in the support network to help address the needs of the emerging value chains and businesses. Through a monitoring and evaluation system which is designed and implemented, the strategy is redefined and nourished. Furthermore, as the strategy is implemented (step 5), new sectors and products may emerge and the process can therefore re-start (see Figure 3).

Each one of these steps consists of activities that lead to the achievement of concrete results, through an active participation of government representatives,

Figure 3. Steps of the BioTrade's value chain methodology

Source: adapted from UNCTAD, 2009.

private sector, academia, NGOs, community-based initiatives and other actors working in the value chain or sector. The methodology follows a participatory inclusive bottom-up approach that builds on existing capacities and knowledge, and promotes the sharing of information, coordination of activities and establishment of partnerships. Inclusive, sustainable and equitable businesses and value chains based on native biodiversity are also developed. This is particularly relevant in rich biodiversity countries.

BioTrade's value chain methodology works at the community level while also linking local stakeholders to the national level (e.g. central government – ministries of trade, environment, agriculture and health) as well as international level (e.g. import promotion agencies). The value chain methodology allows for:

- targeting of specific groups, such as women, youth, seniors and conflict-affected communities;
- guaranteeing win-win actions for other value chain actors which are defined in a participatory manner; and
- stimulating local private sector development under sustainability criteria.

The basis for BioTrade is that all value chain actors work together to promote the development of businesses and value chains based on the sustainable

use of native species via the BioTrade Principles. The BioTrade's value chain methodology provides opportunities for community members and other value chain actors to discuss and jointly work to identify and overcome barriers, reach common goals, define responsibilities and minimize negative impacts on any group of individuals. Spillover benefits are also generated for other value chain actors (e.g. non-target group members of the communities, government, academia, research and development centres, etc.). The risk of conflict arising or re-emerging is reduced as all actors are able to participate in the development of the value chain, agree and decide on their roles, responsibilities and benefit-sharing mechanisms, and define and implement mechanisms to monitor and to guarantee the flow of information to all value chain actors. This approach also facilitates the participation of minorities and vulnerable groups (e.g. women, youth, children and seniors) in the decision-making processes and benefits derived.

3.4 BioTrade interventions in post-conflict settings

In the last 60 years, according to United Nations Environmental Programme, at least 40 per cent of

all armed conflict between government and in-state groups “have a link to natural resources, and that this link doubles the risk of a conflict relapse in the first five years. Since 1990, at least 18 violent conflicts have been fuelled by the exploitation of natural resources, whether ‘high-value’ resources like timber, diamonds, gold, minerals and oil, or scarce ones like fertile land and water” (United Nations Peacekeeping, 2015). This demonstrates the importance of sustainably managing natural resources (including biodiversity), developing sustainable livelihoods and promoting peaceful and inclusive societies, in achieving SDG 16.

BioTrade activities supporting peacebuilding processes and post-conflict recovery are being implemented in Asia by UNCTAD, in cooperation with the UNDP Bureau of Crisis Prevention and Recovery (BCPR), e.g. the development of the nutmeg value chain in Aceh Selatan, Aceh Province, Indonesia. Other partners have also supported peacebuilding processes in Colombia under the National Sustainable BioTrade Programme (NSBP). BioTrade is also being implemented in other countries affected by lower level internal conflict such as Mozambique, Peru, the Plurinational State of Bolivia and Zambia.

Experience has shown that the implementation of BioTrade can also act as a tool for reintegration and livelihood recovery in post-crisis settings – including in the substitution of illegal crops. It enables the sustainable use of local resources as an engine to develop income-generating activities and businesses with tradable products and services. Reintegration options are provided through employment and alternative sources of income and livelihoods recovery for ex-combatants, displaced people and other affected groups. BioTrade products are often part of traditional culture and community identity, and thus support the integration of communities and stakeholders involved.

For conflict-affected communities in rural areas in Colombia, livelihoods are intricately related to their surrounding biodiversity from where they obtain their basic needs. Community members harvest plants, fruits, roots, fish and honey, and sell or transform them for ingredients or final products in the food, pharmaceuticals, crafts, and personal care industries, among others. Standing forests and their biodiversity and natural landscapes are also attractive tourist destinations that help generate income for families. When armed conflict interrupts, the normal functioning

of people’s income-generating activities is endangered, their access to markets, consumers and costumers and even food and medicine, is limited. In parallel, insecurity and violence grows, motivating some individuals to flee to rural areas. By providing biodiversity-based livelihood options and increasing the resilience for these actors, including displaced families, ex-combatants and associated groups, BioTrade supports peacebuilding and reintegration efforts.

In fact, BioTrade has been mainstreamed into technical papers and United Nations standards related to peacebuilding and the reintegration of ex-combatants and associated groups. The *Operational Guide to the Integrated Disarmament, Demobilization and Reintegration Standards* (IAWG-DDR, 2014) under the section on Integrating Natural Resources into DDR planning and programmes, recognizes that BioTrade can be used in DDR programmes as an economic and social reintegration opportunity that supports sustainable livelihoods in post-conflict contexts. The economic and social reintegration opportunities that can be generated by BioTrade and natural resource-based value chain development include:

- **Economic:** The “production, processing and/or selling of natural resource-based products (wild or cultivated) through a value-chain approach and micro-enterprise support.”
- **Social:** “Target groups are linked and cooperate through a market-based value chain; enterprise development supports them in forming a new identity as a business person/trade; within value chains, appropriate opportunities can be identified for all participants in consideration of gendered division of labour and gender-related norms.” (IAWG-DDR, 2014.)

The UNDP-UNCTAD Indonesia experience is also featured in the UNEP-UNDP (2013) study on *The Role of Natural Resources in Disarmament, Demobilization and Reintegration: Addressing Risks and Seizing Opportunities*. Moreover, the study identifies BioTrade within the “natural resource sectors that are important for reintegration and offer opportunities to contribute to DDR objectives of improving security and laying the ground for recovery and long-term development”. It particularly recognizes the importance of building partnerships and exemplifies UNCTAD BioTrade Initiative’s expertise in sustainable value chain development to support gender-sensitive reintegration programmes.

In the 20 years commemorative publication of BioTrade

(UNCTAD, 2017), Boyer wrote: “BioTrade has the potential to bring trade and investment to biodiversity-rich countries affected by conflict and displacement.

It can be a tool to increasing the economic self-reliance and resilience of displaced persons and host communities while safeguarding biodiversity”.

4. BIOTRADE – BUILDING A BIODIVERSITY-FRIENDLY PEACE IN COLOMBIA

Colombia is a megadiverse country;⁷ with only 0.22 per cent of the earth's surface it hosts more than 10 per cent of known global biodiversity (Chaux et al, 2014). It has many endemic species and is the country with the biggest bird and orchid species diversity and second largest in plants, butterflies, freshwater fishes and amphibians (Secretariat of the CBD, 2015b). However, the five decades of armed conflict have taken their toll both in human lives and lost economic opportunities, including from deforestation and damaged forest ecosystems. However, limited access of humans to forests due to insecurity or interdiction by armed groups enabled the conservation of many hectares of forest, many of which are still pristine. UNDP studies (2014; 2015a) on Colombia identified that most of the best conserved locations are in remote areas where development was limited due to conflict insecurity. Furthermore, 90 per cent of the post-conflict priority municipalities have protection instruments on natural resources (e.g. national parks or forestry reserves) which limit the activities that can be developed. Only in areas where conflict actually took place were the surrounding natural resources threatened and affected, such as from the placement and explosion of personal mines in some forest areas. For instance, Colciencias and other research institutes under the initiative Colombia Bio⁸ are organizing research missions to enhance the knowledge of the Colombian biodiversity and ways to protect it and provide information for policy making (Colciencias, 2017a). This research initiative started once the Peace Agreement was signed and, by August 2017, has already discovered 89 new species of plants and animals (Pardo Ibarra, 2017).

In search of livelihood opportunities, ex-combatants, affected communities and individuals will enter forest areas and extract natural resources,⁹ sometimes on an unsustainable basis – converting forests for intensive agriculture or livestock systems or mining. This will ultimately undermine the natural resources needed in peacebuilding processes to develop livelihoods; hence the importance of BioTrade.

The peace process has been underway in Colombia for many years and concluded with the signing of the Peace Agreement in 2016. In this scenario, rural and local development plays a centrepiece in the

post-conflict processes under the Comprehensive Rural Reform - Toward a new Colombian Countryside (Agenda Item 1).¹⁰ Building a long-lasting and stable peace requires, *inter alia*, a comprehensive, participatory, inclusive and equality approach that reduces the inequalities between urban and rural areas, as well as between the different citizens. Moreover, the National Development Plan¹¹ (2014-2018) *Todos por un nuevo país (All for a new country)* supports the peace processes in Colombia. The Plan focuses on three pillars (Departamento Nacional de Planeación, 2015):¹² peace, equity and education which will set the basis for the new country. Furthermore, Green growth is one of the strategic axes of this Plan that provides the basis for the development of a new economy which is more responsible with the environment, society and the people. To achieve this plan, the National Green Business Plan¹³ was launched by MADS, which is translated to regional implementation through the Green Business Regional Plans managed by the regional environmental authorities.

As the post-conflict progresses, there is a huge need to find gainful employment for income generation, and to build livelihoods and resilience for returnees, ex-combatants and the host communities in conflicted affected areas. Reducing the economic/ development inequalities between the countryside and the urban areas is a cornerstone as process, as this is one of the main reasons that started the conflict over 50 years ago. It requires actions to enhance the wellbeing and health of rural population, considering their specific circumstances, needs and opportunities.

In this scenario, if sustainably managed biodiversity and nature in general, have a huge potential to contribute to the long-lasting and stable peace needed. BioTrade can support implementing local models for developing viable businesses, value chains and sectors that build livelihoods for beneficiaries in post-conflict processes. The biodiversity-based value chains can be fostered instead of focusing only on traditional livestock and intensive agriculture activities. In fact, BioTrade has already been defined as a priority within the Colombian International Cooperation Roadmap 2015–2018, of Post-conflict Ministry and the Office of the High Commissioner for Peace for the implementation of a possible Peacebuilding Agreement (APC, 2015). Similarly, the UNDP study (2014) recognizes the contribution of BioTrade and suggests it can be further developed in communities, for conflict victims and ex-combatants in Colombia.

4.1 BioTrade in Colombia

In 1998, the globally pioneering National Sustainable BioTrade Programme (NSBP) was launched in Colombia. The Colombian Ministry of Environment and Sustainable Development (MADS) manages the programme under its Green and Sustainable Businesses Unit. From 2010–2012, MADS began a process to revise and update the conceptual framework and strategy of the programme, which at that time was implemented in partnership with the Alexander von Humboldt Institute. The NSBP is managed by the Green and Sustainable Business Office/MADS, and included as one of the sectors supported under the National Green Business Plan.

The revised programme (2014–2024) aims to “*Promote the development of innovative and competitive BioTrade businesses, contributing to the conservation of biodiversity, its ecosystem services, human welfare in Colombia, under the umbrella of Integral Biodiversity Management*”. It includes seven strategic dimensions (Duque and Sosa, 2014):

- **Strengthening of policies:** Harmonize and articulate regulations and public policies related to the use and sustainable management of native biodiversity.
- **Construction and strengthening of capacities for value chain development:** Strengthen businesses and institutional capacities to promote the development of BioTrade in the country.
- **Access to markets and product differentiation:** Position BioTrade products with high value added or certificates of differentiation in local, regional, national and international markets.
- **Science, technology and innovation:** Research and innovate in technologies, processing raw materials and products, and promoting social appropriation of knowledge.
- **Economic and financial incentives:** Increase access to financial resources (specialized or differentiated) and develop and implement financial incentives to support the growth of Colombian BioTrade companies.
- **Product and market information system – National BioTrade Observatory:** Generate and disseminate updated and reliable information on BioTrade products and services, and markets at national and international levels.
- **Monitoring, evaluation and adaptation system:** Use the monitoring and evaluation tools needed to follow BioTrade initiatives and the implementation of the NSBP.

The sectors supported include: 1) ingredients and natural products for the cosmetic, food, phyto-pharmaceutical and fashion industries; 2) flowers and foliage; 3) wildlife and pets; 4) construction materials; 5) crafts and decorative articles; and 6) ecotourism (Duque and Sosa, 2014). Almost 2,000 projects have been supported under the NSBP, benefiting community organizations and private actors working to promote the sustainable use and trade of biodiversity-derived products and services (Ministry of Environment, Housing, and Territorial Development, 2009; Rodriguez and Chau, 2014).

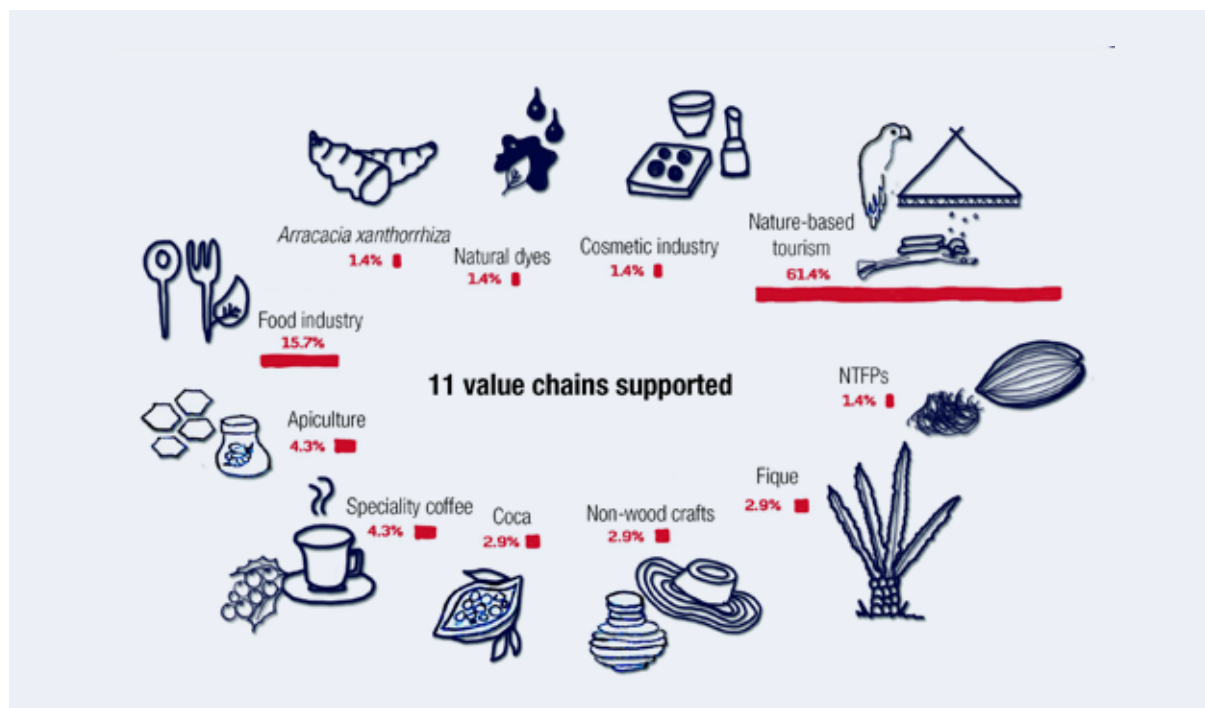
Key organizations currently supporting the implementation of the BioTrade framework include: Fondo Biocomercio, CBS and the Sinchi Institute (Instituto Amazónico de Investigaciones Científicas). Local and national government entities, private associations, academia and civil society as well as international organizations are part of the network that supports and implements BioTrade activities in the country.

Under the NSBP, several initiatives have been implemented in the coastal, Andean and Amazon regions affected by conflict. Some even have the aim of providing legal economic alternatives to illegal crops. The initiatives are supported by BioTrade partners such as Fondo Biocomercio, CBS, Sinchi Institute, CORAMBIENTE/CAF, and the Alexander von Humboldt Institute/CAR CORPOAMAZONIA, to name a few.

The value chain approach used has enhanced inclusiveness, participation of all stakeholders and consensus building, while boosting the competitiveness of the businesses and the territories in which they are located. Value chains promoted include NTFPs (e.g. natural dyes, functional foods and cosmetic products) and sustainable tourism (e.g. ecotourism, rural and adventure tourism, birdwatching, etc.). These initiatives are developed in most of the departments affected by conflict¹⁴ (Indepaz, 2017) as defined by the Colombian Post-conflict Ministry, including the departments of Antioquia, Arauca, Bolivar, Boyacá, Caldas, Caquetá, Cauca, César, Córdoba, Chocó, Cundinamarca, Guaviare, Huila, La Guajira, Magdalena, Meta, Nariño, Norte de Santander, Putumayo, Risaralda, Santander, Sucre, Tolima and Valle del Cauca, among others (Arcos Dorado et al, 2009; Duque and Sosa, 2014; CAF, 2012; CAF, 2015; CBS, 2015 and 2017; Vega and Urrea interviews).

The following sections present examples that promote

Figure 4. Value chains supported by the APC/Fondo Biocomercio project



Source: Fondo Biocomercio, 2015.

the development of biodiversity-based economic activities that enhance livelihoods for conflict-affected communities in different areas of Colombia. The first is developed under the Andean BioTrade project of CAF, Fondo Biocomercio and MADS. The second is developed by CBS in several regions in Colombia in partnership with the public and private sector. This chapter concludes with the current programme of the Green and Sustainable Business Office/MADS named: Green and Sustainable Business Generation Programme, funded by the European Union.

4.2 GEF–CAF Andean BioTrade Project in Colombia

From 2010-2014, the regional Andean BioTrade project supported and strengthened BioTrade at the local, national and regional levels as a strategy for the conservation and sustainable use of biodiversity in Colombia, Ecuador and Peru. It is a Global Environmental Facility (GEF) project managed by the Development Bank of Latin America (CAF) jointly with partners in each country. In Colombia, the project is executed by the NGO Fondo Biocomercio¹⁵ in cooperation with the MADS.

This project included the following components: (1) policy strengthening; (2) market access; (3) capacity building; (4) product and market information; (5) leverage of financial resources for BioTrade initiatives; and (6) development of pilot projects. Moreover, the project enhanced the value chain approach used by the NBSP before 2010 and included four key principles to articulate the implementation of activities on the ground:

- **Inclusive development:** Coordinating value chains and generating equitable relationships between stakeholders that encourage economic inclusion.
- **Contextualized solutions:** Adapting the activities to the environmental and socioeconomic dynamics and characteristics of the areas where BioTrade is implemented.
- **Systematic approach:** Implementing activities at macro, meso and micro levels.
- **Capacity-building:** Providing training and technical assistance to enhance individual and collective skills to reinforce dialogue platforms and multisectoral collaboration.

Under the regional Andean BioTrade project implemented in Colombia, Ecuador and Peru, more than

29,600 beneficiaries improved their working conditions and quality of life; sales of project beneficiaries increased on average by 65 per cent between 2011 and 2014, reaching \$310 million; and more than 282,000 hectares of land were managed according to BioTrade Principles and Criteria, ensuring conservation and sustainable use of biodiversity (CAF, 2015).

In Colombia specifically, 100 pilot projects were supported in 23 departments (75 per cent of the country) in the coastal (Atlantic and Pacific), mountain and Amazon regions: Amazonas, Antioquia, Arauca, Atlántico, Bolívar, Boyacá, Caldas, Caquetá, Chocó, Córdoba, Cundinamarca, La Guajira, Guaviare, Huila, Magdalena, Nariño, Putumayo, Risaralda, San Andres y Providencia, Santander, Sucre, Tolima and Valle del Cauca. These pilot projects were on ecotourism, NTFPs, sustainable agriculture and sustainable forestry. They have generated over 2,200 new jobs, \$40 million in sales between 2011–2014, with an average growth rate of 63 per cent for the period 2011–2014 and benefited 5,844 families at the first stage of the value chain (producers, farmers, collectors), out of which 40 per cent were women (Chaux et al, 2014; CAF, 2015).¹⁶ Innovation was also fostered as 24 new biodiversity-derived products were developed, such as Omega-3, 6 and 9 capsules derived from sacha inchi, extracts from açai and chontaduro powders, cosmetic products derived from açai, functional beverages derived from camu camu, açai and green tea, chips from arracacha, among others (Chaux et al, 2014). By supporting businesses and value chains in diverse and remote parts of Colombia, BioTrade offers income-generating opportunities in otherwise isolated regions of the country.

BioTrade is considered an important activity that can significantly contribute to establishing peace by offering legal and sustainable opportunities to support post-conflict and reintegration efforts of vulnerable populations. With this perspective, a joint project was developed by the Colombian Presidential Agency for International Cooperation (APC) under the Andean BioTrade project in Colombia. It implemented BioTrade as part of the post-conflict efforts in the departments of La Guajira, Tolima, Huila, Risaralda, and San Andres Providencia and Santa Catalina (Fondo Biocomercio, 2015). Thirteen initiatives were supported under this initiative (13 per cent of all pilot projects supported were under the GEF-CAF project in Colombia).

The joint APC/Andean BioTrade project included four components:

- **Strengthen regional capacities related to the sustainable use of native biodiversity:** Enhancing the capacity of local government institutions as well as other actors that support BioTrade entrepreneurs.
- **Strengthen prioritized BioTrade value chains:** Developing, identifying and assessing existing resources and strengthening the selected value chains on the themes prioritized (this relates to steps 1–5 of BioTrade’s value chain methodology).
- **Strengthen innovative initiatives that use products derived from native biodiversity:** Under the framework of *Impact Hub Fellowship in BioTrade*, a contest was conducted to search for innovative ideas that link entrepreneurship and native biodiversity in the specific regions.
- **Monitoring, evaluation and systematization of the activities implemented:** Aiming to document every action implemented but also provide a territorial policy document on BioTrade that can guide the intervention of local government.

The results achieved by this joint project in a conflict setting demonstrate that BioTrade can support the livelihoods of vulnerable communities. For instance, 439 jobs were generated and over 16,000 hectares of land was sustainably managed to generate products derived from native biodiversity. Local capacities were strengthened with the establishment of five regional grids to enhance entrepreneurship on BioTrade – building the local network of service providers and supporters. Eleven value chains (Figure 4) were strengthened by providing technical assistance to 67 initiatives on a broad range of areas including entrepreneurship, business management, marketing, commercialization, logistics, promote associativity, governance, and organizational and business development. A financial tool to support BioTrade local companies to access financial resources was also developed.

The *Impact Hub Fellowship on BioTrade* aimed at building an entrepreneurship culture. It demonstrated that native biodiversity sustainably managed could make good business. In all 161 initiatives were registered out of which 105 were qualified to participate, 24 per cent came from Huila, 22 per cent from Risaralda, 21 per cent from San Andres Providencia and Santa Catalina, 18 per cent from Tolima and 15 per cent from La Guajira. Of these initiatives, projects or operational companies, 38 per cent were led by women, and Afro-American and indigenous communities led 35

per cent of the total. Out of the seven semi-finalist initiatives, the three winners were: first – SeaFlower Coral Nursery Ecotour (San Andres Providencia and Santa Catalina); second – COSMETICOS CAFECAO S.A.S. (Huila); and third – Yarumo Blanco (Risaralda). The winners received seed funding as well as a membership of the *Impact Hub*, enabling them to participate in workshops on developing ideas, co-funding, business management and Lean Startup methodology. Technical assistance for prototype development, facilitating access to funding, legal issues, and marketing and communication were also provided to the winners. Finally, the three initiatives are also part and are connected to a global network of worldwide entrepreneurs and innovators.

Building on this latter experience, Fondo Biocomercio jointly with INNPULSA-Colombia (Business Growth Management Unit of the National Government)¹⁷ developed the Programme for Bio-businesses Acceleration (PABE - Programa de Aceleramiento de Bio-Empresas). PABE supports companies with the potential for rapid and sustained growth working on natural ingredients and sustainable tourism. The companies selected to participate in this programme benefit from the following support (Programma PABE, 2015):

- Assess and validate the rapid, profitable and sustained growth of the company by analyzing current and future trends affecting it;
- Define trends in the target market and support the development of prototypes;
- Redefine the sales strategy;
- Strengthen the company's organizational, legal, accounting, and financial capacities, and support their compliance of BioTrade principles and criteria;
- Design a promotion and dissemination campaign for the target consumer;
- Enable linkages with funding sources; and
- Accompany the company until the product or service reaches the market.

Due to the positive results of this project, a second phase was developed from November 2016 to November 2017 with the support of CAF and APC and executed by Fond Biocomercio. This phase aimed to facilitate and strengthen the economic sustainability of communities in post-conflict areas. It focused on high quality cocoa, special coffees and sustainable tourism value chains in the Departments of Arauca, Caqueta, Cesar, Cordoba, Magdalena, Guaviare, Huila, La Guajira, Risalda, and Santander (Urrea, interview

2017). The project has three components with the following results (CAF, 2017a and Urrea interview 2017):

- 1. Knowledge management and cooperation** fostering the South-South cooperation and exchange between African and Latin American countries that are part of CAF's Latin American Cocoa Initiative.¹⁸ An exchange programme was carried out for 3 cocoa and 3 coffee initiatives to Africa and trainings made by the UEBT and UTZ in The Netherlands (see Box 3).
- 2. Launching the Coffee and Cocoa Observatory (#observacafecacao)** that will include 54 initiatives by the end of the project, being 30 from cocoa and 24 from coffee.¹⁹ Out of the 54 initiatives, 32 were assessed using the Green businesses criteria. The best 9 ventures (6 cocoa²⁰ and 3 coffee)²¹ were included in the PABE. Through PABE, these businesses will be able to build their capacity and implement good post-harvesting practices, strengthen their commercial plans, have market studies that support their search for commercial partners, and incorporate BioTrade and Green businesses criteria into their business ventures. At the end of the project, these initiatives will also have a UEBT/UTZ certification pre-assessment. In addition, the 9 ventures received technical assistance to strengthen their potential to develop sustainable tourism activities (nature-based tourism, birdwatching and agro-tourism).
- 3. Raise awareness and outreach campaign to targeted stakeholders.** The programme has designed and implemented an outreach and raise awareness campaign, reaching over 100 thousand people through social media including Facebook. It also included the development of webinars with over 27 thousand participants. The webinars included four topics: (a) Linking green businesses actors: cocoa value chains; (b) Technical Cocoa Table: its challenges, implementing PABE, special coffee and Bioexpo Colombia 2017; (c) "Integrasinú" - 3rd place in the 2017 Gold Cocoa Competition,²² and cocoa as an economic alternative for peace; PABE, Cocoa Network and Green businesses and its contribution to the cocoa value chain; and (d) Interview with Juan Carlos Palacios, CAF and the Latin America Cocoa Initiative. These webinars are accessible at www.biocomerciocolombia.com/observacafecacao/webinars.

Box 3. Description of selected cocoa and coffee initiatives supported by the CAF-APC-Fondo Biocomercio project

In December 2016, six initiatives participated in the “Second meeting of co-creation and knowledge exchange between coffee and cocoa bio-chains” (Segundo encuentro de co-creación e intercambio de sabers entre biocadenas de café y cacao) held in Ghana and Amsterdam. Particularly the initiatives shared their experiences and knowledge on post-harvesting practices and learn from producers and the Research Institute of Cocoa in Ghana. Furthermore, they also benefitted from a training conducted by the UEFT and UTZ in Amsterdam on how to commercialize sustainable products in differentiated markets. With this information, the initiatives enhanced their knowledge on the requirements and opportunities to access niche and differentiated markets, as well as to provide value added to their products, such as the concept “From BEAN to BAR”.

The initiatives supported have special characteristics linked to their conservation or peace-building practices combined with the uniqueness of their native products as shown below:

- one initiative from the Cordoba Department that commercializes a native variety of cocoa that conserves biodiversity by creating biological corridors which protect threatened species (e.g. cotton-top tamarin, *Saguinus Oedipus*, commonly known as mico titís);
- one initiative in the Arauca Department that commercializes specialty cocoa, aiming to replace illegal crops;
- one initiative in the Cesar and La Guajira Departments, developing the Porcelana cocoa - a specialty cocoa - with a high demand in international niche markets; and
- three coffee initiatives in the Santander, Huila and Cesar Departments aimed to recover special coffee varieties in post-conflict areas.

Source: Urrea and Hurtado interviews, 2017.

4.2.1 COSMETICOS CAFECAO S.A.S. – natural personal care products derived from native cocoa and bee products²³

The Rivera Municipality is a traditional cocoa producer area, despite its geographical boundaries with conflict-affected departments such as Cauca and Valle del Cauca. In 2006, the community established a “Citizens’ Mandate for Life, Human Dignity and Peace” as a response to the February 2006 killing of nine councillors of the Rivera Constituent Assembly that were elected in December 2005 (UNDP, 2008). The stability and secured environment of the Rivera Municipality has enabled the flourishing of businesses and thriving of entrepreneurs such as CAFECAO which currently benefits almost 1,000 people.²⁴

COSMETICOS CAFECAO S.A.S (or CAFECAO) is an SME led by entrepreneur Diana Milena Pedroza Obando in the Rivera Municipality (Huila) that develops cocoa-based personal care products enriched with bee products: facial, hair and body masks and a lip balm. It was conceived in 2011 under the Young

Entrepreneurs Programme of the National Service for Learning (*Servicio Nacional de Aprendizaje*, “SENA”) of Neiva Huila. SENA provided technical assistance to standardize CAFECAO product formulas, which were refined after several trials. The products were then commercialized at the Hotel Campestre Los Gabrieles (Rivera) as well as in local and national trade fairs with the support of SENA. No profit was generated for the first few years of operation and five of the members left the company, leaving Diana and a colleague, Oliva Arévalo, to continue the endeavour.

CAFECAO is also supported by the National Police Carabineers Division (*Dirección de Carabineros*) in Neiva as part of their initiative on Productive Projects for Rural Prosperity and the Green Markets Programme of the Autonomous Corporation of the High Magdalena. The support provided enabled CAFECAO to reach other consumers at the national level by participating in national fairs in Bogotá, such as Agroexpo (2013 and 2015) and Colonias Fairs (2014).

CAFECAO works under a value chain approach

Figure 5. Products from COSMETICOS CAFECAO S.A.S



Photo credit: Diana Milena Pedroza Obando, CAFECAO.

and established strategic alliances directly with its suppliers:

- **Cocoa suppliers:** Cocoa Producers Association of Rivera (*Asociación de Productores de Cacao de Rivera*, ASOPROCAR) in the Rivera Huila Municipality and includes 185 members; and Chocolate Riverense that processes the cocoa used by CAFECAO.
- **Apiculture suppliers of wax, honey, propolis and royal jelly:** Apiculture Cooperative of Huila (*Cooperativa de Apicultores del Huila*, COAPI) in Huila and includes 64 members, some of which are from the indigenous reservation of Panikita. COAPI has also been a beneficiary of the NSBP in Colombia.

These partnerships enabled CAFECAO to work directly with suppliers, enhancing the quality of the cocoa and apiculture products, and implementing traceability systems. ASOPROCAR is supported by CAFECAO to implement good agriculture practices (GAP) and use natural inputs. The SME purchases the cocoa and bee products at premium prices. This price aims to motivate cocoa producers to conserve their cocoa farms and resist transforming them into other land uses.

In 2014, CAFECAO participated in the contest of the *Impact Hub Fellowship on BioTrade* and won second

place. It received seed funding as well as tailor-made coaching on the topics required by CAFECAO. Following this success, CAFECAO is developing a new corporate image for the company and its products, and is obtaining the sanitary permits for its products from the National Institute of Food and Drug Monitoring (INVIMA). The permits are essential for selling their products in stores. In addition, BioTrade is enabling the company to distribute and sell its products in stores throughout the country.

CAFECAO is also leading work on an aromatic herbs project, jointly with SENA-Huila and the Carabineers Division, in the drying of herbs and commercializing them as infusions. The aromatic herbs project involves 22 families of displaced individuals and women head of households in Community 8 of Neiva city, which is a critical location with a high poverty rate and many displaced individuals.²⁵ Under the project, the main greenhouse is located in the carabineers property, where the plants are produced and distributed to sow in the family gardens owned by the beneficiaries. Afterwards, the herbs collected are dried, packed in bags and commercialized as herbal infusions. The families are also receiving coaching on how to produce high quality essential oils with the support of SENA-Huila. In the future, CAFECAO aims to incorporate this group as suppliers of essential oils for their new veterinary product line that is under development.

Figure 6. Products and beneficiaries supported by CBS



Photo credit: CBS.

The future is promising for Diana and Oliva, as their dream to sell their products on the shelves of main distributors nationwide has become more real with the support of the *Impact Hub Fellowship on BioTrade*. Moreover, they expect to industrialize CAFECAO's production processes thanks to the EMPRENDER Fund contest that they won in 2015. Their perseverance and entrepreneurship are traits that have enabled CAFECAO to grow, while promoting the need to "advance holding hands together" ("*avanzar todos de la mano*", as she stated).

4.3 Corporación Biocomercio Sostenible (CBS)²⁶

The CBS²⁷ has supported the development of BioTrade initiatives in 21 Departments in Colombia, which includes those affected by conflict: Antioquia, Boyaca, Caldas, Caqueta, Cauca, Cesar, Cordoba, Cundinamarca, Huila, Magdalena, Meta, Nariño, Norte

de Santander, Putumayo, Risalda, Sanander, Sucre, Tolima and Valle del Cauca. So far, it has supported 130 initiatives working with honey, non-timber forest products, flowers, artisanal fisheries, handicrafts, fruits and nature-based tourism.

In conflict-affected settings, the CBS developed value chain linkages around selected biodiversity-based products and services as a strategy to conserve biodiversity and generated opportunities for peacebuilding. The Corporación developed tools and methodologies based on a community-based approach, fostering local development and strengthen institutional linkages at the local and department levels. These methodologies enable the identification of promising biodiversity-based products and further support its development through a value chain approach.

Through a partnership between SENA and UNDP, the SENA EMPRENDE RURAL programme used

CBS' methodologies to develop a train-of-trainers programme for leaders and instructors in 26 departments - 20 of the post-conflict departments prioritized by the Ministry of Post-Conflict (except: Bolivar, Casanare, César, Cordoba, Guaviare, and Magdalena). Similarly, through the partnership of the National Natural Parks in Colombia and CBS, 50 staff and community leaders from 10 national parks in the Caribbean, Pacific, Amazon and Andean regions were trained. The methodology aimed to enhance their capacity to identify and develop value chains related to sustainable tourism initiatives, handicrafts and fishing, and link them to the national market. Two pilots were developed in post-conflict departments being La Guajira (Macuira National Natural Park) and Nariño (Sanquianga National Natural Park). The other pilot was in the Amazonas Department (Cahuinarí National Park). CBS tools and methodologies to identify and strengthen biodiversity-based productive chains have been implemented in the field and directly reached post-conflict areas and strategic ecosystems (protected areas, buffer zones, dry and high mountain forests. Arcos (interview) state that "CBS aims to build sustainable territories that allow the inclusion of vulnerable groups and ex-combatants through the sustainable use of biodiversity as an economic alternative".

CBS has also work closely with the regional environmental authorities in different departments. In partnership with regional environmental authority "Corpoamazonia", CBS developed a green business assessment for the Departments of Amazonas, Caqueta and Putumayo. It identified 176 initiatives working on crafts, tourism, non-timber forest products, flowers, fishes, agroindustry, among others. Business plans were not only developed for 45 existing initiatives, but also to eight business new businesses. Through the joint efforts of the entrepreneurs, Corpoamazonia and CBS, investment was channeled for 20 businesses working on ecotourism, NTFPs, handicrafts, natural ingredients, coffee, specialty cocoa and Amazon fruits. The average investment per initiative was approximately \$2,700 (5,000,000 Colombian pesos) and used to buy inputs, tools, access to trainings, designing corporate images, and product standardization, among others (Arcos interview November 2017). Finally, another interesting example was developed in the Department of Antioquia, and this project and testimonies of beneficiaries are presented below.

4.3.1 The CBS and ISAGEN E.S.P. project (2010– 2013)²⁸

The Andean region in Colombia is endowed with a rich biodiversity due to its landscape, altitude, microclimates, among other factors, enabling the existence of over 10,000 species. Despite its rich resources, the region has a high deforestation rate estimated at over 80,000 hectares of Andean forest per year (Burgos et al, 2014).

The importance of protecting Andean forests led CBS and ISAGEN E.S.P.²⁹ to establish a partnership for promoting BioTrade within the 100,250 km² of Andean forest area that is conserved and protected by ISAGEN E.S.P. BioTrade had a dual goal to conserve biodiversity and generate additional income for local communities in the centre of the Colombian mountain region, in Eastern Antioquia and Caldas. In particular, the project focused on the municipalities of San Carlos and San Rafael in Antioquia Department and the municipalities of Manzanares, Marquetalia, Victoria and Norcasia in Caldas Department. This project also collaborated with local government entities particularly municipalities and the regional autonomous corporations, as well as community-based associations, NGOs and other stakeholders working in the target area.

Assessment activities were carried out to identify potential BioTrade products and services to be supported, as well as operational initiatives working in the target region. Market studies were also developed to assess the demand side for the selected products. These studies assessed the potential of the initiatives and the region to establish feasible businesses dealing with ecotourism, NTFPs, sustainable agroforestry systems and apiculture. In 2010, CBS identified 48 companies, 58 per cent located in Antioquia and 42 per cent in Caldas, taking into account social, environmental and legal considerations. Targeted technical assistance was provided to each initiative considering the gaps identified in the assessments, covering themes such as business management, processing, logistics, marketing and co-funding. The value chain approach was also introduced to the beneficiaries in order to strengthen their businesses, foster regional development, promote collaboration and be more competitive based on the sustainable use of the resources, cultural recognition and an equitable sharing of benefits.

For communities affected by conflict and displaced individuals, receiving assistance to overcome their needs can help them build and/or recover their livelihoods. The project, guided by BioTrade's Principles and Criteria and the value chain methodology, built the capacities of local initiatives through technical assistance, training and grants. Co-funding was provided, for instance, on processing equipment and instruments, building compost bins, acquiring beehives, establishing family gardens, developing company branding and the legal constitution of companies. BioTrade has generated positive livelihood impacts for conflict-affected or displaced families as described in the following examples.

4.3.2 Developing solidified sugarcane juice in Antioquia

Rodolfo Giraldo's family has been producing *panela* (solidified sugarcane juice) traditionally since his grandfather built a mill over 70 years ago. They used an animal traction mill that was not always adequate to process all the sugarcane available and despite the long working hours (3am to 5pm) some was wasted. In 1995, Rodolfo, together with his brother-in-law, began thinking about introducing a machine to mill the sugarcane. Unfortunately, this was undermined by various factors, including the presence of armed groups that fought to control the area in 1998. This enhanced violence, insecurity, fear and humiliation among local families caused many to flee the area. Rodolfo and his family took their basic belongings and their horse – used to mill the sugarcane – and fled to the municipality's capital city. After 14 months, they decided to return, where only three families had stayed put. Rodolfo and his family started from scratch, and their survival was even made difficult as the main routes were closed, rendering the products not marketable in other regions and cities like Medellin. Furthermore, his brother-in-law was killed during the conflict. By himself, he continued milling sugarcane manually, with the help of his horse, as life gradually returned to normal from 2000 onwards.

In 2011, CBS and ISAGEN E.S.P. co-funded Rodolfo to obtain a sugarcane mill machine, as well as a compost bin, a family garden and trees (fruits and timber) to diversify his three-hectare farm, promote food security and implement good practices to conserve biodiversity. He also received capacity-building activities on GAP. Currently, the mill processes between 10–12 *arrobos* (147–176 kgs) of *panela* and benefits five families that harvest sugarcane and jointly

mill it with Rodolfo's machine. The benefits generated by the *panela* sales are equitably distributed among all those participating in the mill.

4.3.3 Developing sustainable tourism initiatives in Antioquia

The region, due to its different ecosystems, species, climate and landscape, has huge tourism potential, once security is established. The CBS/ISAGEN E.S.P. project identified key tourist attractions as well as initiatives that could be further strengthened in order to contribute to biodiversity conservation, enhance local livelihoods and be economically feasible. Two examples are described below.

The first initiative is the ecotourism centre "Los Lagos" which is a family business headed by Leonel Rendon in the Municipality of San Rafael (Antioquia), in the rural community of Manila. Family fishing was the family business activity, which was prosperous until different armed groups visited their region and violence and intimidation arose. Leonel and his family decided to stay on their farm despite the risks and fear, as they could at least find something harvested from the forest for food – which was not possible when living in urban areas. When the armed groups left the area, Leonel decided to rebuild his fish farm and sell fish again. As the business progressed, he started offering recreational fishing activities. The CBS and ISAGEN E.S.P. project supported the creation of a new ecological trail and provided tailored capacity-building activities to enhance the ecotourism centre and the tourist services provided. The business continues to grow and has received support from local stakeholders on reforestation activities and also on promotional campaigns (e.g. inclusion in the department's tourism offer). Through a loan, Leonel expanded his fish farms and has also set up two rooms for accommodating clients who want to fish in the morning and walk the forest trail. Leonel now has ten fish farms with 13,000–14,000 fish.

Another experience is that of Estrella de Jesús Echeverry, from La Granja, in the Municipality of San Rafael. She is an entrepreneur who took on sole responsibility for her four daughters after her husband was killed by paramilitaries in front of her house. After the incident, she went to live in another community for a few weeks, but decided to return home and manage her farm. Despite the progress made in developing their livelihoods, military groups continued to visit her home and would take all their food (chickens and fish). She

never gave up; continuing to advance to build a better future for her family. Fortunately, she received support from local institutions such as Corporación Autónoma Regional de las Cuencas de los Ríos Negro y Nare, Codesarrollo (now Social y Ambiental Foundation) (Social y ambiental, 2014), Fondo para la Acción Ambiental and the municipality's government which aimed at supporting violence-affected populations in 20 municipalities in Antioquia through agriculture activities (e.g. poultry, family gardens). In addition, Estrella participated in reforestation programmes led by local organizations and benefited from ISAGEN E.S.P. training activities to develop apiculture. She received 19 hives and equipment to manage them. Under this project, additional capacity-building activities were also developed which enhanced participants' (including Estrella) knowledge on the management of apiculture and Meliponini bees. Furthermore, training was also provided on ecotourism and the implementation of good practices and tools for environmental conservation, as well as a compost bin and 100 fruit and timber trees. This support has enabled her to obtain additional income from beekeeping, as well as from the tourist attractions her farm offers (e.g. fish farming). Her dream is for the business to continue growing and be able to offer more tourist services (e.g. accommodation) to her visitors.

4.4 MADS Green Business Generation Programme

The Green and Sustainable Business Office of MADS aims to promote instruments and tools that support economic decisions contributing to the conservation and sustainable use of biodiversity and renewable natural resources, as well as to promote business strategies that enhance the conservation of the environment, biodiversity and the use of genetic resources, in the framework to develop competitive productive sectors with a high environmental component (translated from Quintero, 2016). The Office implements the National Green Business Plan since 2014, responding to the National Development Plan 2014-2018.

In 2015, MADS launched the Green Business Generation Programme with the support of the European Union. This Programme, aims to "improve the opportunities for income generation of vulnerable communities through green and sustainable businesses, in the context of sustainable use of biodiversity" (MADS, 2017). It targets 653 green

and sustainable businesses to be generated and supported from 2016-2019, covering 60.56 per cent (or 195) of the municipalities listed by the Ministry of Post-conflict (MADS, 2016).

Through this programme, MADS enhances the capacities of environmental authorities in each department as defined in the Regional Green Business Plans and their action plans. The actions focus on the conservation of the environment as a means to support local development. Each environmental authority creates a Green Window to identify, support and monitor the development of green businesses using the 12 green business criteria³⁰ defined by Green and Sustainable Business Office/MADS. The environmental authorities are focused in developing a network of business providers, complementing their offer on sustainable management of natural resources with business management and market issues. For example, they have been collaborating with business chambers, universities, NGOs, as well as other government entities and programmes.

Three components are being implemented to achieve its objective, being (MADS 2016 and Quintero interview 2017):

- Institutional strengthening: focusing on enhancing the capacity of Environmental Authorities in the different departments in Colombia and supporting the implementation of their Regional Green Business Plans and the operation of their Green Windows. It also supports the regional authorities to identify and articulate with other organizations to enhance their services in support of the green businesses.
- Green business development and strengthening: after verifying the compliance of each green business to the 12 green businesses criteria, improvement plans are developed and technical assistance provided to them. So far, more than 400 businesses have been supported in 15 Departments in Colombia. In 2016 alone, 38 per cent of the 154 businesses supported were under the BioTrade category, including non-timber forest products, nature-based tourism and products derived from wild fauna (MADS, 2017). The assistance and training provided includes business management and the implementation of biodiversity-friendly practices, as well as supporting their participation in the national trade fair BIO Expo. This is the biggest national trade fair for green businesses in Colombia and its seventh edition was organized in Barranquilla in October 2017. The programme

also supports the development of differentiation schemes (e.g. development of a green and sustainable label). Other market-related support was provided in coordination with the Colombian Ministry of Trade, Industry and Tourism.

- Processes and instruments to strengthen the businesses competitiveness: developing tools to support the verification of the green business criteria and the development of the business improvement plans. The programme also supports the regional environmental authorities to carry out a monitoring and evaluation system, as well as communication and raise awareness campaigns.

In addition, the Office has also been providing training to ex-combatants and returnees on environmental issues, including the development of green businesses. The latter is widely demanded as ex-combatants and returnees are looking for ways to be integrated into civil life through the development of feasible business. MADS has also joined SENA in delivering a course on green businesses development focusing on sustainable criteria, which combines face-to-face and virtual participation

Through all this work, the Green and Sustainable Business Office/MADS aims to contribute to an environmentally and stable peace in Colombia.

4.5 Final comments

As Colombia starts this new peaceful and development phase, a door opens for promoting sustainable businesses that enhances the livelihoods of rural and marginalized communities, returnees and ex-combatants. The rich biodiversity areas once considered as unsecured are now open for researchers and scientist to inventory them and design conservation and sustainable use plans and initiatives. Colombia Bio is one of such initiatives that aim to capture this opportunity and 20 Bio Expeditions are underway from 2016–2018 (Colciencias, 2017b). The

rich biodiversity that has been conserved and is now accessible can be a source for an economic activity and building livelihoods only if used under social, environmental and economic sustainable criteria.

The Peace Agreement highlights the importance of improving the living conditions in the countryside, but does not necessarily emphasize the importance that sustainable use of natural resources, including biodiversity, can play in this process. Different stakeholders such as governments, private sector, civil society and cooperation, as well as local organizations can support mainstreaming biodiversity into the post-conflict process and programmes in the ground. Moreover, a comprehensive approach to mainstream biodiversity, including BioTrade, at the national level can be built upon existing national programmes and policies. For example, the National Development Plan (2014-2018) through the promotion of Green growth, the Colombian Sustainable Consumption and Production Policy, MADS National Green Business Plan, and Colombia's recent adhesion to the OECD Green Growth Declaration (Quintero interview 2017).

The examples provided in this section show how BioTrade has already been promoting livelihoods in conflict affected regions in Colombia, which provides a basis to build a post-conflict process using biodiversity sustainably. The development of green businesses, including BioTrade, can be a strategy that enhances the self-reliance and resilience of conflict affected communities, returnees and ex-combatants. It has been recognized by UNDP (UNDP, 2014) as well as in the Colombian International Cooperation Roadmap 2015–2018 (APC, 2015). Despite the progress made, efforts are still needed to consolidate the results, and address the needs and expectations that arise in the post-conflict process. Limited resources (both human and financial) and institutional support, and an enabling policy environment are some of the challenges BioTrade and biodiversity stakeholders need to address for contributing to a long-lasting and sustainable stable peace.

5. PEACEBUILDING AND THE NUTMEG VALUE CHAIN IN ACEH SELATAN, INDONESIA (UNCTAD–UNDP)³¹

UNCTAD started collaborating with UNDP's BCPR in 2009, by exploring joint areas to foster economic and livelihood recovery, sustainable use of biodiversity and trade of its derived products and services. As BCPR and UNCTAD BioTrade were already working together in Colombia and Indonesia, capitalizing on the natural synergy further, a pilot project was implemented from June 2010 to December 2011 to develop the nutmeg value chain in Aceh Selatan, Indonesia via UNDP's "A Gender-Responsive Approach to Reintegration and Peace Stabilization: Pilot Project in Aceh Selatan" (see Box 4). Under the project's *Component 2: Economic support to vulnerable persons, with a focus on women*, UNCTAD contributed through the BioTrade Initiative to facilitate the recovery and empowerment of the community's economy through the development of the nutmeg value chain under BioTrade Principles and Criteria. This section presents the main results and lessons learned.

5.1 Peacebuilding in Aceh Selatan, Indonesia

Owing to its 17,508 islands and diverse population of hundreds of ethnic groups, Indonesia's struggle to stay united and peaceful has been a perpetual challenge. Additionally, between 2004 and 2013, Indonesia ranked as the world's most disaster-prone country

registering the largest number of people affected and/or killed (UNESCAP, 2014). The mega-earthquake and tsunami that hit South Asia on 26 December 2004 took its worst toll on human lives and livelihoods in Aceh Selatan, a coastal province. Prior to these massive natural disasters, the province had been suffering a 30-year conflict between the central government and the separatist group Free Aceh Movement (*Gerakan Aceh Merdeka* or GAM). (Doocy S et al, 2007; United Nations Information Management Service, Office of the United Nations Recovery Coordinator for Aceh and Nia, 2005; UNEP, 2007.)

In August 2005, the Government of Indonesia and the Free Aceh Movement signed the Helsinki Memorandum of Understanding that ended the conflict in the Aceh Province (Large and Large, 2008; BBC, 2105a).³² The conflict affected the province negatively by limiting its physical, social and economic development and also increased gender-based violence against women (Trinurini-Adhi and Wuriati, 2012). Disparities between the urban and rural population had also risen with poverty rates increasing proportionally with distance from urban areas. Thirty per cent of Aceh's households lived below the poverty line, 50 per cent more than those living in the rural areas (Trinurini-Adhi and Wuriati, 2012). To tackle these challenges, the Gender-Responsive Approach to Reintegration and Peace Stabilization Project was implemented with the support of UNDP BCPR's Bureau for Development Policy and UNDP Target Resource Assignment from the Core (TRAC) funds. The project was implemented under the bigger umbrella project, Peace Through Development, in cooperation between the UNDP Country Office Indonesia and the National

Box 4. UNDP Gender-responsive approach to Reintegration and Peace Stabilization Project, June 2010–December 2011

The project was designed to address the adverse impacts of the conflict on women in rural areas in Aceh Selatan, Indonesia. It strengthened participatory conflict-sensitive development planning in pilot villages of Aceh Selatan and provided individual and institutional capacity building to improve legal, psychosocial and economic services to vulnerable people, particularly women. Initiatives under this pilot project have been applied and followed up by the local government.

The project's second output, relating to BioTrade, was to provide "economic support to 450 vulnerable persons, with a focus on women, including female ex-combatants (FXC), women associated with armed forces and groups (WAAFAs) and conflict victims (focus on GBV victims), in high conflict villages through involvement in the supply chain of selected BioTrade products/services."

Sources: Trinurini-Adhi and Wuriati, 2012; Suhud (interview); UNDP and Government of Indonesia, 2012.

Figure 7. Nutmeg collectors and sweets female producer as well as the fruit and sweets, in Aceh district



Photo credit: Lorena Jaramillo Castro

Development Planning Agency (BAPPENAS) from 2006 until mid-2012 (Suhud, interview). Within this UNDP project, was *Component 2: Economic support to vulnerable persons*, which included BioTrade as a strategic alternative to support (under a community-based approach) the reintegration of women, including female ex-combatants, women associated with armed forces and groups and conflict victims in Aceh Selatan.

Aceh Selatan is a coastal district covering 3,842 km² with 80 per cent of the land within the Leuser Ecosystem³³ 70 per cent of which is conservation areas or protected forests. It is a district with high biodiversity as evidenced by having the largest remaining population of the critically endangered Sumatran tiger, as well as elephants, orangutans and 90 per cent of the mammal species found on the IUCN Red List of critically endangered species. The conservation and sustainable management of its territory is essential not only to the survival of species but also to the health of the Leuser Ecosystem (UNCTAD, UNDP and UNEP, 2010). Aceh Selatan comprises 18 sub-districts and its capital is Tapaktuan. The district is also renowned for nutmeg – fruit, mace and dried seeds – the last

two are commercialized as spice and essential oil. Nutmeg oil is marketed to Medan and Padang in Indonesia, and further exported mainly to Asia, Australia and Europe (Aziz, 2009). In practice, women are traditionally involved in the production of nutmeg syrup and sweets, which are generally sold locally.

5.2 UNDP–UNCTAD peacebuilding and the BioTrade project

The UNCTAD BioTrade value chain methodology guided the intervention, enabling a holistic approach, and addressed all steps and stakeholders in the chain from on-farm cultivation to commercialization of the value added products. It started from developing a BioTrade assessment of Aceh Selatan, which included not only the identification of initiatives and native species being used, but also an analysis of their demand and supply.

Afterwards, potential value chains were identified, mapped and screened based on social, economic and environmental criteria and inputs from national and international experts. After a participatory assessment and value chain workshop organized in Medan in

Box 5. Aceh Selatan nutmeg and the pilot project

Nutmeg (*Myristica fragrans* Houtt) or pala in Bahasa Indonesia has been a historical and cultural commodity that has generated livelihoods for communities in various regions of Indonesia, particularly Aceh Province, over the last 500 years. In 2013 world production of nutmeg oil reached 600 tonnes, 40 per cent (280 tonnes) of which was from Aceh Province (Forpala, 2015). Nutmeg trees are tropical evergreen trees indigenous to Indonesia and the fruits (and their derivatives) have long been traded across the globe with Indonesia the major nutmeg producer globally. Production is environmentally friendly and developed under policulture methods, i.e. mixed with other plants such as patchouli, coconut and areca. Although all parts of the nutmeg fruit are aromatic, the most common products include: seeds and mace (used in the food processing industry) and essential oils (used in food, cosmetics and the perfume industry). The district of Aceh Selatan is one of the nation's main producers of nutmeg.

During the armed conflict, the majority of nutmeg farmers and producers had limited access to and could not maintain their nutmeg plantations due to insecurity. Consequently, nutmeg trees were severely affected by pests and diseases, rendering 60–80 per cent of the plants damaged or unproductive. After the peace agreement, farmers continued to depend on nutmeg as a key income source, but as the trees were unproductive or damaged, many farmers looked for new jobs or tried to change their production focus, though alternatives were severely limited at the time. Indeed, the paucity of feasible livelihood opportunities posed (and continue to pose) a significant risk for the peaceful development of the district (Ruhanawati, 2012a).

The UNCTAD-UNDP intervention on BioTrade in Aceh Selatan began at the reintegration phase, after five years of the peace agreement, and economic reintegration actions for ex-combatants and conflict-affected communities were essential. At this stage, BioTrade concepts and methodologies were used to contribute to practical and environmentally friendly socioeconomic alternatives for generating employment and income based on the sustainable use of nutmeg and the commercialization of its derived products (Ruhanawati, 2012).

As part of the project, constraints that limit the development of the value chain were identified jointly with all the value chain actors, including grassroots communities, traders, industries, government, academia and NGOs. The nutmeg crops' exposure to pests and diseases was one of the major concerns prioritized during the assessment phase and actions were developed to tackle this issue. Other key issues considered were the organization of the sector (e.g. creation of an association or similar), enhancement of the quality of nutmeg and its derived products, increase in product diversification, and better market information and access (UNCTAD, UNDP and UNEP, 2010).

Other sources: FAO, 1995.

September 2010 with all value chain stakeholders (producers, processors, industry, government, academia, NGOs and international cooperation agencies), the nutmeg value chain was selected. A field trip was organized and, once all the inputs had been gathered, a workplan was formulated and subsequently implemented to develop the nutmeg value chain. Indeed, nutmeg was an established choice as it has always been a very important product for Aceh's economy and culture as shown in Box 5.

To ensure that BioTrade was considered as an approach to support environmentally sensitive

livelihoods recovery programming where appropriate, information on best practices and lessons learned on BioTrade was provided for the development of UNDP's post-crisis livelihoods recovery, inclusiveness, employment and economic revitalization policies. Furthermore, the UNCTAD-UNDP partnership ensured that aside from the existing resources and tools of the BioTrade Initiative, the pilot project's guidance and methodologies were adapted to incorporate principles of conflict sensitivity, gender responsiveness and resilience to future disasters and conflicts to aid the post-crisis livelihoods practitioners.

Technical assistance was provided, for instance, on challenges identified, such as the need to address problems regarding the pests and diseases of nutmeg trees, foster associations and enhance production practices. Access to markets was also a key concern in the project implementation, where contacts and cooperation were made with global leaders in the fragrance and flavour industry (as potential buyers), import promotion initiatives such as the Dutch Centre for the Promotion of Imports from developing countries and the Swiss Import Promotion Programme, market experts and other stakeholders who were part of UNCTAD's BioTrade network.

5.3 Achievements

5.3.1 Nutmeg-based organizations

One of the major accomplishments of the project was the creation of the Nutmeg Forum (or Forum Pala, Forpala) and the Nutmeg Cooperative in Aceh Selatan. The project set up the basis for and provides the legal support upon which Forpala was established, including developing its vision, mission, objective and operation. Through such strong foundation and with the commitment of its members, Forpala is still operational and has continuously received strong support from local government and international cooperation.

Forpala was formally established in Aceh Selatan in December 2010, an event attended by representatives from local government, academia, nutmeg farmers, traders and representatives of relevant sector associations, such as the Indonesian Essential Oils Council. The forum's main goal is to enhance the economic welfare of the "nutmeg community" through strengthened collaboration and cooperation amongst farmers, producers, distillers and local government. It aims to promote nutmeg products and improve the services offered to farmers and producers through training and capacity-building activities provided within the framework of the forum. Forpala was built upon lessons learned from the Coffee Forum established under the Aceh Partnerships for Economic Development (APED) project supported by UNDP Indonesia, as well as from UNCTAD's BioTrade experience around the world. (UNDP, 2012; Ruhanawati, 2012a). One of the key achievements of Forpala is the support that it has received from the local authorities, "the establishment of *Forum Pala* has successfully advocated to the South Aceh Government

(Forestry and Plantation Agency (Dishutbun), Agency for Food Security and Agriculture Facilitation (BKP3), Regional Development Planning Agency (BAPPEDA) to continue the pilot intervention to improve nutmeg production and marketing in their development plan" (Trinurini-Adhi and Wuriati, 2012).

Several months after Forpala was founded, the Nutmeg Cooperative was established on the basis of advice from UNCTAD and other business actors. Reports indicate that this cooperative has been useful for increasing access to credit for the producers involved in the nutmeg value chain. In addition, financial and technical assistance from the United States Agency for International Development (USAID) Indonesian Forestry and Climate Support (IFACS) project supports Forpala's activities in further developing the nutmeg value chain (UNDP, 2012; Ruhanawati, 2012a; Forpala, 2015).

In an effort to enhance the economic productivity of nutmeg as a commodity, a workshop on nutmeg business development was organized in Aceh Selatan in October 2011. A broad range of stakeholders in the nutmeg sector attended, from government and private sectors, academia and civil society. The Tapaktuan Agreement was a key outcome of this workshop. The agreement commits a wide range of stakeholders (the Government of Aceh Selatan, the Provincial Government of Aceh, the Directorate for Plantation in the Ministry of Forestry, private sector, farmers, producers, research institutions, universities and other nutmeg-producing districts and provinces in Indonesia) to continued advocacy on and support to developing the nutmeg value chain (UNDP, 2012; Ruhanawati, 2012a).

5.3.2 Capacity-building activities and other technical assistance provided

When the project started, many nutmeg trees had already been lost due to years of damage and destruction from pests and diseases, which farmers' lacked knowledge on how to combat. The project commissioned the Indonesian Spice and Industrial Crops Research Institute (Balittri) to conduct research on this issue. The farmers benefited further from demonstration plots that were set up to apply various pest and disease control techniques aimed at improving nutmeg farming methods. Also, nutmeg producers and farmers received technical assistance from field extension workers trained in cultivation and pest and disease management (see Box 6). As

Figure 8. Workshop where the Tapaktuan Agreement was signed



Photo credit: UNDP Indonesia

a positive indication of government support after the project was implemented, district level Dishutbun and BK3P replicated training on nutmeg cultivation practices, pest management and post-harvest in 2012 (Trinurini-Adhi and Wuriati, 2012; UNDP, 2012; Ruhanawati, 2012a).

To complement activities in the field, the project included training to develop and commercialize quality value added products from nutmeg, including sweets, syrups and essential oils. Women mainly led the production of sweets and syrups in their houses effectively enhancing their source of income directly by the project. Many of the beneficiaries diversified their markets and have now ventured into selling their products in other districts (see Box 7) (Ruhanawati, 2012a).

A total of 516 nutmeg producers and 182 farmers participated and were trained via the pilot project, almost 50 per cent of whom were women (UNDP, 2012). As a result, nutmeg producers and farmers have enhanced their farming practices by applying new methods to increase productivity. Additionally, there is more evident awareness of the importance of managing pests and diseases; and local government has committed and planned to allocate funds from the district's autonomous fund to control nutmeg pest and diseases. The project also strengthened local institutions and empowered them to provide technical assistance to the beneficiaries. Guidance to the farmers on group management and the benefits of working together were provided by BKP3 (UNDP, 2012; Ruhanawati, 2012a).

In essence, the work undertaken by UNCTAD and UNDP on BioTrade has enabled local organizations to:

- Provide business and vocational skills training to women, including training of trainers, so women entrepreneurs can provide counselling and skills training in their communities.
- Establish linkages with the private sector as well as credit and savings groups that can help to stabilize newly created and existing enterprises.
- Encourage marginalized and poor women to save for income-generating investments and unforeseen expenses.
- Promote market access for women entrepreneurs, e.g. opportunities to participate in trade fairs.

The capacity building activities and Forpala's participation at a provincial level trade exhibition (one of the first activities of the cooperative after it was

Box 6. Testimonials from a beneficiary of the project's capacity-building activities

Abdurrahman (nutmeg farmer and businessman)

"During the insurgency, most of the people (especially men) in Aceh Selatan were scared to pursue their usual economic activities for fear of being caught between the violent fights between the government and the GAM. People abandoned their farms for security reasons. I was one of them. I used to grow areca nuts, mango trees and some nutmeg trees. When I returned to my farm after the conflict, the nutmeg trees were destroyed by pests. I didn't know what to do. Luckily, Forpala offered some training on nutmeg plant grafting and I was encouraged to learn the techniques to protect my farm. The activities offered by Forpala were very interesting and useful and I decided to manage my farm and plant more nutmeg trees. My nutmeg farm is not completely pest-free yet but I feel more confident now to continue growing nutmeg. It takes time, but I'm looking forward to harvesting my first nutmeg fruits in the near future, and hopefully, master the cultivation of quality nutmeg trees."

Source: Ruhanawati, 2012a.

established) not only allowed it to make an initial turnover of IDR 13 million (\$1,480) but also encouraged its members to add value to their products by obtaining food and health permits, improve their techniques for processing and refining nutmeg oil, enhance the packaging of their nutmeg food products and diversify nutmeg food products to make them more appealing to both national and international markets. This has resulted in improved bargaining strength and an increase in demand for nutmeg products.

At the end of the project, nine out of the 16 sub-districts in the area had started to grow nutmeg and produce several products derived from the nutmeg fruit and seed such as sugared candies and syrup, spice and essential oil. Each product forms part of the overall value chain and is important to the economic livelihood of the targeted groups in the communities. There was also an increase in interest among the many actors along the value chain as the intervention created incentives and opportunities for small business

innovation and investment. The increased access to financing and economic support through Forpala strengthened support for crisis-affected people (including ex-combatants and internally displaced people), 40 per cent of whom were women, who, due to local customary laws and cultural values, could not benefit from reintegration programme benefits available post-crises (UNDP, 2013). Forpala's capacity and other relevant institutions that support women's economic empowerment were strengthened and women's employability in post crisis Aceh Selatan was enhanced (See Box 8, Ruhanawati, 2012a).

5.4 Final comments

This pilot project in Aceh Selatan also assessed and recognized the relevance of BioTrade as a reintegration option in post-conflict settings. The results achieved (UNDP, 2012), as well as the integrated and positive behavioural changes among the multi-stakeholders, indicated improved mutual trust, awareness of

Box 7. Testimonials from women beneficiaries of the project's enhancement of commercial nutmeg

Yusnida (mother, businesswoman and nutmeg business advocate)

"I have been working with nutmeg food products for as long as I can remember and I am very passionate about this business as it has helped me and my family financially over the years. I sell my nutmeg sweets and desserts all over Indonesia and the establishment of Forpala in Aceh Selatan has made me very happy as I can share my experiences with others who would like to start their own nutmeg sweets business. I don't mind seeing more people get involved with nutmeg business after attending Forpala's trainings and workshops as I used to be one of them (beginners in the business) and I consider it a positive challenge for me to innovate my products and be aware of other great nutmeg products out there. I only feel privileged to promote and represent Aceh Selatan's nutmeg industry at various trade fairs and expos all over the country. I'm sure there will be a lot more in the near future. For now, my time is spent creating new recipes and assisting Forpala whenever and however I can."

Raini (housewife and businesswoman)

"I have not attended any training held by the Nutmeg Forum (sponsored by UNDP-UNCTAD) yet, but its presence in Aceh Selatan has changed my life from that of an ordinary housewife and mother to becoming a nutmeg product producer. I used to think that profits from nutmeg were for traders and farmers only until one of the training participants shared with me some ways to capitalize on nutmeg-based products. I was then encouraged to make nutmeg cakes and sell them. Since 2012, my business has steadily grown. I make about 300 pre-ordered packages per month and I am confident that there will be a regular demand for my products going forward. Nutmeg has become a part of my life and I see the same change in other people in the village. There are more nutmeg trees being planted as we realize there is much potential in it. Thanks to Forpala and UNDP-UNCTAD, as they have changed my life and that of many others in this village for the better."

Source: Ruhanawati, 2012a.

Box 8. Forpala and its activities after the conclusion of the UNDP-UNCTAD pilot project

Forpala aims to increase family income in South Aceh by enhancing the nutmeg value chain, via four goals:

- Improve skills and knowledge of best practices in nutmeg planting; emphasising integrated pest and disease control.
- Improve the skills and knowledge of farmers in producing high quality nutmeg oils and other derived products, such as food products.
- Improve the quality of the branding, packaging and market penetration for nutmeg oil, food and beverages.
- Strengthen Forpala as a multi-stakeholder forum for nutmeg producers in nine districts in South Aceh.

Forpala has been a beneficiary of the USAID IFACS project. It has worked in collaboration with local government to implement several activities to benefit farmers in South Aceh districts. Some examples of the outputs achieved under the USAID IFACS project are:

- Establishment of a network in nine districts, benefiting 225 households.
- Study visits organized to Aceh Coffee Forum and to the Cooperative of Baburrayyan, benefiting 22 participants from the nine districts, in addition to the Forpala board and project team.
- Continued implementation of nutmeg pest controls with the support of Balitri and Syiah Kuala University (UNSYIAH).
- Trained 618 nutmeg farmers in 11 districts to mitigate damage caused by pests and diseases, and implement good agriculture and environmentally friendly practices, including the production of compost.
- Conducted training on the preparation of nutmeg derived products such as sweets, instant beverages and sauces.

Source: Forpala, 2015.

communities' guardianship of the rehabilitation process as well as a more cohesive approach to peace, development and livelihood recovery – all of which contribute to building more peaceful and inclusive societies in Aceh Selatan, Indonesia. Environmental benefits have also been generated by the project as evidenced by the district head in Aceh Selatan issuing a "*perda* or *peraturan daerah* (local regulation) that regulates the prohibition of catching, caging and killing a specific bird species known to be a predator of a particular pest/worm that feeds on the roots of the nutmeg tree trunk. The issuance of this *perda* is one of the policy supports of the supply chain of nutmeg in Aceh Selatan district." (Suhud, interview).

The technical assistance and financial support provided by UNDP and UNCTAD's BioTrade Initiative during the project's life span, enabled the establishment of Forpala as an organization that leads the development of nutmeg in the Aceh Selatan. As UNDP's final project report (2012) stated:

"The promotion of nutmeg as a BioTrade commodity in Aceh Selatan has been a success. The project integrates a holistic approach and has addressed all steps in the value chain process, from on-farm cultivation to off-farm marketing. Prior to the intervention, the potential of nutmeg was not explored comprehensively. The skills knowledge and attitudes of both community and government have changed significantly and the actors have brought together under the Forpala..." (UNDP, 2012).

The project opened up opportunities for practitioners to better understand and implement tailored approaches on environment, peace, reintegration and livelihood recovery in Aceh Selatan. Forpala has been strengthened and continues to operate even after the conclusion of the UNDP-UNCTAD project. Currently, financial and technical support to Forpala is being provided by USAID IFACS, together with local government cooperation (see Box 8).

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 General conclusions and recommendations

Biodiversity is the basis for the healthy functioning of ecosystems that provides services to satisfy the needs of populations – e.g. food, shelter, medicine, livelihood, clean water and nutrient cycling in soils. Many post-crisis countries are also areas of high biodiversity, where globally and/or regionally significant species and ecosystems exist. As countries emerge from crisis, meeting the basic needs of their populations is vital for recovery that necessitates healthy and functioning ecosystems. Ensuring recovery through promoting livelihoods may result from the sustainable use of biodiversity to develop and trade products and services. These unique products and services take advantage of what a country's particular biodiversity may offer and the growing market demand to enhance the wellbeing of its inhabitants.

This is precisely what BioTrade does. It develops sustainable livelihoods, and builds resilience and prosperity in countries affected by conflict while safeguarding biodiversity. It enhances social cohesion and accountability through participatory and inclusive approaches that facilitate spaces for dialogue and reaching consensus towards a common objective. For example, the value chain approach creates income-generating opportunities and livelihood options, enable participation of all value chain stakeholders for informed and concerted decision-making at local, regional and national levels. This contributes to building peaceful societies, strengthening institutions and building enabling policy environments. In conflict-affected areas, UNCTAD together with international and local partners (e.g. UNDP, MADS, CAF, Fondo Biocomercio and CBS) have already developed environmentally and socially responsible initiatives based on economic empowerment and resilience.

BioTrade also fosters transparency and the regular flow of information and communication among all stakeholders involved. By generating conditions and mechanisms for a fair and equitable sharing of the benefits derived from the use of biodiversity, BioTrade creates individual and collective gains (e.g. community, company, business and local government). Individual and collective gains need to be captured fairly by all

stakeholders involved to avoid relapse to conflict. BioTrade Principle 3, for instance, contributes to a fair and equitable distribution of benefits and non-discriminatory participation in the value chain among all stakeholders, essential for peacebuilding.

All these issues are ingredients conducive to building trust and a sustainable long-term peace. Some of the positive results and lessons learned are shown in Box 9.

Enhancing livelihoods and economic opportunities for the beneficiaries requires the active collaboration of many actors and institutions (UNEP-UNDP, 2013). In the case of Indonesia, Forpala, the Nutmeg Cooperative and related government and non-government institutions, implemented the value chain strategy, covering cultivation, processing, marketing and trading. Particular efforts were made to engage enterprises in strengthening supply chains and linking local producers and farmers and markets (UNDP, 2012). Similarly, the experiences shown in Colombia, demonstrate how MADS jointly with the regional environmental authorities are developing local plans that support the development of green businesses, foster a coherent policy environment and build a network of service providers that satisfy the business needs.

Governance in hand with an enabling policy environment conducive of BioTrade business is fundamental for post-conflict BioTrade initiatives. BioTrade's positive contribution has already been recognized at the international level (e.g. *Operational Guide to the Integrated Disarmament, Demobilization and Reintegration Standards*, as well as several United Nations publications) and at the national level. For instance in Colombia, BioTrade is already acknowledged in several policies, strategies and studies such as the Colombian International Cooperation Roadmap 2015–2018 (APC, 2015), MADS National Green Business Plan, and a UNDP study (2014) for building a stable, peaceful and sustainable peace in Colombia. However, this recognition needs to be further implemented with pragmatic norms, guidelines, actions and funding to foster BioTrade post-conflict businesses and value chains.

The 2030 Agenda for Sustainable Development and associated SDGs emphasize the importance of promoting the three pillars of sustainable development in a harmonized and integrated

Box 9. Positive results and lessons to develop BioTrade in post-conflict settings

- Promotes territorial development in rural areas by developing unique products or services, value chains and sectors that are part of the culture, tradition and livelihoods of local communities. It also raises awareness of biodiversity as a critical livelihood resource for rural communities. This is illustrated, for example, with the nutmeg case in Indonesia.
- Enhances governance and institutional strengthening through a collaborative approach that increases the capacity of local and national government and civil society to drive entrepreneurship in favour of sustainable businesses based on biodiversity.
- Identifies and develops business opportunities in rural areas resulting in socially and environmentally responsible micro- and SMEs that are part of broader value chains. These new initiatives innovate and use the surrounding biodiversity generating a triple bottom line, and going beyond traditional agricultural crops and livestock.
- Increases the resilience and self-reliance of ex-combatants, returnees and host communities. A mixture of economic activities such as nature-based tourism, crafts and personal care products under BioTrade enhances the resilience of beneficiaries and their businesses.
- Fosters entrepreneurship under environmental, social and economic criteria through a joint and inter-institutional effort at local, national and international levels. All these actors collaborate to tackle the broad needs of the beneficiaries and build on lessons learned and success cases. Some examples of these needs relate to creating an enabling policy environment, a network of business support organizations, funding, adequate infrastructure, and access to markets.
- Demonstrates that the sustainable use of biodiversity is possible. It needs a collaborative effort combined with research and enhanced knowledge on biodiversity and its uses to define plans to conserve and manage it sustainably. Particularly in areas that where conserved due to security concerns, these alternative businesses may be more suitable to conserve its rich biodiversity.

manner. Peace (and inclusive societies), Planet (environmental sustainability), People (sustainable livelihoods), Prosperity, and Partnerships (established for instance through the value chain approach) are the cornerstones of this agenda. This provides a solid ground for implementing BioTrade and directly contributing to SDGs 1, 2, 3, 5, 8, 10, 12, 14, 15, 16 and 17. As illustrated with the Indonesia and Colombia experiences, BioTrade is already providing concrete examples that support the achievement of these SDGs.

6.2 BioTrade and peacebuilding and post-conflict recovery processes

BioTrade share similar goals with peace efforts in post-conflict settings, which facilitate the reintegration of ex-combatants and conflict-affected groups. It particularly contributes to the livelihood component by developing economic activities targeting these groups in a biodiversity-friendly manner. Thus BioTrade complements on-going peacebuilding and

post-conflict recovery efforts. The experience with the nutmeg value chain in Indonesia demonstrated how this complementary works. The development of this chain under BioTrade helped ensure that the conservation and management of biodiversity and trade of its products are supported as a pillar for sustainable, inclusive and peaceful development. The UNCTAD and UNDP collaboration supported the livelihoods of vulnerable populations that are recovering from the damaging impacts of armed conflict by sustainably using biodiversity and trading its derived products and services.

There are also similarities between BioTrade beneficiary organizations in post-conflict settings and those in other isolated non-conflict regions, for instance in terms of social, economic and environmental issues. They face similar challenges related to limited access to markets and finance, infrastructure, low value added products and services, and weak governance. For example, limited infrastructure isolates initiatives from commercial channels, which normally result in higher production costs, mismatch between market

demand and product's quality and quantity, low value addition and limited access to funding.

However, in conflict settings the level of development and the challenges faced might be higher. Micro businesses and SMEs encounter constraints that reduce their capacity to commercialize products, and access to raw materials and inputs from forests or other regions due to security concerns as well as infrastructure. Finding expertise in these areas (e.g. field agronomists) can also be a challenge as shown in the Colombian experience.

Developing joint BioTrade and post-conflict and reintegration programmes require expertise on a broad variety of issues that consider the specific circumstances of the area and its inhabitants. These issues include, for instance, their socio-economic and emotional wellbeing. It needs to work at macro, meso and micro levels strengthening institutional and local capacities and skills, and building a network of service providers that will satisfy the need of the beneficiaries beyond the duration of the project. Addressing the needs of these post-conflict BioTrade initiatives are broader and entailing assistance from multiple stakeholders with different backgrounds and expertise. Some of these needs relate to governance, business and association development, market access, conflict management, psychosocial and legal support, gender-based violence, social cohesion and awareness, and enhancing infrastructure, among others. For example, it may involve implementing conflict-sensitive approaches and providing effective services for ex-combatants and conflict-affected communities on psychosocial support, life skills development, gender-based and violence prevention (UNDP-UNCTAD, no date).

The timeframe needed to support the implementation of activities while enabling stakeholders to gain trust and achieve concerted efforts tends to be longer in post-conflict situations. It is fundamental to provide sufficient time for dialogue, sharing of ideas, expertise, and expectations, and building consensus. For instance, agreed criteria and roles and responsibilities need to be developed in a concerted manner and validated by all actors. In turn, this generates trust, accountability and working relationships among stakeholders. Combining BioTrade and post-conflict and recovery programmes, takes time and should be adequately planned and budgeted. Conceptualizing the initiatives supported under a market driven approach is essential, and as far as possible, create

a business culture with social and environmental principles from the outset. Beneficiaries involved should also contribute to the programme (in-kind and/or monetary), creating ownership and accountability.

Building realistic assessments and baseline can also help identify the challenges, opportunities and strengths that the beneficiaries and the value chain/sector have. Based on this information, technical assistance programmes can be developed, considering an adequate timeframe and budget. For building momentum and support to the actions undertaken, a mixture of short-term and long-term results helps to demonstrate the viability of the intervention. For instance, achieving short-term results motivates actors to continue being involved in the programme, while long-term results make the changes sustainable.

Developing and implementing exit strategies are also needed when implementing post-conflict BioTrade programmes. Premature exit of technical assistance without the maturity of the initiatives and the beneficiaries' empowerment can be detrimental to the achievement of long-term results. The lack or uncertainty of funding may compromise the ability to move past the pilot phase. This often leads to sporadic strategic leadership, lack of comprehensive strategies, duplication of efforts in some areas, waste of resources and efforts and eventually, failure to put in place conditions for long-term sustainable recovery. Where there is uncertainty about the continuity of project implementation due to financing constraints, the status of activities that have already been implemented may be beset by the question of sustainability. Building strong beneficiary organizations, enhancing support from the government and other relevant stakeholders, as well as foster the commitment, empowerment and self-reliance of beneficiaries should be sought throughout programme implementation.

Summary of the complementarities and differences between BioTrade and peacebuilding and post-conflict recovery initiatives are described in Table 2.

6.3 Building social cohesion and concerted efforts

In conflict settings, BioTrade programmes should not only target conflict-affected groups, but should aim to "leave no one behind". The programme must undertake actions to develop win-win initiatives where all stakeholders gain, both individually and collectively.

Issue	BioTrade	Peacebuilding and post-conflict recovery
Goals and objectives	<ul style="list-style-type: none"> • Use trade as an enabler that supports the conservation and sustainable use of biodiversity, promotes benefit sharing and develop sustainable livelihoods through policy and pragmatic support. • BioTrade Principles and Criteria assess and guide its interventions through economic, social, and environmental sustainability criteria. • Engages government, private sector, civil society, academia and international cooperation, among others, under a common objective to promote local sustainable development, build social cohesion and governance, and enable dialogue and collaboration. 	<ul style="list-style-type: none"> • Establishes sustainable reintegration options for ex-combatants, internally displaced people and conflict-affected community members. • Recognizes that when conflicts are fuelled by disputes over natural resources, relapse into conflict within five years is twice as likely. • It is usually sited in rural areas and is agriculturally based. • Addresses the role of natural resources in supporting livelihoods.
Complementarity	<ul style="list-style-type: none"> • BioTrade provides alternative legal livelihoods, particularly in rich-biodiversity areas and that are affected by conflict dynamics, complementing UNDP peacebuilding, conflict-sensitivity and reintegration programmes. UNCTAD and partners' technical expertise, methodologies and market connections, can enable the development of economic generation activities that are environmentally and socially friendly, minimizing the risk of biodiversity loss. • The Integrated Disarmament, Demobilization and Reintegration Standards (IDDRS) (United Nations, 2006), recognize BioTrade as an economic and social reintegration opportunity in natural resources management that can be implemented in disarmament, demobilization and reintegration programmes. (IAWG-DDR, 2014). Within Colombia, BioTrade has also been recognized in studies and programmes supported by the government and other national and international organizations. 	
Common challenges	<ul style="list-style-type: none"> • There are several challenges inherent in reintegration and post-conflict programmes, as well as in BioTrade. Combining both concepts can be a challenge. For example the actors supporting and working on post-conflict and BioTrade are not necessarily the same, nor have the same background and experience. Communication, transparency, collaborative and participatory approaches that involves all actors and adequate planning are fundamental. • Need to involve conflict-sensitive and inclusive programmes that address the specific needs of each target group, while generating win-win opportunities for the other value chain stakeholders and the communities in the programme area. • Create economically feasible initiatives that continue over time, despite the logistical, infrastructure and technical challenges faced due to remote locations. Programmes in conflict-affected settings may lack infrastructure, are remote and suffer limited cooperation and trust among public and private entities; producers tend to be isolated from commercial channels, governance is usually limited, and institutions may be weak. To visualize and obtain results under these circumstances, takes time, patience and resources, and project implementers need to manage beneficiaries' expectations in a realistic manner. • Achieve sustainability of the interventions, once the project is completed, is fundamental. It depends on the level of empowerment, ownership, commitment, trust and self-reliance of the actors involved. Throughout programme implementation, the implementers need to build strong beneficiary organizations, enhance support from the government and other stakeholders including funding organizations, and develop adequate exit strategies. Following the support from UNDP and UNCTAD, Forpala and the cooperative continued to receive technical assistance and support from USAID IFACS which upscaled the organization and maintained local government's attention and cooperation (Suhud, interview). • Create an entrepreneurship and innovation culture and self-resilient initiatives are essential elements for developing viable businesses. Otherwise, they will dependent on external funding and may not be economically feasible on their own. Reinvesting the gains to enhance the businesses should be encouraged from the start. Social funds in addition to rotation funds could also be used to address this issue and benefit other actors that are not directly linked to the business or value chains. • Monitor, assess and implement actions to guarantee an equitable benefit sharing and a smooth relationship and agreement between stakeholders to understand and collectively overcome problems considering their different levels of development. • Build trust and confidence among communities, governments, private sector and other stakeholders is a major challenge that post-conflict BioTrade initiatives have. From the start, a dedicated and neutral facilitator that works closely with communities and relevant stakeholders on a continuous basis can address it. Otherwise, continuity of the initiative may not be achieved. 	
Common opportunities	<ul style="list-style-type: none"> • The 2030 Agenda for Sustainable Development provides opportunities for developing BioTrade and peace related activities, from a broad range of areas: industry, consumers, cooperation agencies and national government. The recognition of BioTrade in Colombia, for example, opens opportunities for developing joint post-conflict and BioTrade programmes. • Identify and capture further opportunities to re-orient livelihoods along sustainable pathways in post-conflict recovery processes. On-going programmes in conflict-affected areas provide the potential to identify and implement best practices and lessons learned to rebuild livelihoods and sustain human security especially for those who rely on the natural resources, in particular, biodiversity. • Access to rural and marginal areas that were affected by conflict, open opportunities for developing sustainable livelihood options that support biodiversity conservation and sustainable use, while encouraging entrepreneurship and innovation based on native resources. • The positive market trends can support the development of specialized value chains that have cultural and environmental significance and market advantages. Though market linkages are essential and should be facilitated from the conceptualization of the programme. • Governments, particularly at the local level, are aiming to identify economic models that do not only contribute to reintegration, peacebuilding and livelihoods, but also to conserve and sustainable use natural resources. These initiatives could also capture the interest of the donors and industries keen to join efforts and build partnerships to enhance the value chains. 	

Source: Adapted from Jaramillo Castro and Stork, 2015 with inputs from Durleva, and Suhud interview.

This also goes in line with the aim to foster an equitable and fair sharing of benefits and avoid conflicts that may arise from individuals feeling left out.

The BioTrade framework and methodologies, particularly the value chain, promote inclusive societies by linking and coordinating actions and efforts between the different downstream and upstream stakeholders involved. It also helps to clarify the roles and responsibilities of each actor. As a bottom-up approach, it is built jointly to satisfy the needs of grassroots communities, industries, government and civil society that are interlinked and working together towards common and agreed goals. The value chain approach, as used under BioTrade, has proven essential for improving and maintaining social cohesion for local communities (Ruhanawati, 2012b). Spaces for dialogue, sharing of experiences and negotiations are created to promote cohesion and trust among community members, governments and industry, and to advance sustainable development peacefully.

Strengthening existing networks of local stakeholders including government, academia, NGOs and private sectors not only enhances governance, but also provides a space for dialogue and achieve concerted action. This is reinforced when a programme is developed based on the beneficiaries' cultural and traditional identity and practices, thus also enhancing the beneficiaries' resilience and ownership.

The creation of product forums (which are important at the regional and international levels), such as the nutmeg-based organizations (ForPala and the Nutmeg Cooperative), can bring public, private and civil society together, including marginalized groups. All involved actors agreed on the roles and responsibilities, and governance is enhanced. This is relevant for example, if a buyer places an order which is smaller than the group offer, and the group needs to decide who would have the right to fulfill the order first.

Cooperation, empowerment and enhancement of the skills and capacities of all stakeholders involved in the value chain, particularly communities, can also result in enhanced social cohesion and participation of marginal and minority groups. It improves the information flow among stakeholders, where communities can take informed decisions in developing BioTrade activities and participate fairly in the benefits generated. The horizontal and vertical integration of value chain actors also helps to build trust, capture economies of scale, diversify sourcing areas, products and risks, increase

quality and enhance value chain competitiveness. In some cases, it also develops territorial identity which enhances the cohesion of stakeholders in a region, and is a good base for building and maintaining peace.

6.4 Businesses, entrepreneurship and markets

BioTrade is enabling conflict-affected people to develop businesses and participate in local, national or international value chains while safeguarding their surrounding biodiversity. Entrepreneurship and demand-driven approaches are elements for successful initiatives which develop innovative and value-added products and services that fulfil market demands and requirements, while promoting equitable benefit-sharing schemes.

Building self-resilience and encouraging partners and beneficiaries co-funding (either in-kind or monetary) are important, including in post-conflict settings. Similarly, rotation funds, reinvestment of the profits and access to funding are fundamental for the growth of businesses. The resilience of beneficiaries and their businesses is enhanced, as well as the development of competitive business culture which reduces the dependence of external resources. Bringing in potential buyers or other downstream actors in the value chain can also help to channel investment for upstream actors such as producers, collectors, harvesters, hunters, etc.

Strengthening or developing business service providers' networks, to address the needs of post-conflict BioTrade initiatives should be encouraged. Similarly, these networks may develop and disseminate methodologies and best practices, and conduct capacity-building programmes according to the beneficiaries needs. In addition to technical assistance and capacity building actions, the beneficiaries need access to funding (e.g. credits, grants, investment) in order to enhance their businesses. This is illustrated by the work undertaken by Fond Biocomercio with PABE, and the Green and Sustainable Business Office/MADS.

As shown by the experiences in Colombia and Indonesia, innovation and entrepreneurship are essential in demonstrating that biodiversity can be a source of inspiration for building feasible economic businesses in post-conflict areas. Opportunities to learn from these types of initiatives, including from the leadership and perseverance demonstrated in the case studies, can motivate other actors to develop

new ventures that conserve and take advantage of their rich natural and cultural heritage.

Finally, it is essential to empower local organizations (government, beneficiaries, NGOs, academia, among others) to formulate, prioritize, implement and, where possible, co-finance the activities, in the initial stages in particular. Bottom-up, participatory and community-based approaches need to be fostered so stakeholders can identify their common needs and jointly decide on a path to overcome them as a group. Workplans or action plans could be formulated in a broad participatory manner involving all stakeholders. It starts with the joint definition of problems, causes and consequences, prioritize solutions, and monitor the implementation of activities in order to improve them. Prioritization of activities as a group by reaching consensus is important as well as to foster cooperation and synergies, and build on existing work and resources.

Consequently, guaranteeing the sustainability of the initiatives depends on strongly developing the empowerment, ownership and commitment of the stakeholders to work under a shared and common vision and goal. This has been demonstrated excellently by Forpala and the Nutmeg Cooperative in Indonesia: its stakeholders' sense of ownership, empowerment and commitment to achieve the common goal of developing economic and resilient livelihoods and ensure post-conflict recovery and peacebuilding is being achieved by strengthening the nutmeg value chain.

6.5 Combining expertise and building partnerships

The UNCTAD-UNDP partnership builds upon the

expertise of both organizations and provides an opportunity to enhance programmes supporting peace, recovery and sustainable development in developing countries affected by conflict, as well as in areas with high levels of biodiversity and potential for BioTrade development. In Indonesia, both agencies joined their expertise to carry out this work: UNCTAD on trade and BioTrade, and UNDP on peacebuilding and disarmament, demobilization and reintegration.

The UNCTAD and UNDP collaboration enhanced the livelihoods of conflict affected populations in post-conflict settings by generating income from the sustainable management of nutmeg. It brought together stakeholders towards reviving a culturally significant value chain, benefiting the target group and the community as a whole. It created conditions that facilitated collaboration, empowered and build an entrepreneurship culture among local stakeholders, from the government, to private sector, to communities-based organizations, academia and civil society. The UNCTAD-UNDP project finished over 5 years ago, and local stakeholders have continued working to promote the nutmeg value chain, involving new districts, developing new products, accessing markets and searching jointly to overcome challenges and capture economic opportunities.

Trade, and particularly BioTrade, can be an essential component and incentive for promoting sustainable development as well as inclusive and peaceful societies. The cases presented illustrate how biodiversity - which is normally conserved due to security concerns - can further provide economic alternatives and livelihoods for ex-combatants, returnees and other conflict affected groups in rural areas.

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Interviews and emails exchanges

- Maja Suhud, UNDP Indonesia, 23 and 24 November 2015.
- Véronique Rossow, PhytoTrade Africa, 12 November 2015.
- Diana Milena Pedroza Obando, CAFECAO COSMETICOS S.A.S, 10 and 11 November 2015.
- Jimena Durán and Santiago Molina, APC, 26 August 2015.
- Ana Karina Quintero, MADS, 24 August 2015 and 19 October 2017.
- Diana Mejía and José Antonio Gómez, CBS, 24 August 2015
- Adriana Lucía Arcos, CBS, 17 October and 15 November 2017.
- Olga Lucia García, Corporación Fondo Biocomercio Colombia, 18 August 2015.
- Sandra Hurtado, Corporación Fondo Biocomercio Colombia, 10 November 2017.
- Gustavo Urrea Piñeros, Corporación Fondo Biocomercio Colombia, 18 August 2015 and 17 October 2017.
- Siti Ruhanawati, 2 December 2015.
- Marisela Vega, BioTrade expert, 3–8 December 2015.

Notes

- 1 Mintel, 2016. Global Food and Drink Trends 2017. Mintel Group Ltd., London, 22 pp.
- 2 Grand View Research, Inc. 2016; <https://globenewswire.com/news-release/2016/07/18/856668/0/en/Dietary-Supplements-Market-Size-Is-Projected-To-Reach-278-02-Billion-By-2024-Demand-In-Food-Beverage-Sector-Grand-View-Research-Inc.html>, 2 November 2017.
- 3 New Hope Network & Sterling-Rice Group, 2015. Next Forecast 2016 - Natural & Organic Trends and Opportunities. Boulder, Colorado.
- 4 This refers to information of companies complying with UEFT standard, as well as those working with partners such as PhytoTrade Africa and the Andean BioTrade Programmes (Colombia, Ecuador and Peru).
- 5 This refers to the sale of companies complying with UEFT standard, as well as those working with partners such as PhytoTrade Africa and the Andean BioTrade Programmes (Colombia, Ecuador and Peru).
- 6 CITES Appendices I, II and III are "lists of species [of flora and fauna] afforded different levels or types of protection from over-exploitation" (CITES, 2015a). Appendix I includes species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances. Appendix II includes species not necessarily threatened with extinction, but in which trade must be controlled in order to avoid utilization incompatible with their survival. Appendix III contains species that are protected in at least one country, which has asked other CITES Parties for assistance in controlling the trade (CITES, 2015b).
- 7 Megadiverse countries are those countries that collectively account for 70 per cent of the world's biodiversity. These countries are: Australia, Brazil, China, Colombia, Democratic Republic of the Congo, Ecuador, India, Indonesia, Madagascar, Malaysia, Mexico, Papua New Guinea, Peru, Philippines, Plurinational State of Bolivia, South Africa, the United States and Bolivarian Republic of Venezuela. (Secretariat of the CBD, 2007; UNEP-WCMC, 2014).
- 8 Colombia Bio is a national strategic project that aims to foster the knowledge, conservation, management and sustainable use of biodiversity in Colombia. This is done through science, technology and innovation (Colciencias, 2017a.)
- 9 As the Colombian peace process advances, land reform issues have been discussed as part of the La Habana Peace Process in Colombia, between the Colombian President, H.E. Juan Manuel Santos, and the FARC. For instance, a fund will be developed to distribute land for free and rural property will be formalized. Additionally, both parties are also agreeing to eradicate and substitute illegal crops. Emphasis has also been put on rural development, where peace needs to be built by developing the local level and in line with the development needs defined by grassroots and the actors directly involved (bottom-up approach) (UNDP, 2015b; BBC, 2015b; Universidad de los Andes, 2015).
- 10 The six Agenda Items are: 1) Toward a New Colombian Countryside: Comprehensive Rural Reform, 2) Political participation: A democratic opportunity to build peace, 3) End of the conflict, 4) Solution to the problem of illicit drugs, 5) Agreement regarding the victims of the conflict, and 6) Implementation and verification mechanism. Source: Final Agreement to End the Armed Conflict and Build a Stable and Lasting Peace, 24 November 2016. Available at: <http://especiales.presidencia.gov.co/Documents/20170620-dejacion-armas/acuerdos/acuerdo-final-ingles.pdf>, accessed 6 November 2017.
- 11 This National Plan is the formal legal instrument that provides the strategic guidelines of public policy made by the Colombian President. Available at: www.dnp.gov.co/Plan-Nacional-de-Desarrollo/Paginas/Qu-es-el-PND.aspx#googtrans/gl/en, accessed 6 November 2017.
- 12 Plan Nacional de Desarrollo 2014-2018 (Tomo 1), Departamento Nacional de Planeación (DNP), 2015. Available at: <https://colaboracion.dnp.gov.co/CDT/PND/PND%202014-2018%20Tomo%201%20internet.pdf>, accessed 6 November 2017.
- 13 The National Green Business Plan provides policy guidance to regional environmental authorities to develop nature-based green and sustainable businesses under social, economic and environmental criteria. The categories covered under the Plan and supported by the Green and Sustainable Business Office/MADS are: (a) goods and services derived from natural resources (BioTrade, restoration businesses, and sustainable agro-systems); (b) industrial ecoproducts (sustainable construction, waste management, renewable energy and other goods and services), and (c) carbon market (voluntary and regulated markets) (Mira Ponton, 2016).
- 14 The Post-conflict Ministry prioritized 322 municipalities distributed in the following departments: Antioquia, Arauca, Bolívar, Boyacá, Caldas, Caquetá, Casanare, Cauca, Cesar, Chocó, Córdoba, Cundinamarca, Guaviare, Huila, La Guajira, Magdalena, Meta, Nariño, Norte de Santander, Putumayo, Risaralda, Santander, Sucre, Tolima, Valle del Cauca, Vaupes, Vichada. Available at: www.indepaz.org.co/wp-content/uploads/2017/02/Anexo_2_Municipios_Priorizados_Posconflicto.pdf, 6 November 2017.
- 15 Fondo Biocomercio is a not-for-profit entity that aims to support the CBD objectives through the formulation, coordination and management of programmes that strengthen BioTrade and green markets strategies in Colombia, which generate social impact under environmental, social and economic sustainability criteria. For further information, visit: <http://www.biocomerciocolombia.com>.

- 16 These figures do not include participants that benefited from capacity-building activities, for instance on the policy frameworks relevant to BioTrade, on implementing BioTrade Principles and Criteria, on the access and equitable sharing of benefits, as well as a workshop to enhance and update norms related to BioTrade (Chaux et al, 2014).
 - 17 In Spanish is called: Unidad de Gestión de Crecimiento Empresarial del Gobierno Nacional.
 - 18 The CAF's Latin American Cocoa Initiative involves Brazil, Colombia, Costa Rica, Ecuador, Mexico, Panama, Peru, Plurinational State of Bolivia and Dominican Republic. (CAF, 2017b).
 - 19 The initiative CAFECAO is part of the cocoa and coffee initiatives. It works with cocoa (personal care products derived from cocoa), and coffee (green coffee line as well as personal care products derived from coffee) (Hurtado interview).
 - 20 The selected cocoa initiatives were: INTEGRASINÚ (Fundación para el Desarrollo Alternativo Sostenible e Integral del Alto Sinú), COOMPROCAR (Cooperativa Multiactiva de Producción y Comercialización Agropecuaria de Arauquita), COPROCAGUAMUEZ (Comité de Productores de Cacao una nueva alternativa para el municipio Valle del Guamuez), ASPROCAMM (Asociación de Productores de Cacao de los Montes de María), APOMD (Asociación de Productores Orgánicos del Municipio de Dibulla), and ASPROAGROGAR (Asociación de Productores Orgánico Agropecuario de la vereda Cuba-Putumayo) (Hurtado Interview).
 - 21 The selected coffee associations were: Asociación Agropecuaria del Municipio de Albán (AAA), Asociación de Mujeres Productoras de la Serranía del Perijá-Asmuperija, and Asociación de Caficultores Gramalote (Hurtado Interview).
 - 22 A contest to identify the best cocoa produced in Colombia. Further information at: <http://cacaodeoro.org.co/>
 - 23 Section based on the interview with and information provided by Diana Milena Pedroza Obando, CAFECAO COSMETICOS S.A.S, and La Nación - Editora Surcolombiana, 15 February 2015.
 - 24 CAFECAO benefits 249 families producing cocoa and bee products, with an average of four individuals per family.
 - 25 Neiva is part of the 186 municipalities prioritized by the United Nations for post-conflict efforts in its 2015 Strategy (Equipo Humanitario Pais Colombia, 2014, 2015 Strategic Response Plan Colombia).
 - 26 Section based on the interview with and information provided by Adriana Lucía Arcos, CBS, 17 October 2017.
 - 27 CBS is a non-profit NGO that promotes the use and conservation of biodiversity through BioTrade, as an alternative to achieve sustainable development. For further information, see: www.biocomerciosostenible.org
 - 28 Section based on Burgos et al, 2014.
 - 29 ISAGEN E.S.P is a mixed company that generates and sells energy in Colombia. For further information, see: www.isagen.com.co.
 - 30 The 12 criteria - which also includes the BioTrade Principles and Criteria - guarantee that businesses working with renewable natural resources respect the environment, are economically viable and aim for social interest. The criteria relates to: 1) economic feasibility of the company; 2) positive environmental impact of the product or service; 3) life cycle approach of the product or service; 4) useful life; 5) replacement of dangerous substances or materials; 6) recyclability of the materials and/or use of recycled materials; 7) efficient and sustainable use of the resources to produce the product or service; 8) social responsibility within the company; 9) social and environmental responsibility throughout the company's supply chain; 10) social and environmental responsibility, outside of the company; 11) communication of the social and environmental characteristics of the product or service; and 12) environmental or social schemes, programmes or recognition implemented or received.
 - 31 This section was prepared by Lorena Jaramillo Castro and Maria Durleva with inputs from Maja Suhud, UNDP Indonesia and Siti Ruhanawati (Indonesia). Information was also extracted from several UNDP and UNCTAD reports, including Trinurini-Adhi and Wuriati, 2012; Final report June 2010 – December 2011 (UNDP, 2012), Ruhanawati, 2012a and the Forpala website (www.forpala.org). It is also based on the field experience of UNCTAD (Lorena Jaramillo Castro) during project implementation from 2009–2012.
 - 32 Details the agreement and commitment of the Government of Indonesia and the GAM to rebuild itself after the 2004 tsunami disaster and to terminate the conflict between the parties for a "peaceful, comprehensive and sustainable solution to the conflict in Aceh with dignity for all" (Large and Large, 2008).
 - 33 The Leuser Ecosystem is an area of forest located in the provinces of Aceh and North Sumatra on the island of Sumatra, Indonesia. Covering more than 2.6 million hectares, it is one of the richest expanses of tropical rain forest in Southeast Asia and is the last place on earth where Sumatran elephant, Sumatran rhinoceros, Sumatran tiger and Sumatran orangutan are found within one area (https://en.wikipedia.org/wiki/Leuser_Ecosystem accessed 23 December 2015).
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