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Faculty of Legal Sciences.

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Analysis of BioTrade as an alternative business model. Historical evolution and its possible application in Ecuador.

Graduation work prior to obtaining a bachelor's degree in International Studies with a bilingual mention in Foreign Trade.

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## **DEDICATION**

I dedicate the following degree work to all my loved ones, especially my parents and sisters, who have always given me their unconditional support and affection. Their advice, love and teachings have led me to be who I am today.

## **GRATITUDE**

I thank God for guiding me throughout my college journey and above all for blessing me with such a great family. Their advice and support have allowed me to reach all the goals that I have set for myself to date and have helped me overcome any adversity. In addition, I thank all my friends and colleagues, who I had the pleasure to meet and who have made this process an unforgettable experience and from whom I will carry good memories and learnings forever.

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## **ABSTRACT**

This degree work proposes the analysis of BioTrade, a business model based on the collection, production, transformation and commercialization of goods and services derived from native biodiversity under criteria of environmental, social, and economic sustainability (United Nations Conference on Trade and Development, 2018) as an alternative business model for internationalization within Ecuador. In order to determine the feasibility of its application, recognizing the fact that the country is within a select group considered as "megadiverse", which means that the conditions are ideal for its promotion and subsequent application. To achieve this objective, a framework analysis is first carried out corresponding to the theory related to the subject; followed by an analysis of the evolution of BioTrade within the country; up to the analysis of specific cases of local companies that have adopted a BioTrade model for their internationalization. Finally, a comparative analysis is carried out about the situation in which Ecuador finds itself with respect to others in terms of BioTrade, taking Peru and Colombia, which are neighboring countries rich in biodiversity as well.

## **RESUMEN**

El presente trabajo de titulación propone el análisis del biocomercio, un modelo de negocio basado en la recolección, producción, transformación y comercialización de bienes y servicios derivados de la biodiversidad nativa bajo criterios de sostenibilidad ambiental, social y económica (Conferencia de las Naciones Unidas sobre Comercio y Desarrollo, 2018), como modelo de negocio alternativo para la internacionalización dentro de Ecuador. Esto con el fin de determinar la factibilidad de su aplicación, reconociendo el hecho de que el país se encuentra dentro de un selecto grupo considerados como "megadiversos", lo cual significa que las condiciones son ideales para su promoción y subsecuente aplicación. Para lograr dicho objetivo, primero se lleva a cabo un análisis del marco teórico correspondiente del tema; seguido de un análisis de la evolución del biocomercio dentro del país; hasta llegar al análisis de casos concretos de empresas locales que han adoptado un modelo de biocomercio para su internacionalización. Finalmente, se realiza un análisis comparativo acerca de la situación en la cual se encuentra Ecuador con respecto a otros en materia de biocomercio, tomando a Perú y Colombia, quienes son países vecinos y ricos en biodiversidad, para dicha comparación.

## INTRODUCTION

Today the world is at a crossroads. On the one hand, humanity and society have evolved at an accelerated rate never seen before. Unparalleled advances in all areas, from health, to technology, industry, and others, have been achieved thanks to the level of development accomplished by humanity. However, at the same time and as a consequence of this development, human beings have been responsible for the vast destruction and erosion of the environment. Proof of this is that in the last fifty years the world has lost just over half of its biodiversity (Ecoosfera, 2020). And all due to the overexploitation of natural resources by human beings, who, in quest to maximize its benefits, in most cases for economic interests, have brought planet Earth to the brink of collapse.

Given this, various initiatives by organizations both regionally and internationally have emerged in order to find alternatives that generate change, and thereby find solutions to the current environmental emergency that humanity suffers. Numerous scientific information has corroborated this, and this is how new development and growth proposals, different from those commonly established, have been raised. Different notions have emerged from this, such as “BioTrade”, which will be the central object of this degree work.

Caring for the environment is a focal point not only on a social level, but also within the scope of international business. Aspects such as ensuring sustainable development and being a socially responsible company towards the community and the environment in which they operate have become more relevant. Therefore, the analysis and determination of new alternative business models for internationalization, which seek not only the generation of capital, but also the optimal care and conservation of the environment for present and future generations is fundamental. From this, BioTrade as an alternative international business model acquires relevance. In this work, an analysis of BioTrade as an alternative business model for internationalization will be carried out, taking Ecuador as a case study. This analysis is intended to determine if BioTrade has the potential to be successfully promoted and applied within the country, determining in turn possible challenges and limitations that it entails.



## **CHAPTER 1: Analysis of the theoretical framework of BioTrade.**

### **1.1 Introduction.**

As has been mentioned, humanity is currently in the midst of an environmental emergency that must be addressed urgently. All due to the overexploitation of biodiversity and its resources by human beings themselves in the "pro" of development and mainly focused on economic growth. However, today caring for the environment is a focal point not only at the social level, but also within the scope of international business. Aspects such as ensuring sustainable development and being a socially responsible company have acquired greater relevance. Therefore, the analysis and determination of new alternative business models, which seek not only the generation of capital, but also the optimal care and conservation of the environment for present and future generations is fundamental. From this, BioTrade as an alternative international business model acquires relevance.

The purpose of this chapter is to analyze what BioTrade consists of as an alternative international business model. Examining what it is, how this notion arose, supported by which actors, what are the main principles that it promulgates, and what is its relationship with other notions of vital importance.

This chapter will determine why the search and promotion of an international business model different from those commonly established is important, as it goes hand in hand with the imperative need to ensure the optimal state of the environment to achieve the well-being of the human being himself., establishing how the notion of BioTrade has emerged, and how it has been introduced to the international arena, mentioning the actors involved in its promotion.

Additionally, it examines the principles and criteria that must be considered if you want to adopt a BioTrade model, and in doing so, certain similarities with traditional business models are determined, since in the vast majority it is necessary to use natural resources from biodiversity for their activities; However, the environmental and social criteria that differentiate BioTrade from other business models stand out.



Finally, certain notions such as "sustainable development" and "biodiversity" are analyzed and their relationship with BioTrade is established.

## **1.2 Generalities / Concept of BioTrade.**

BioTrade refers to the collection, production, processing and commercialization of goods and services derived from native biodiversity (species and ecosystems) in accordance with environmental, social, and economic sustainability standards (United Nations Conference on Trade and Development, 2018).

The key to the BioTrade model is that the sustainable use of native plants, animals and microorganisms is encouraged, and that such use benefits the local communities that use them, while they ensure that they protect and maintain populations of species that are detrimental to them, otherwise, they could be in danger or near extinction. The common BioTrade model makes sense for companies, producers and collectors dealing with products derived from native biodiversity, but functioning BioTrade value chains can only exist and develop in specific circumstances. For example, the collection of wild products must be managed to avoid overexploitation, certification services are needed in various fields, export promotion is required to introduce new exotic products in high-end markets, among others. (Wilson, 2017).

In this context, biodiversity and derived natural resources acquire strategic importance for countries, especially those in development, as they are a source of raw materials, and at the same time help to maintain the balance of ecosystems through the various ecosystem services that provide. However, the massive loss of biodiversity, constant damage to the environment, and climate change caused by overexploitation of human beings continues to rise. That is why the search and promotion of an alternative business and development model to the commonly extractive one that is practiced by the vast majority of countries is essential. And that is how, in response to this imperative need, BioTrade arises as an alternative business model for internationalization, which will be further analyzed down below.

### **1.3 History / Origin of BioTrade.**

The idea of a business model such as BioTrade had its origins in the 1992 United Nations Conference on Trade and Development (UNCTAD), within which the Convention on Biological Diversity (CBD) was signed. The main objective of this agreement was to ensure the conservation and sustainability of biological diversity, as well as the fair and equitable distribution of its benefits (Quesada, 2017). This is how, from this, already in 1996, the "BioTrade Initiative of the United Nations Conference on Trade and Development" officially emerged, which basically seeks to promote trade and investment in products and services derived from biodiversity.

This initiative is part of the UNCTAD program that supports sustainable development through trade and investment in biological resources. Its objective is to achieve the concept of sustainable use of biodiversity and ensure its conservation, while seeking to contribute to the development aspirations of local communities in areas rich in biodiversity in developing countries (UNCTAD, 2005). Since its inception, UNCTAD's BioTrade initiative has established alliances with a large number of national and regional organizations to develop BioTrade programs focused primarily on the African, Asian, and Latin American continents. Similarly, it has worked in Europe to facilitate the entry of such products from biodiversity by developing countries (UNCTAD, 2014). It should be noted that the reason that the vast majority of BioTrade-based ventures are from these so-called "developing" countries is due to the fact that these are commonly the ones who have a high degree of biodiversity and biological resources at their disposal. Which means that the conditions are ideal for the promotion and adoption of a business model such as BioTrade.

The initiative and its partners have focused efforts on trade in biodiversity-based goods and services specifically in certain sectors, such as:

- Fishery products.
- Flowers and foliage.
- Crafts: furniture, decorative objects, jewelry, clothing.
- Natural ingredients and cosmetic products - essential oils, natural dyes, soaps, creams, butters, skin moisturizers.

- Ingredients and natural products for food: fruits, cereals, grains, tubers, nuts, cocoa, fish products, jams, sweets and snacks, jellies, pulps and juices, spices and sauces, teas and infusions, food supplements.
- Natural ingredients and pharmaceutical products: extracts and infusions of medicinal plants, natural medicine capsules.
- Sustainable tourism: ecotourism, based on nature, bird watching.
- Wildlife for trade, for example: frogs, snakes, turtles, etc. (UNCTAD, 2014).

Within the evolution of the UNCTAD BioTrade Initiative, a set of Principles and Criteria (P&C) have been defined. This process had its beginnings in 1999 when the first national programs began to be formulated. Said national programs within the BioTrade framework are formulated and executed in conjunction with internal strategic actors in each country. Regarding the regional programs organized in the following years, the main objective has been to exchange experiences and knowledge, overcome common limitations and promote a conducive regional environment (UNCTAD, 2007). At the international level, the BioTrade Promotion Program was launched in 2003 as part of this initiative to promote sustainable trade in products and services based on biodiversity. The objective is to promote the production of products and services with added value derived from biodiversity for both national and international markets.

Basically since 1996, more than twenty developing countries located throughout the continents of Africa, Asia and Latin America have been implementing the initiative. As can be determined above, the products and services marketed by the beneficiary countries basically come from sectors such as personal care products, food, pharmaceuticals, fashion, ornamental flora and fauna, handicrafts, textiles, and natural fibers and sustainable tourism (UNCTAD, 2017). Additionally, according to data from UNCTAD, by 2016 the revenue of BioTrade beneficiary organizations that collaborate with small and medium-sized enterprises (SMEs) and multinational companies, rose to 4.5 billion dollars; BioTrade activities have generated benefits for more than 5 million farmers, gatherers, breeders, hunters and producers, creating jobs and generating additional income opportunities for rural and marginalized communities, as well as other actors in the value chain; and the beneficiary organizations of the BioTrade Initiative sustainably work more than 19 million hectares of land, promoting the conservation and

sustainable use of biodiversity (UNCTAD, 2017). These are some of the benefits that the BioTrade Initiative has generally generated over the years in their respective projects around the already mention continents.

#### **1.4 Principles of BioTrade.**

As mentioned previously, in the years following the creation of the BioTrade Initiative by UNCTAD in 1996, a set of BioTrade Principles and Criteria (P&C) were established through a joint effort by UNCTAD itself with national and international partners. These BioTrade P&C are closely related to the purposes of various conventions. Some to a greater and lesser extent, respectively. For example, they respond to three objectives of the Convention on Biological Diversity (CBD), the work of the Commission on Sustainable Development (CSD), the Millennium Development Goals (MDGs) and subsequently the Sustainable Development Goals (SDGs), the work of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the work of the Ramsar Convention on Wetlands (Ramsar).

The process for the determination of such Principles and Criteria began in 1999, and by 2004 the definitive ones were established. In the following section, an analysis of the Principles and Criteria adopted by the UNCTAD BioTrade Initiative will be presented (UNCTAD, 2007):

##### **Principle 1: Conservation of biodiversity.**

This principle goes hand in hand with the first objective of the Convention on Biological Diversity (CBD), which seeks that organizations, companies and other actors that carry out activities based on BioTrade ensure the care and maintenance of biological diversity (genes, species, ecosystems) (UNCTAD, 2007). And for this, it is necessary to take into account four criteria:

**Criterion 1.1 Maintenance of the characteristics of the ecosystems and natural habitats of the exploited species:** organizations, companies and other interested parties must maintain the ecological conditions of the ecosystem in which the resources they use

exist and must not participate in activities that threaten the conservation of these species (UNCTAD, 2007).

**Criterion 1.2 Maintenance of genetic variability of flora, fauna, and microorganisms (for use and conservation):** genetic variability is an important factor in ensuring the conservation of biodiversity and must be protected or managed in a way that prevents mutation and presents a risk of loss (UNCTAD, 2007).

**Criterion 1.3 Maintenance of ecological processes:** refers to the maintenance of the quality of air, water, soil, the ecosystem functions of biomes, the regulation of water flows and local microclimates and intra and interspecific interactions that may affect the productivity of species (UNCTAD, 2007).

**Criterion 1.4 The activities must be framed in management plans, whether in protected areas or not, in coordination with the competent authorities and stakeholders:** for the practices developed by the organizations to facilitate this, there must be coherence with existing conservation and management plans in the areas where production activities are carried out (UNCTAD, 2007).

In other words, it can be determined that the first principle seeks the optimal and complete maintenance of the environment in which the organization, company and other actors will operate, since in order for their presence to be possible, they must ensure that their activities do not cause irreversible damage to biodiversity, and in doing so, it is important that they commit to taking steps to remedy such damage, compensate those potentially affected, and ideally prevent it from happening again in the future.

### **Principle 2: Sustainable use of biodiversity.**

This principle supports the end of the second objective of the Convention on Biological Diversity. It is intended that the products generated from the BioTrade model are under systems that ensure the sustainability of the resources used and the ecosystem involved. Thus, avoiding

that the use of a species or ecosystem does not exceed its capacity for regeneration and / or productivity (UNCTAD, 2007).

**Criterion 2.1 Biodiversity utilization should be based on a sustainable management document, including elements such as a harvest rate lower than the regeneration rate, monitoring systems (population status), and yield indices:** it is important to have management documentation that defines the underlying processes, identifies the activities necessary to ensure the sustainable use of biological resources and facilitates the monitoring of biological resources, the activities carried out and their effectiveness (UNCTAD, 2007).

**Criterion 2.2 The use of agrobiodiversity should include agricultural practices that contribute to the conservation of biodiversity:** Agricultural practices must ensure that the basic conditions that sustain long-term agricultural production are maintained without jeopardizing biodiversity. On the contrary, that instead it favors their recovery (UNCTAD, 2007).

**Criterion 2.3 Compliance with technical standards for the development of environmental services initiatives:** the provision of environmental services such as ecotourism, water regulation and climate change mitigation must be carried out in accordance with the technical standards defined in each region, in accordance with the applicable national or international standards (norms) (example, water resources, climate change, etc.) (UNCTAD, 2007).

**Criterion 2.4 Generation of information and documentation of the organization's experiences as a contribution to knowledge about biodiversity:** the experiences of organizations, companies and other actors on projects that involve biodiversity management are valuable when developing and sharing knowledge about management systems and instruments. By documenting this information, it contributes to validate and further disseminate this type of knowledge (UNCTAD, 2007).

In other words, the second principle establishes that organizations, companies, and other actors involved in a BioTrade model can access resources derived from biodiversity and make use of them; however, such use must respect the regeneration cycles of each resource to avoid its possible depletion. Additionally, reference is made to the implementation of agricultural practices that ensure the care of biodiversity. This is a clear allusion to the implementation of "Good Agricultural Practices", which are a set of principles, standards and technical recommendations aimed at ensuring the sustainable use of basic natural resources for the production of safe and healthy food and non-food agricultural products, while ensuring economic, social, and environmental sustainability. Concepts that are closely related to what BioTrade promulgates. Finally, an extremely important aspect is the creation of documents that reflect the experiences of those who carry out a BioTrade model, as this is how more and more documentation is generated on the subject and serves as a guide for future cases.

**Principle 3: Fair and equitable distribution of benefits derived from the use of biodiversity.**

This principle supports the third objective of the Convention on Biological Diversity and addresses access and benefit-sharing in the context of genetic resources by requiring, for example, prior informed consent and terms agreed jointly between the parties. When BioTrade activities involve the commercialization of genetic resources, this principle supports these objectives and requirements. However, equitable sharing of benefits is also relevant in the context of other objectives and principles of the Convention, such as sustainable use and recognition of traditional knowledge. Therefore, this principle promotes the distribution of benefits in activities related to biological resources such as BioTrade (UNCTAD, 2007).

**Criterion 3.1 Interaction and inclusion in the framework of BioTrade activities of as many actors as possible of the value chain:** the organization's interaction with other actors involved in production and commercialization generates transparency and trust, which facilitates the negotiation and implementation of commercial agreements. A prerequisite for the fair distribution of benefits is that those involved in the value chain are informed and aware of the key aspects of production and marketing eventually to correctly assess their contribution in creating value (UNCTAD, 2007).

**Criterion 3.2 The generation of value must take place throughout the chain, under conditions of transparency, thus contributing all the actors to the positioning of value-added products in the markets:** the precondition for the equitable distribution of benefits is that there must clearly be a generation of value and income, without which the economic actors of bio-enterprises do not have the material bases of the same benefits. For this reason, the actors involved should be encouraged to put their traditional knowledge into practice in order to add greater value to all goods / services (UNCTAD, 2007).

**Criterion 3.3 Information and knowledge of the markets:** BioTrade organizations promote greater interaction between communities and other economic agents and markets and the opportunities they offer, thus seeking to maximize the objective conditions to enter these markets (UNCTAD, 2007).

In other words, the third principle seeks that all the actors involved in the BioTrade model benefit in a fair way in accordance with the level of contribution they have in the process of preparing the good or service. Similarly, an important aspect is that all those actors involved along the value chain have greater interaction with each other, especially with respect to local communities who, within the BioTrade model, play an important role by contributing their traditional knowledge, and therefore, they must be involved. This encourages transparency, and thus ensuring that the desired distribution of benefits can be carried out.

**Principle 4: Socio-economic sustainability (management, production, financial and market).**

Competitiveness within the BioTrade field should result in that by sustainably managing the products, they manage to position themselves in a particular market and generate the expected income (UNCTAD, 2007).

**Criterion 4.1 Existence of market potential:** to ensure sustainability, BioTrade products must have commercial potential. In other words, these products or services require a specific market. The specific needs to be satisfied related to the product or service



(marketing) must be considered and identified through marketing tools, information, strategic alliances, and advertising (UNCTAD, 2007).

**Criterion 4.2 Financial profitability:** BioTrade organizations must have long-term financial viability proportionate with their activities and characteristics (UNCTAD, 2007).

**Criterion 4.3 Generation of employment and improvement of quality of life:** local development is part of the added value offered by a BioTrade organization - the generation of work and the improvement of the quality of life of local communities that provide natural resources and knowledge is therefore of great relevance. The ways in which companies have the possibility of contributing to the improvement of these conditions include the implementation of tools that allow companies to increase their capacity, improve their business practices and thus add the greatest possible contribution to the value chain (UNCTAD, 2007).

**Criterion 4.4 Prevention of eventual negative impacts on local productive and cultural practices that may, for example, affect diversification and food security:** it should be considered that the development of commercial activities that involve the use of natural resources can modify the practices of producers and the dynamics of the local market, in such a way that traditional productive practices, the availability and costs of basic products are affected, and the food stability of local populations is damaged. In addition, it is essential that companies recognize the efforts of the society responsible or involved in the conservation and sustainable use of the resources they use. The benefits derived from BioTrade activities must therefore be shared in such a way that they compensate the community and contribute to the protection of the resource (UNCTAD, 2007).

**Criterion 4.5 Organizational and management capacity:** to ensure the generation of the expected benefits and the implementation of the BioTrade Principles and Criteria, the organization should have an organizational structure that allows coordinating its

activities, always according to its particular characteristics, as well as a strategy that establishes and demonstrates a high long-term financial sustainability potential (UNCTAD, 2007).

Basically, the fourth principle refers to the commercial sphere within the BioTrade model. Like any business, whether of a traditional model or not, the organization or company that carries out activities derived from biodiversity must have an established organizational structure to optimally carry out its activities, since its economic stability will depend on it, even more so when seeking the internationalization of its goods or services. It should be noted that, in relation to this last point, within the BioTrade model one of the objectives in the vast majority of cases is to internationalize said products derived from biodiversity, since thanks to their high added value they are ideal for this. However, for this it is essential to study the markets and potential consumer trends, determining what they are, how to plan to enter them, and above all seeking to stay in them in the long term. In this way, it is possible to comply with criterion 4.3 regarding the generation of employment and improvement of the quality of life, because by reaching a level of stability at the organizational and commercial level, the organization or companies involved in the BioTrade model will be able to generate more benefits for the actors involved such as the members of the local communities from where the collection, production, transformation and commercialization of goods and services derived from biodiversity take place.

**Principle 5: Compliance with legislation.**

Compliance with all relevant legislation and regulations is essential for the legitimacy of organizations and the access of their products to the markets (UNCTAD, 2007). It should be noted that there are two levels of execution of this principle:

- **The international scope**, conventions and agreements are mostly a guide to principles and good practices that organizations should observe and apply. Not necessarily binding.
- **The regional and national level**, there is a widely developed regulation that should be enforced on a mandatory basis.

**Criterion 5.1 Knowledge and compliance with applicable national and local legislation for the use of biodiversity and the trade of its derived products and services (wildlife management, labor, phytosanitary, commercial legislation, environmental impact study, etc.):** all national regulations that are applicable to BioTrade projects should be followed as precisely as possible, including labor regulations (UNCTAD, 2007).

**Criterion 5.2 Knowledge of and compliance with applicable international legislation for the use of biodiversity and the trade of its derived products and services:** this includes the Convention on Biological Diversity, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the conventions of the International Labor Organization, the rules of the World Trade Organization, of the Andean Community, among other (UNCTAD, 2007).

In other words, the fifth principle basically establishes that, when carrying out activities based on the use of biodiversity and its resources, it is necessary to know and respect the limits established by law, both nationally and internationally, for such use. Taking into account commercial and labor legislation in the same way, because at the end of the day it is about carrying out a commercial activity.

**Principle 6: Respect for the rights of the actors involved in BioTrade.**

The generation of well-being within the social sphere is one of the pillars of sustainable development and therefore of BioTrade. For this reason, respect for the rights of the actors who in one way or another interact with the organization is fundamental in the management of the organization (UNCTAD, 2007).

**Criterion 6.1 Respect for human, generational and gender rights:** human rights are vital for the work of all those involved in the sustainable trade of biological diversity products, for this reason they should be duly recognized and respected (UNCTAD, 2007).

**Criterion 6.2 Respect for intellectual property rights:** intellectual property rights, as well as the contribution of traditional knowledge to the development and commercialization of the products protected by such rights, should be recognized and respected. If traditional knowledge is important for the development and sale of products, companies should recognize such contribution through joint ownership of intellectual property rights and / or the sharing of royalties derived from such activity.

**Criterion 6.3 Respect for the rights of local communities and indigenous peoples (territory, culture, knowledge, practices):** local communities and indigenous peoples are, in most cases, essential actors in the production / commercialization of products derived from biodiversity. To ensure sustainable trade, the rights of these groups should be respected, as well as the impacts of the production system on their communities and environment should be taken into account (UNCTAD, 2007).

**Criterion 6.4 Maintenance and recovery of traditional knowledge and practices:** as has already been widely mentioned, traditional knowledge regarding the conservation and sustainable use of biological resources is a fundamental element within BioTrade. Furthermore, even when there is no direct contribution of traditional knowledge to the value chain, BioTrade organizations should structure their activities in such a way that they do not negatively affect traditional practices, but rather contribute to their appreciation and conservation (UNCTAD, 2007).

**Criterion 6.5 Occupational safety and adequate working conditions:** beyond standardized labor standards, BioTrade organizations should comply with practices that guarantee occupational safety and that offer adequate working conditions for the actors involved (UNCTAD, 2007).

It is possible to determine that the sixth principle is related to the third of “Fair and equitable distribution of benefits derived from the use of biodiversity”, as it refers to the respect that must exist with respect to the rights of all the actors directly or indirectly involved in the elaboration of the good or service derived from biodiversity, with an emphasis on local communities as they

are the ones who often contribute their traditional knowledge or are in charge of protecting the natural resources used. Therefore, BioTrade organizations or companies must ensure their well-being when carrying out their work, protect their environment, and fairly reward that contribution from the communities.

**Principle 7: Clarity about land tenure, use and access to natural resources and knowledge.**

Being clear about your rights is essential for the responsible management of an organization. Only in this way will the organization be able to make the necessary long-term investments and implement the management measures related to ensuring sustainability. At the same time, this clarity allows to establish the responsibilities of each actor in the management of the species (UNCTAD, 2007).

**Criterion 7.1 Land tenure in accordance with the corresponding regulations:** the organization demonstrates the right to use the land and resources, also taking into account principle six. The organization should not threaten the existing rights of local communities. In cases where there are conflicts over the use of land, for example, in the case where traditional rights are in contradiction with legal rights, the organization must have mechanisms to solve said conflicts successfully for each of the parties (UNCTAD, 2007).

**Criterion 7.2 Access to biological and genetic resources for their sustainable use with prior informed consent and based on mutually agreed conditions:** the Convention on Biological Diversity establishes that the access and sharing of benefits involved in genetic resources occurs with prior consent. In such cases, the consent of each of the relevant national authorities of the provider country must be obtained (UNCTAD, 2007).

**Criterion 7.3 Access to traditional knowledge is done with prior informed consent:** In the event that traditional knowledge is used, the organization must adhere to the methods established in the regulations in such a way as to recognize the rights of the stakeholders who possess such knowledge, such as local and indigenous communities.

Traditional knowledge can be taken into account as a resource that could be used, and as such it must be valued and adequately rewarded (UNCTAD, 2007).

As mentioned at the beginning of the seventh principle, this relates to principle number six as it refers to the rights that must be respected regarding to the proper land tenure and access to biological resources for their use, as well as what refers to traditional knowledge. To use each of the resources from biodiversity, it is necessary to have the proper authorizations from the legitimate owners, as well as to grant them due compensation.

After examining each of the BioTrade Principles and Criteria, it is possible to observe certain similarities with traditional business models. However, the key point that differentiates them is precisely that in a BioTrade model great emphasis is placed on the generation of social and environmental well-being, not focusing solely on the commercial and economic. Similarly, throughout the Principles and Criteria, notions are mentioned that are of utmost importance for this type of business model for internationalization, such as “sustainable development” and “biodiversity”. Both of which will be discussed below.

### **1.5 Relationship between BioTrade and the notion of sustainable development.**

When talking about BioTrade, one notion that goes hand in hand with this business model is that of “sustainable development”. But what does it refer to and why is it related to BioTrade? To determine this relationship, it is necessary to carry out an analysis of how this notion arose and what problem it seeks to solve.

The concept of sustainable development had its origins in the late 1960s. Specifically in 1968 with the Club of Rome, which was a non-governmental organization made up of academics, businessmen and politicians whose main priority was to study the changes that the environment was undergoing from the unrestrained extractivist development model that was being carried out, which in turn caused significant impacts on world society. With this, it was intended to investigate and encourage the implementation of methods to counteract the negative effects of environmental changes and sensitize politicians about the magnitude of the global environmental crisis (Castillo, Benítez, & Pereira, 2017).

Based on this, in 1971 academics from various countries met in Founex, Switzerland to discuss and write a document on issues such as development and environmental protection, since the early 1970s the concern of several countries around the environmental impacts generated by the hand of man was increasing. This document would serve as the basis for what in 1972 would be the first Conference on the Environment and Man by the United Nations, or commonly known as the “Stockholm Conference” because it took place in Stockholm, Sweden. It established that the main causes of environmental problems were massive industrialization, demographic over-explosion, and rapid urban growth. And it was determined that *human beings have the right to a healthy environment and a duty to protect and improve it for future generations* (Castillo, Benítez, & Pereira, 2017).

As a result, a series of recommendations were formulated that could be implemented around the world to face the growing environmental crisis, in order to promote the creation of institutions and the formulation of laws that deal with the environmental issue in all countries. This is how the United Nations Environment Programme (UNEP) was born, which is the organization that to date is in charge of environmental issues around the world. In 1974 the Cocoyoc conference was held, where UNEP and the United Nations Conference on Trade and Development (UNCTAD) issued a declaration inspired by the concept of ecodevelopment. (Castillo, Benítez, & Pereira, 2017). Here the first notions and concepts focused on the progress of society in harmony with the environment are beginning to appear.

In 1983-1984 the United Nations and UNEP created the World Commission on Environment and Development, and the report "Our Common Future", or also known as the Brundtland Report, was produced. In it, the analysis of four problems is carried out. First, regarding the Population and Human Resources problem, it is determined that the number of inhabitants on the planet increases at an accelerated rate in contrast to the limited amount of resources that are available; Second, regarding the subject of Food, it is established that the production of food by industries is massive and has reached high levels, however the distribution of that food is not adequate since the vast majority is available to a limited number of individuals and countries; third, the problem related to Species and Ecosystems determines that the prevailing development model based on mass consumerism has caused several species and ecosystems to be in danger of extinction, which puts all the ecosystem services that they provide to the human being at risk; and finally fourth, the

problem related to Energy establishes that due to the high industrial economic growth, the depletion of non-renewable resources is an increasingly close possibility, so it is necessary to take advantage of technological advances to make their use more efficient (Gutiérrez, 2013). Based on this analysis, the Brundtland Report establishes the term “sustainable development” and provides the following definition: “It is that development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs ” (Segura, 2014). For the first time, the relationship of economic, social, and environmental well-being is raised, by which countries should ensure. This report has become a benchmark for future programs dedicated to sustainable development, since as it could be observed, it already establishes a concept of what is, and which to this day is still used.

It is worth mentioning that, additionally, the report established some recommendations to achieve a compromise between the long-awaited economic development and the protection of the environment, such as that: governments should take a more dynamic role as disseminators of information on natural resources and the environmental quality, and promote an annual accounting of said resources as another asset on a social scale; the regulatory role of governments on environmental issues should be strengthened, recognizing the important role that incentives can play to reduce costs and use natural resources efficiently; and that the role of the United Nations and its international agencies until then had been very limited, so in turn their work to assure the protection of biodiversity and create awareness should be increased (Gutiérrez, 2013).

All this had the desired objective, since in 1992 the "Earth Summit" in Rio de Janeiro was held by the United Nations, and in it the concept of "sustainable development", provided in the Brundtland Report, was adopted. Something that gave even more legitimacy to the term within the international sphere, as it is used throughout a series of established principles that seek to reach international agreements in which the integrity of the environmental system is protected, as well as world development, recognizing that nature is an integral and interdependent element of the Earth (Organización de las Naciones Unidas, 1992). This meeting had an enormous significance in the environmental context of the planet, since it resulted in highly relevant agreements, such as: The Convention on Biological Diversity; The United Nations Framework Convention on Climate Change; The Declaration of Forests; The XXI Agenda; The Earth Charter (Castillo, Benítez, & Pereira, 2017). All of them aimed at the search and adoption of a new development model that



seeks both economic growth, social welfare, and care for the environment. Three fundamental pillars when talking about “sustainable development”.

Now, once the analysis of how the notion of sustainable development arose and what it consists of has been done, it is time to establish why it is related to an international business model such as BioTrade and why it is important. First, as previously established, BioTrade refers to the collection, production, transformation and commercialization of goods and services derived from native biodiversity (species and ecosystems) under criteria of environmental, social, and economic sustainability (United Nations Conference on Trade and Development, 2018). From the outset, it is clear that the ideals of sustainable development are related to what BioTrade promulgates, which is to promote trade and investment in products and services derived from biodiversity under criteria of economic growth, social welfare, and care for the environment. Therefore, to meet this objective of sustainable development, the promotion and adoption of a business model such as BioTrade can become an important tool, since both notions seek to change the widely established and adopted paradigm of the extractivist and massive consumption model where the only thing that matters is the generation of capital. That is why organizations of such magnitude as the United Nations have generated programs such as the "BioTrade Initiative", recognizing the importance of beginning to look after the environment without neglecting social and economic well-being. Thus, achieving sustainable development.

### **1.6 BioTrade relationship and the notion of biodiversity.**

As in the previous point, another notion to be considered when it comes to an international business model such as BioTrade is that of “biodiversity”. Therefore, it is necessary to carry out an analysis of what it means and why it is important both for the economic and social well-being of the human being and therefore of society.

First, what do we mean when we talk about biodiversity? Biodiversity, or also referred to as biological diversity, is the set of all living organisms in the world, the environment in which they live and the interaction they have with other species. It is made up of living organisms, as well as all ecosystems, and all the relationships they establish with each other (Oberhuber, Lomas, Duch, & Reyes, 2010). That is, everything that surrounds the human being has a direct or indirect

relationship with him. Man obtains endless goods and services from biodiversity, is a source of raw materials for the subsequent obtaining of goods necessary for human life and is decisive for the balance of ecosystems, because it provides a series of environmental services such as: soil decomposition, pest control, pollution control, hydrological cycle, decomposition of organic matter, carbon absorption, flood mitigation, among others (Quesada, 2017).

However, even though biodiversity is of great importance to humans, they have been in charge of destroying it over the years by adopting a utilitarian vision of it. Since the beginning of the Industrial Revolution, man has made excessive use of the natural resources that biodiversity offers, many times over his true needs, for his benefit and with the justification that it is to achieve "development", as it was thought back then that resources were unlimited. However, since the second half of the 20th century, it has been shown that this notion is wrong and therefore it is necessary to take alternative measures to counteract and avoid future major problems for future generations. It is necessary to consider different uses for biodiversity and it is essential to protect it to achieve the objective of creating a model of sustainable development so longed for today, which seeks economic growth, but without neglecting social and environmental well-being. As BioTrade seeks.

Now, once the great importance of biodiversity for humans and society has been highlighted, it is time to establish what relationship they have with BioTrade. As mentioned above, this business model refers to all those activities related to the collection, production, transformation and commercialization of goods and services derived from native biodiversity (species and ecosystems). Starting from the very definition of what BioTrade is, the term "biodiversity" is immersed. Both go hand in hand because, like the vast majority of human activities, BioTrade involves the use of resources from the environment. In other words, biodiversity could be understood as the "raw material" within BioTrade. However, and as can be seen throughout this work, the main difference with traditional business models is that in essence, BioTrade seeks that the use of these goods and services from biodiversity is sustainable and generates benefits for society, especially for those local communities from which the resources are obtained. Respecting in this way the three pillars of sustainable development such as generating economic, social, and environmental well-being. In other words, BioTrade seeks to change the paradigm of

that utilitarian vision of biodiversity, which establishes that it should be protected only as long as it continues to be of economic importance for humans. Replacing it with an inclusive vision, in which biodiversity is protected because its importance for human life and well-being in general is recognized. Not only economical.

### **1.7 Conclusions of the chapter.**

The information presented in this chapter examines BioTrade as an alternative business model for internationalization. Starting from what it is, how it arose, who have been the actors involved in its promotion, and others; It is determined why today, given the prevailing need to promote a development model that ensures both economic, social, and environmental well-being, the application of an alternative business model such as BioTrade that goes hand in hand with these pillars is essential.

An analysis of what aspects need to be taken into account to adopt a model like this was carried out, having examined the Principles and Criteria of the BioTrade Initiative by UNCTAD. Thus, it was possible to delimit to a greater degree what differentiates BioTrade from other traditional business models for internationalization.

Additionally, it was possible to examine notions such as "sustainable development" and "biodiversity", which once analyzed it was possible to establish the relationship they have with BioTrade and determine why their promotion and protection respectively are important for this business model, since a point in common that each one of them have is the recognition of the importance of the environment for human beings, not only at a social level but also at an economic and commercial level.

Finally, the main conclusion that can be obtained from this chapter is that BioTrade can be considered and adopted as a new business model for internationalization, especially by companies from developing countries, since these are the ones who have ideal conditions due to which are countries rich in biodiversity and natural resources, something that can be used with the development and promotion of goods and services with high added value. Contrary to the purely

extractivist business models in which developing countries and their companies usually settle for the supply of raw materials.

## **Chapter 2: Analysis of the historical and current BioTrade situation in Ecuador.**

### **2.1 Introduction.**

Once the analysis of the theoretical framework of BioTrade has been carried out, it is time to analyze what is the current situation of said alternative business model for internationalization within Ecuador, as well as its respective evolution since the beginning of the initiative. For that reason, this chapter will review several main points.

First, the regulatory framework related to BioTrade both at the international and national level. This section aims to analyze the normative bases on which BioTrade is based, always in relation to Ecuador. Therefore, in the international sphere, it is necessary to determine the main agreements in which BioTrade is mentioned and of which the country is a party; and within the national scope, it will be determined at the constitutional level what normative provisions can be considered of interest and importance for the promotion and adoption of BioTrade.

Additionally, it is necessary to carry out a review of what has been the evolution of this business model for internationalization within Ecuador. Therefore, an analysis of the two main BioTrade projects that have been carried out within the country will be carried out. Here reference is made to the "National Sustainable BioTrade Program Ecuador 2001-2008" and the "Andean BioTrade Program 2010-2014".

Finally, based on the analysis of the aforementioned projects, the evolution of BioTrade within Ecuador will be determined through certain statistics that will serve to illustrate the progress that this business model for internationalization has had in the country.

## **2.2 Regulatory framework related to BioTrade at the international and national level.**

Although BioTrade is an alternative business model for internationalization to those commonly practiced, it is still a model that carries out an economic activity, and therefore must respond to a series of regulations both at the international level and at the national level of the country where one may seek to adopt and promote. For this reason, it is necessary to carry out an analysis of what are the regulations under which it can be developed in a legitimate and legal way. In the next section, a brief review of those regulations will be carried out, first at the international level and later at the national level, taking the case of Ecuador, to determine the legal bases on which BioTrade is based.

### **2.2.1 International scope**

- **Convention on Biological Diversity (CBD)**

To begin, the Convention on Biological Diversity or known by its acronym CBD will be analyzed. As mentioned previously, BioTrade is particularly related to CBD. Proof of this is that within the Principles and Criteria of BioTrade it seeks to respond to the three objectives of said agreement, which will be seen later. For this reason, it is important to establish what it consists of and how it relates to this business model for internationalization.

First, it is worth recognizing the fact that the biological resources offered by planet Earth are of the utmost importance for both the social well-being and the economic growth of humanity. That is why its protection has acquired great urgency in recent decades, as there is a growing recognition that biological diversity is a global asset of incalculable value for the survival of present and future generations. And yet, the loss of species and ecosystems has never been as severe as it is now. In fact, the extinction of species caused by human activities continues at an accelerated rate. This is why the United Nations Environment Programme (UNEP) convened a Special Group of Experts on Biological Diversity in November 1988, to explore the need for an international convention on biological diversity (Convention on Biological Diversity, 2020). This is where the efforts to create the CBD as it is known today begin. Subsequently, in May 1989,

UNEP established the Ad hoc Working Group of legal and technical experts to prepare an international legal instrument for the conservation and sustainable use of biological diversity. Professionals had to take into account "the need to share costs and benefits between developed and developing nations", as well as "the means and modalities to support local community innovations" (Convention on Biological Diversity, 2020).

Following that, at the 1992 United Nations Conference on Environment and Development, or better known as the "Earth Summit" in Rio de Janeiro, the presentation and subsequent signing of the CBD text took place, which finally entered into force on December 29, 1993.

Currently the CBD has been signed or ratified by 196 countries, considered as the "parties" to the Convention. With certain exceptions, such as the case of the United States of America, who is not officially part (Sicard & Altieri, 2010). Something not less important, since this is one of the main powers in the world, so certainly if their support had been counted, it could be considered that the progress made by the agreement could be greater.

Now, once reviewed how the CBD originated, it is important to review its content as well. Among the main objectives of the CBD are the conservation of biological diversity, the sustainable use of its components and the fair and equitable distribution of the benefits derived from the use of genetic resources, through a convenient access to those resources and a timely transfer of relevant technologies, bearing in mind all rights to those resources and technologies, as well as through appropriate financing (Organización de las Naciones Unidas, 1992).

Through these objectives, the CBD evidently recognizes the importance of biological diversity, highlighting throughout its text that it recognizes a plurality of values that can be attributed to biodiversity. Ecological, genetic, economic, social, scientific, educational, recreational, cultural, and aesthetic values of biodiversity and others (Sicard & Altieri,

2010). Talking about this plurality of values is important, since it is recognized that biodiversity cannot be seen only from a utilitarian vision; and therefore, it is not always possible to put a price on it.

On the other hand, within the CBD it is also recognized that it is impossible to pretend that humans stop making use of biodiversity, and that is why, to at least encourage that such use does not exceed the limits, a use is sought sustainable. This means that the use of components of biological diversity is possible; but it is intended to be in a way and at a rate that does not cause a long-term decrease in it. Thus, maintaining its possibilities to satisfy the needs and aspirations of current and future generations (allusion to the concept of sustainable development).

Additionally, with respect to the sustainable use of biodiversity, it is determined that each contracting party, as far as possible, will take certain measures, such as:

- It shall adopt measures related to the use of biological resources to avoid or minimize adverse effects on biological diversity.
- It will protect and encourage the customary use of biological resources, in accordance with traditional cultural practices that are compatible with the requirements of conservation or sustainable use.
- It will assist local populations to prepare and implement remedial measures in degraded areas where biological diversity has been reduced.
- It will foster cooperation between its government authorities and its private sector in the development of methods for the sustainable use of biological resources.

Finally, with regard to the fair and equitable distribution of the benefits derived from the use of genetic resources, within articles 16 and 19, the CBD refers to access and transfer of technology, referring to what it seeks to ensure and / or facilitate to other Contracting Parties the access to relevant technologies for the conservation and sustainable use of biological diversity or that use genetic resources and do not cause significant damage to the environment, as well as the transfer of these technologies (Organización de las Naciones Unidas, 1992); emphasizing developing countries, since these are usually the



ones who do not have the necessary resources for the development of technologies, and therefore it is important to facilitate their access to them. All this in order for each Contracting Party to take legislative, administrative or policy measures to share fairly and equitably the results of research and development activities and the benefits derived from the commercial and other uses of biodiversity with the Contracting Party that contributes those resources (Organización de las Naciones Unidas, 1992).

Having carried out this brief analysis of certain points of the CBD considered important and pertinent to the subject in question, it is possible to highlight several aspects of why BioTrade is closely related to the Convention on Biological Diversity (CBD) and vice versa. To begin with, the fact that this alternative business model for internationalization had its origins in the same 1992 United Nations Conference on Environment and Development, in which the CBD was finally signed, served as the basis for later establishing the postulates of BioTrade. In fact, one of the actions by the United Nations to ensure compliance with the objectives of the CBD was precisely the creation of the BioTrade initiative. Which, as previously mentioned, seeks to stimulate trade and investment in biological resources to promote sustainable development. (Quesada, 2017). Now in relation to this it is important to indicate that there are three approaches to BioTrade. The value chain approach, which is a mechanism for the articulation of various actors in the production chain, the implementation of good practices related to both the use and the conservation of resources, and the distribution of economic, environmental and social benefits among those who participate in the chain; the adaptive management approach that contributes to the implementation of sustainable practices, the identification of impacts on species, ecosystems and the continuous improvement of productive practices; and the ecosystem approach implies an integrated vision of the social and ecological aspects, as well as the interactions and processes that the productive systems involve (UNCTAD, 2007).

This is relevant because it is a clear example that, like the CBD, BioTrade seeks to promote the sustainable use of biological resources by human beings, avoid damage to biodiversity and / or repair them in the event that an economic activity causes damages, as well as

ensuring the fair distribution of the benefits derived from that use to all the actors involved, and among others. That is, it can be considered as a tool aimed to manage the problems related with resource overexploitation and ecosystem degradation (Quesada, 2017); something similarly sought by CBD. Additionally, the CBD is a binding agreement; in other words, the contracting parties must comply with the measures established in its text, which increases the normative base at the international level on which BioTrade can be based for its promotion and adoption. In fact, proof of this is that in 2014, when the 12th meeting of the CBD was held, 35 decisions were adopted as part of the plan to support the implementation of the Strategic Biodiversity Plan 2011-2020 and achievement of the Aichi Goals. In two of these decisions, the BioTrade initiative was recognized as an important ally in meeting global conservation goals.

- **Nagoya Protocol**

Another extremely important regime at the international level to be taken into account when speaking of a sustainable use of biological diversity, and therefore relevant in relation to BioTrade, is the Nagoya Protocol. This protocol had its origin in the World Summit on Sustainable Development held in Johannesburg, 2002, in which a call was made to negotiate, within the framework of the CBD, an international regime that would promote and safeguard the third objective of the agreement, referred to the fair and equitable sharing of the benefits derived from the use of genetic resources. The Conference of the Parties to the Convention took action at its seventh meeting, held in 2004, instructed his Working Group to prepare and negotiate an international regime for access to genetic resources and participation in benefits, and finally after six years of negotiations, on October 29, 2010, at the tenth meeting of the Conference of the Parties, held in Nagoya, Japan, the Nagoya Protocol on Access to Genetic Resources and Participation Fair and Equitable in the Benefits Derived from its Use to the Agreement on Biological Diversity was adopted (Programa de las Naciones Unidas para el Medio Ambiente, 2011); which it would come into force on October 12, 2014 (Silvestri, 2017).

The main purpose of this protocol is “to ensure a fair and equitable distribution of the benefits of the use of genetic resources, including access to genetic resources and the

appropriate transfer of related technologies, taking into account all rights over said resources and technologies. and through appropriate financing, thus contributing to the conservation of biodiversity and the sustainable use of its components" (Programa de las Naciones Unidas para el Medio Ambiente, 2011).

In other words, it seeks to ensure that access to genetic resources occurs only when there is prior informed consent of the provider country and a fair and equitable distribution of benefits between the access applicant and the provider of the resources, which is specified through mutual conditions. agreed in accordance with the supplier's national legislation (Silvestri, 2017).

Among certain relevant aspects that are addressed within the Protocol in addition to the fair and equitable sharing of benefits and access to genetic resources, are access to knowledge, access to traditional knowledge associated with genetic resources, contributing to conservation and sustainable use, cross-border cooperation, information exchange on access and benefit sharing, monitoring of the use of genetic resources, technology transfer, among others. This is important in relation to BioTrade because, within its Principles and Criteria, points 1, 2, 3, 6 & 7 refer to these mentioned topics. More clearly, it can be established that some of the common aspects between the Nagoya Protocol and BioTrade are that both seek a distribution of benefits for the use of biodiversity along the value chain; These benefits can be monetary and non-monetary; When it comes to the access and use of genetic resources, traditional knowledge, and biodiversity, both require prior informed consent.

Now, while there are still no specific laws regarding BioTrade, there are in the case of the Nagoya Protocol. Taking the case of Ecuador, these can be found within the Organic Code of the Environment; within the Organic Code of the Social Economy of Knowledge, Creativity, and Innovation; within the Regulation to the Common Regime on Access to Genetic Resources; among others. This consequently benefits and facilitates even more the promotion and application of BioTrade, since having a relationship with this Protocol

as has been observed and knowing that it has an international and national legal basis, in turn translates into indirect support for this business model.

- **Sustainable Development Goals (SDG)**

Another international milestone regarding the care and sustainable use of biodiversity for both the economic and social development of humanity is the establishment of the Sustainable Development Goals (SDG) by the United Nations. These are a series of objectives that emerged from the year 2015, as a follow-up to the Millennium Development Goals (MDGs) of the year 2000, which in their entirety could not be achieved until their established deadline, which was the year 2015 in question.

For this reason, world leaders adopted a new set of global goals to tackle a variety of issues such as eradicating poverty, protecting the planet, and ensuring prosperity for all. This as part of a new sustainable development agenda 2015 – 2030 (Organización de las Naciones Unidas, 2020).

Among the relevant objectives in relation to the subject dealt with in this work, such as BioTrade, the following can be highlighted:

**Goal 1: End poverty in all its forms everywhere** - As its name says, the first SDG objective refers to combating the situation of extreme poverty in which a large number of inhabitants still live around the world. In fact, approximately 10% of the world's population still lives in extreme poverty today, with difficulties in meeting the most basic needs. Additionally, the poverty rates in rural areas are nearly three times higher, with 17.2%, compared to that of urban areas, which is 5.3% (Organización de las Naciones Unidas, 2020).

This objective is relevant in relation to BioTrade as an alternative model for internationalization since this business model seeks not only the responsible and

sustainable use of biodiversity, but also seeks to involve all the actors that participate (either by providing knowledge, raw materials, among others) in the process of elaboration and subsequent commercialization of goods or services from biodiversity, who in many cases live in rural areas of developing countries, even becoming indigenous communities. And in addition to involving them, it seeks a fair and equitable distribution of the benefits generated from said production / commercialization. In this way, it generates employment and provides a greater source of income compared to business models based on traditional value chains. Seen from this point of view, BioTrade can be considered as a tool to reduce extreme poverty in those areas where it is most needed.

**Goal 8: Promote inclusive and sustainable economic growth, employment, and decent work for all** - This objective of sustainable development goes hand in hand with the first, since the generation of employment seeks to generate economic growth and therefore contribute to eradicating poverty. And in the same way, a direct relationship with BioTrade can be established, since again this alternative business model can be promoted and used as a tool to generate employment, especially in rural areas of developing countries that have extensive natural resources at their disposal to start businesses based on biodiversity. As with the search to involve all the actors present in the production / commercialization process and the fair and equitable distribution of the benefits derived from it, inclusive and sustainable growth can be generated for more people and communities outside the urban sector (Organización de las Naciones Unidas, 2021).

**Objective 12: Responsible consumption and production** - This objective establishes that, in order to achieve economic growth and sustainable development, it is urgent to reduce the ecological footprint through a change in the methods of production and consumption of goods and resources, and for this the efficient management of shared natural resources and the way in which that toxic waste is removed and pollutants are vital. It is also important to promote industries, businesses, and consumers to recycle and reduce waste, as well as to support developing countries to move towards sustainable consumption patterns by 2030 (Organización de las Naciones Unidas, 2021).

This objective is directly in accordance with BioTrade, since it clearly determines that it is essential to seek and adopt a model of production, consumption, and others, which is sustainable, in order to protect the environment and make responsible use of its resources. Once again, BioTrade, being provided and adopted as an alternative business model for internationalization, can be considered and used as a new tool to achieve it, since its Principles and Criteria seek a change in the matrix that benefits not only the protection of biodiversity, so necessary for the human being, but does not neglect its economic development also.

**Goal 13: Climate Action** - This objective seeks to tackle the aggressive climate change caused by human labor and which has affected planet Earth so much for decades. Above all, it emphasizes the developing countries who, as they do not have the necessary resources or the appropriate technology to take measures to address this problem, must receive the support of the major powers who, as stated above in the Convention on Biological Diversity (CBD), have a duty to cooperate to achieve the common goal (Organización de las Naciones Unidas, 2021).

The close relationship with BioTrade is once again evidenced, not only in the aspect that it is a business model that seeks a sustainable and responsible use of biodiversity and its resources to protect the planet as sought by objective 13, but also in that by as is established in this objective, within BioTrade the support and investment by the different actors of the public or private sector is also necessary for its promotion and subsequent application. Above all, in developing countries, since they are the ones who have the favorable conditions for its adoption; however, they do not always have the necessary resources to start up, which represents a limitation to be addressed.

**Goal 15: Life of terrestrial ecosystems** - Finally, this objective is relevant in relation to BioTrade in the fact that it establishes the need to take care of the terrestrial resources that the planet has, by making adequate use of them and thus avoiding their loss. BioTrade intends to safeguard these resources through the application of good practices in terms of

land use, thus promoting responsible production and even ensuring subsequent food sovereignty for the actors involved.

The analysis carried out on some of these Sustainable Development Goals (SDGs) is important because it represents the clear relationship and importance that an alternative business model such as BioTrade can have, not only in the specific case such as Ecuador, but also internationally, and globally. Well, it is possible to notice how this business model is in the same line with so many purposes that are pursued today by actors of great importance worldwide (aligns with the international agenda), so recognizing this fact affirms its position as a viable alternative of business.

- **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)**

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is an international agreement concluded between countries to prevent international trade in wild flora and fauna from threatening their existence. The extensive information available on the risk of extinction for many species may suggest that the need for such a practice was obvious. However, at the time CITES ideas were first outlined, back in the 1960s, the international debate on regulating wildlife trade for conservation was relatively new. It was not until the following decades that the need for an international agreement such as CITES became unquestionable (CITES, 2021).

The international wildlife trade is estimated at billions of dollars annually and affects hundreds of millions of species of plants and animals. The trade ranges from living flora and fauna to the variety of wild animals derived from them, and a wide variety of foods and products, from exotic animal skins to wooden instruments, pharmaceuticals, etc. From the elaboration of these products, together with other factors such as the high levels of exploitation of some flora and fauna and the destruction of the habitat, it significantly reduces the population of some species, putting them in danger of extinction. For this

reason, the existence of an agreement aimed at guaranteeing the sustainability of trade is essential in order to preserve these resources for future generations (CITES, 2021).

This is how CITES came into force on July 1, 1975, and from its inception it was determined that it is an international agreement within which the international cooperation of the Parties is required for its regulation. This is obviously because the trade in wild animals and plants crosses borders between countries, so that in order to protect certain species from over-exploitation, such cooperation is necessary. Additionally, it should be mentioned that, although CITES is legally binding on the Parties, it is generally not directly applicable, which means that it cannot be fully applied until specific measures are taken in each country for this purpose. On the contrary, it offers a framework that must be respected by each of the Parties, which have to enact their own national legislation to ensure that CITES applies to national scale (CITES, 2021).

In relation to this, for the implementation of CITES it is necessary that within each member country a “Scientific Authority” be established (in the case of Ecuador this is made up of a series of higher institutions specialized in various areas) whose job is to determine that the exploitation of the specimen / s will not have a detrimental effect on its conservation status, or on the extension of the territory occupied by the population of the species in question. The positive or negative nature of this evaluation is the result of an analysis carried out within the framework of the Non-Harmful Extraction Opinion (NDF). And in the same way, it is necessary to establish "Administrative Authorities", in Ecuador being the Ministry of the Environment (MAE), Ministry of Aquaculture and Fisheries (MAP), and the Ministry of Foreign Affairs and Human Mobility (MREMH). Being in charge of granting permission for any exploitation of species listed in appendices I, II and III of CITES (GOB.EC, 2020).

It is important to review these aspects, because here the strong base that CITES represents can be seen, both internationally and nationally as a result of it, so that a business model for internationalization such as BioTrade can be implemented. Well, if the core of this business model revolves around the production and subsequent commercialization of



goods / services based on biodiversity, it is important that there is a regulation that seeks to control that said exploitation of biological resources is sustainable and does not interfere or put your livelihood at risk. Therefore, CITES is of great value for BioTrade, since it seeks to cover areas of interest for this business model, such as the sustainable and responsible use of biodiversity and the commercial aspect of it.

### **2.2.2 National scope.**

- **Constitution of Ecuador**

For several decades, Ecuador has been recognized as one of the first countries in the world to ensure the protection of biodiversity, including constitutional provisions to ensure such protection. This is partly due to the relevance that environmental law has taken in recent decades, which focuses on the issue of sustainable development; that as has been established previously, it is the production, exploitation and use of natural resources in a responsible manner, ensuring environmental conservation; and that both issues must be dealt jointly or in coordination, that is, economic growth and conservation are indivisible for sustainable development. Proof of this can be identified from the 1979 Constitution, which established in article 19 the right to live in an environment free of contamination, likewise, it added as a duty of the State to ensure that this right was not affected and, in addition, established that the protection of nature must be highlighted and monitored in order to establish restrictions on the rights or freedoms of the individuals in relation to the use of it, in order to protect the environment (Maldonado, 2020).

Subsequently, in the 1998 Constitution, the range of legal provisions referring to the protection of the environment was expanded. In Title III, called “Rights, Guarantees and Duties”, Chapter V, of Collective Rights, Section II, of the Environment, protection of the environment was established, specifically in articles 86 and 87, referring to the classification of infractions, administrative, civil, and criminal sanctions, for actions or omissions against the norms of protection of the environment. Likewise, Article 90 prohibited the entry of nuclear waste and toxic waste into the national territory, as well as Article 91, which granted ownership of the action to any natural or legal person, in order to materialize the protection of the environment. Further, the 1998 Constitution in its

article 240, establishes special protection to the provinces of the Amazon region in terms of their ecological preservation, in order to maintain biodiversity for the sustainable development of its local communities (Maldonado, 2020).

Furthermore, innovative provisions regarding the protection of the environment are presented with the 2008 Constitution. Perhaps the most notable is the fact that according to article 10, legal personality is granted to nature, thus making it a subject of law and therefore the owner of these. Character that had previously been recognized exclusively to human beings and legal persons, excluding other entities, such as nature (Maldonado, 2020).

These provisions can be better understood by recognizing that humanity has long been aware that the prevailing model of production and consumption in society leads to environmental collapse, and therefore environmental law is nothing other than the reaction to that certainty. However, it is not just about humanity surviving, but about building a better, fairer, and more inclusive society for future generations. For these reasons, it is emphasized that legal-environmental problems have a direct impact on social, economic, and environmental development, therefore, on the sustainable development of a State (Maldonado, 2020). It is in the spirit of this need that Ecuador has taken the initiative with the 2008 Constitution to name nature as a subject of law and thus ensure sustainable development and good living for present and future generations.

Now, it should be recognized that these innovative provisions in the framework of environmental law and specifically in relation to the recognition of nature as a subject of law, have not been seen by everybody as something correct. Well, the main detractors of this notion affirm that the human being is the only being capable of assuming responsibilities thanks to his reasoning capacity, and therefore he is the one who has the possibility of recognizing rights, and for that reason, being a subject of rights. Something that nature is not capable of doing. However, for the establishment of this legal nature of nature, principles based on deep ecology were taken, which considers that nature should not be seen as an object of domination, but as a model of interdependence between various forms of life. It is a holistic conception of nature, through which it must be considered as a vast network of interdependent relationships in which the whole prevails over the parts.

[...] The consideration of nature as a normative instance ipso facto implies the reintegration of man into the bosom of nature and the denial of anthropocentrism" (Maldonado, 2020).

In the same sense, the 2008 Constitution develops the content of the rights of nature, in the following articles (Asamblea Constituyente, 2008):

**Art. 14.-**Sustainability and well-being are guaranteed by recognizing the right of people to live in a healthy and ecologically balanced environment (Sumak Kawsay). It is declared that environmental conservation, conservation of ecosystems, biodiversity and all genetic heritage is of national interest, and it seeks to prevent environmental degradation and promote the restoration of degraded natural spaces (Asamblea Constituyente, 2008).

**Article 71.-** Nature or Pachamama, where life is reproduced and carried out, has the right to have its existence fully respected and the maintenance and regeneration of its life cycles, structure, functions, and evolutionary processes.

Any individual, community, people, or nationality can request the authorities to respect the rights of nature. When necessary for the application and interpretation of these rights, the principles established in the Constitution must be respected. The state encourages people, companies, and groups to protect nature and respect all the elements that make up its ecosystem (Asamblea Constituyente, 2008).

**Article 72.-**Nature has the right to restoration. This restoration goes beyond the obligation of the State and natural or legal persons to compensate those groups that depend on the affected natural systems.

In the event of serious or permanent environmental impacts, including those derived from the extraction of non-renewable natural resources, the relevant authorities will determine the most effective mechanisms to achieve recovery or will take the appropriate measures to minimize it (Asamblea Constituyente, 2008).

**Art. 73.-** The State must take preventive and restrictive measures for activities that can lead to the extinction of species, destruction of ecosystems and permanent changes in the natural cycle.

The introduction of organisms and organic and inorganic material that could permanently alter the national genetic heritage is prohibited (Asamblea Constituyente, 2008).

**Art. 74.-**Individuals, communities, peoples, and nationalities have the right to benefit from the environment and natural resources that allow them to prosper. Environmental services are not available for appropriation. Production, supply, use and exploitation must be regulated by the State (Asamblea Constituyente, 2008).

**Article 83.-** As stipulated in the Constitution and other laws, it is the duty and responsibility of citizens:

(...) **6.** Respect the rights of nature, preserve a healthy environment, and use natural resources in a rational, sustainable, and sustainable way (Asamblea Constituyente, 2008).

**Article 277.-** To achieve good living, the general duties of the State will be:

**1.** Guarantee the rights of people, communities, and nature (Asamblea Constituyente, 2008).

**Article 395.-** Basically within this article four environmental principles are determined:

- The State must ensure a sustainable development model that maintains biological diversity and the natural regeneration of ecosystems, respects environmental balance and cultural diversity, and meets the needs of present and future generations.
- Environmental management policies are comprehensively applicable and must be complied with by all natural or legal persons at all levels of the State and the national territory.
- The State guarantees the active and regular participation of the affected people, communities, peoples and nationalities in planning, execution, management, and all activities that affect the environment.
- If the scope of the law on environmental issues is questionable, the provision that ensures the best interest of nature maintenance will prevail.

**Art. 396.-**The State will take appropriate measures to avoid negative environmental impacts, when the presence of damage is evident. If the environmental impact of an act or omission is questionable, the State will take effective and timely protection measures, even in the absence of scientific evidence of harm. Liability for environmental damage is objective. In addition to the equivalent penalties, any damage to the environment means the obligation to fully restore the ecosystem and compensate the affected people and communities.

Regarding the production, distribution, commercialization and use of goods and services, each actor involved is responsible for preventing environmental impacts, minimizing, and repairing the damages caused by them, as well as guiding and maintaining environmental control systems to long term. Legal actions to prosecute and sanction for environmental damage will be imprescriptible (Asamblea Constituyente, 2008).

**Art. 397.**-In the event that the environment deteriorates, the State will immediately take alternative measures to ensure the restoration of the health of the ecosystem. In addition to punishing those responsible who caused the damage, the State will repeat against those the obligations that comprehensive reparation entails, under the conditions and with the procedures established by law. There is also responsibility for the server or servers that had to carry out the control of the environment and did not do it in a timely manner (Asamblea Constituyente, 2008).

The objective of this section is not to cover the entire content of the Constitution of Ecuador; yet, for purposes related to the subject in question, such as BioTrade as an alternative business model for internationalization, it has been important and necessary to carry out this analysis of articles referring to the protection of biodiversity to directly illustrate how the promotion and adoption of this model of business has a broad legal basis within the Ecuadorian territory on which it can develop. It is important to take into account the illustrated provisions and recognize that Ecuador is a country that not only has the natural wealth necessary to launch BioTrade, but additionally it is evident that the State seeks to legally support the search for new models of social development, economic and environmental such as BioTrade, so it is necessary to take advantage of it in order to begin to change the paradigm and ensure the well-being of the generations present and future.

- **National Development Plan “Toda una Vida 2017 – 2021”**

The National Plan of Development “Toda una Vida 2017 – 2021” arises from the ideas previously proposed of "Good Living" within the Constitution of 2008, and the National Plan for Good Living 2013-2017 in which BioTrade was included. As in these

notions and initiatives, this development plan seeks a change in the productive matrix in order to promote exports that incorporate added value, in addition to the inclusion of the actors involved in the productive and commercial processes.

Regarding the subject in question, such as BioTrade, within the plan it is established that the richness of biodiversity is a fundamental pillar to achieve the society of Good Living, and within this it is essential to develop bio-knowledge, which is defined as "the set of traditional and scientific knowledge and applications derived from the study, understanding, research and sustainable use of biodiversity."; with the hope that bio-knowledge allows the generation of links between society, the market, the economy and the environment (Quesada, 2017).

It is argued that, in a megadiverse country like Ecuador, environmental quality and the rights of nature should be treated as an essential part of the major political, economic, and productive agenda in the long-term sustainable development model. The persistence in the traditional model, based on the false conception of the existence of infinite resources, with unsustainable consumption and production patterns - in reference to deforestation, loss of biodiversity, reduction and contamination of water sources, and erosion and soil desertification - will inevitably exacerbate the multiple negative effects of climate change on society, with particular damage to society, the economy and biodiversity. That is why, the sustainable development so desired to achieve "Good Living" as established in the National Plan of Development "Toda una Vida 2017 – 2021" implies restructuring the country's economy by reducing dependence on exploitation activities and changing the direction of the economy towards one based on in bio-knowledge, which positions biodiversity as a source of knowledge. A nature-friendly economy that means hosting a set of knowledge, traditional and scientific applications. To mark the beginning of a new era of biological economy based on the sustainable use of natural resources for the production of food, energy, and other products (Consejo Nacional de Planificación, 2017).

This responds to its third objective referring to "Guarantee the rights of nature for current and future generations." Seeking to reduce dependence on products derived from fossil fuels, and thus, modify the pattern of production and accumulation without neglecting the biophysical limits and natural cycles. Emphasizing the protection of water sources, proper land use to combat deforestation promoting sustainable agriculture, and attracting investments to consolidate and expand the energy matrix based on renewable energies. Additionally, to promote a competitive and resilient economy, through the progressive transition towards an inclusive and sustainable bioeconomy, based on the ability to integrate biodiversity management policies with those that promote innovation and technological development and their insertion into the country's productive matrix. This includes supporting all initiatives that allow the creation of new jobs and sustainable development based on the responsible use of biodiversity (Consejo Nacional de Planificación, 2017).

- **National Biodiversity Strategy 2015 - 2030**

The National Biodiversity Strategy (NBS) 2015 - 2030 is a plan at the national level implemented in 2016, as a successor to the first plan of the National Biodiversity Strategy 2001 - 2010. Its central axis is not only to reduce pressures and the inadequate use of biodiversity at levels that ensure its conservation, but also incorporate biodiversity, goods and associated ecosystem services, in the management of public policies; distribute in a fair and equitable manner the benefits of biodiversity and associated ecosystem services, taking into account gender and intercultural specificities; and strengthen knowledge management and national capacities that promote innovation in the sustainable use of biodiversity (PNUD, 2016).

It should be noted that the environmental principles mentioned in the previous section within article 395 are in essence the pillars of the National Biodiversity Strategy, since within it is established in a textual way that the optimal conservation of the environment, the conservation of ecosystems, biodiversity and integrity of the national genetic heritage,

and prevention of environmental damage are matters of national interest (Ministerio del Ambiente del Ecuador, 2016).

In reference to BioTrade within the country, the National Biodiversity Strategy 2015 – 2030 highlights the National Sustainable BioTrade Program, which began its implementation in 2001. Subsequently, within the framework of this program, the project “Facilitation of financing for businesses based on biodiversity and support for market development activities in the Andean Region”. This project made a substantive contribution to the knowledge, development of tools, proposals and initiatives focused on the management and use of goods and services derived from native biodiversity, under criteria of environmental, social, and economic sustainability.

Among the BioTrade achievements as a result of the previously mentioned project between the years 2011 - 2014, according to the NBS 2015 - 2030, the following can be highlighted: the development of 10 new products and services derived from biodiversity: 4 for the pharmaceutical and cosmetic industry and 6 sustainable tourism products. Likewise, the first case of indigenous agriculture based on biodiversity for pest control in Ecuador was supported. Within the project, six market studies were developed for different products (avitourism, bio-inputs, non-alcoholic beverages, charapas, palo santo and native ornamental plants); technical sheets of species such as tara, uvilla, mortiño and biological characterizations for frogs and species of marine fauna were made. This has led to nine products (guayusa, palo santo, uvilla, mortiño, frogs and four cosmetic formulas based on unguurahua) have obtained the permits for their local and / or international commercialization (Ministerio del Ambiente del Ecuador, 2016).

In addition, as part of the implementation in Ecuador of the CBD commitments, the Small Grants Program (PPD) was given, which also contributed significantly to the design, cooperative financing, and technical assistance of more than 200 community projects focused on the sustainable use of natural resources of indigenous peoples since 1994. As well as helped in the recovery of traditional knowledge and customary practices, strengthening social organization and the enhancement of the contribution of biodiversity,



both in the economy of rural families, and in local development processes and land management. At least 80 bio-enterprises are registered that have been incubated from the National Sustainable BioTrade Program, from the Small Donations Program, already mentioned; and more recently, from various other projects created by the Ministry of the Environment (Ministerio del Ambiente del Ecuador, 2016).

All these undertakings have paved the way for an innovative approach to biodiversity from its productive, industrial, and commercial dimensions. Likewise, they have contributed to the creation of an information base on the potential supply of environmental goods that are part of national consumption and a component of the country's exports. This offer includes agricultural products and organic food, natural ingredients and fibers, certified wood, recycled products (glass, paper, and aluminum), finished products for the food, pharmaceutical and cosmetic industries, biodegradable products, and services such as sustainable tourism. In an analysis of the export potential and competitiveness of the offer of "green products" from Ecuador, where the volume of exports was used as analysis factors, the revealed comparative advantage index (IVCR) and the proximity between the groups or families of products that are being exported. The results revealed a commercial potential for the following products: cocoa, coffee, bananas and non-traditional fruits, fishery products and aquaculture. These products represent a high percentage of non-oil exports, have high IVCR rates and show export growth levels of one digit or more in most cases. All these products are well positioned in the international market and are among the most competitive in Ecuador (Ministerio del Ambiente del Ecuador, 2016).

This review allows us to determine how the notion of BioTrade has been introduced over the years in the various development plans and strategies implemented within the country, which seek to consolidate a change in the productive matrix that ensures both economic growth and environmental protection. Recognizing the fact that Ecuador is a megadiverse country, so it can betake advantage of the biodiversity it has in a sustainable way. Therefore, the efforts implemented must be with a view to changing traditional production / development models based on extractivist practices; and on the contrary, take advantage of the biodiversity that the country has by adopting new measures that seek to promote

bio-knowledge and therefore the development of more and more bio-enterprises. Something that, according to the development plans previously analyzed, within the country will be encouraged and supported. For these reasons, an alternative business model for internationalization such as BioTrade is ideal to be applied and promoted in Ecuador. Thus, it would help to change the long-term productive matrix that is sought, ensuring the sustainable use of the country's biodiversity, generating employment, and involving various actors from both urban and rural areas.

### **2.3 National Sustainable BioTrade Program Ecuador 2001-2008.**

The National Sustainable BioTrade Program (PNBSE) was established in 2001, through an agreement between the Ministry of the Environment (known as MAE), UNCTAD and the Corporation for the Promotion of Exports and Investments (CORPEI), in addition to having the support of the Foundation for Ecological Studies – EcoCiencia, as a strategic technical partner, among other institutions. The mission of the program was “to promote sustainable development and the conservation of biodiversity in accordance with the objectives of the Convention on Biological Diversity (CBD), by promoting trade and investments that enhance the use of these resources, in accordance with the objectives of the CBD and the principles and criteria of BioTrade” (Quesada, 2017).

Among the main purposes of the Program, the following stood out:

- Support the formulation of BIOTRADE programs by country.
- Support the process of definition and implementation of national and subregional biodiversity strategies.
- Support the analysis of business, market and investment opportunities for products and services derived from biodiversity, both at the national and subregional level in the context of the trade policies of each country and at the subregional level.
- Support the development of business capacity for the effective development of bio-entrepreneurship opportunities in the context of sustainable development.
- Finance specific and demonstration projects of products and services derived from biodiversity (Vélez, Becerra, & UNCTAD, 2001).

Regarding the results obtained, the PNBSE benefited approximately 40 initiatives, with an investment of USD \$ 900,000, through the implementation of thirteen projects, which benefited about 14 thousand families, which additionally received technical advice on various issues, such as: the sustainable management of species, product development, business plans, business management, seeking to increase the social and economic well-being of populations, in areas with high diversity, thus reducing poverty levels and collaborating in the conservation of the environment. Defining three sectors of BioTrade, based on the number of initiatives and companies that handled biodiversity goods and / or services:

- Natural Ingredients and Finished Products of the Pharmaceutical and Cosmetic Industry.
- Natural Ingredients and Finished Products of the Food Industry (includes aromatic species and with an emphasis on cocoa).
- Sustainable tourism (Quesada, 2017).

#### **2.4 Andean BioTrade Program 2010-2014.**

The Andean BioTrade Program 2010 - 2014 was a program developed by the Global Environment Fund (GEF), UNEP and the Development Bank of Latin America (CAF), who joined forces for the formulation and development of the Project "Facilitation of financing for businesses based on biodiversity and support for market development activities in the Andean Region" launched between the period 2010 - 2014. It was a multi-country initiative of which Colombia, Ecuador and Peru were part, with a total final budget of approximately US \$ 20.8 million between GEF and CAF funds and counterparts from the National Executing Units (UEN). UNEP was the implementing agency and CAF, the executing agency at the regional level, who also led planning, operation, and strategic evaluation processes during the execution of the Project. At the national level, within Ecuador, the Executing Unit was CORPEI who, together with the Ministry of the Environment, had the objective of supporting and strengthening BioTrade as a strategy for the conservation and sustainable use of biodiversity (Banco de desarrollo de América Latina, 2015).

The main objective of this Project was to contribute to the conservation and sustainable use of the biodiversity of the Andean Region by providing an alternative livelihood based on BioTrade opportunities for native and remote communities. Additionally, to support and strengthen

BioTrade at the local, national, and regional levels as a strategy for the conservation and sustainable use of biodiversity. Regarding the main contributions and lessons obtained from its application, there are the following:

- **GOVERNANCE AND FAVORABLE BUSINESS ENVIRONMENT**

Regarding the strengthening of policies, before the implementation of the Project, Ecuador did not have a strategic development policy in which BioTrade is addressed. With the intervention of the Project, it was possible to include the concept in the Strategic Development Plan - Buen Vivir 2013 - 2017 and later in the other future development plans. Additionally, regarding the development of documentation to address market access barriers and support documents to improve the regulatory processes of BioTrade in the region, within Ecuador, 2 documents were developed to address tariff and non-tariff barriers, such as, for example, the presentation of the proposed amendment to appendices I to II of Cites on vicuña, which allows its commercialization. Such proposal was successfully accepted. And 5 support documents were developed to improve BioTrade regulatory processes, such as, for example, a regulatory proposal for the sustainable management of non-timber products was made. Finally, regarding the training of personnel for the regulation and promotion of activities for the use of native resources through BioTrade, in Ecuador 189 professionals were trained in various areas, such as: BioTrade Principles and Criteria; Regulations and national legislation related to the subject; International agreements signed by Ecuador in relation to this business model; Wildlife management in Ecuador; Flow of procedures for obtaining permits and licenses (Banco de desarrollo de América Latina, 2015).

- **MARKET ACCESS FOR BIOTRADE PRODUCTS AND SERVICES**

Access to markets is the basis for sustaining BioTrade activities, encouraging the private sector to venture into the use of native biodiversity, including sustainability practices in its management. With respect to the case of Ecuador, 10 products were developed; for example, the Chankuap Foundation strengthened the IKIAM cosmetic line, applying "green chemistry" and "organic cosmetology" criteria. Regarding the adoption of new

channels for the consequent commercialization, 157 companies participated in various promotional activities and access to markets such as fairs, business rounds, among others. In the case of Ecuadorian companies, they participated in thirty-two fairs, in which they were able to obtain new knowledge related to the dynamics of the markets, providing better response capabilities to the changing requirements of the demand, being able to highlight: Knowledge of trends and access requirements; Cost benefit of investment in channel diversification; Characteristics of the competition; Profile of buyers; Multisectoral collaboration for the positioning of native products. Additionally, regarding the Valuation and access to information for making informed decisions, seven mechanisms for the distribution of information related to BioTrade were carried out, through web pages, social networks, commercial and business platforms, publications, videos and photos, promotional events, and others (Banco de desarrollo de América Latina, 2015).

- **ACCESS TO FINANCIAL TOOLS AND SERVICES**

Regarding the leverage of financial resources, when talking about companies based on BioTrade, access to financing is an especially key aspect, since it can limit their competitiveness by having restricted resources for innovation, process and infrastructure improvements, implementation of standards and obtaining seals, among others. This is why the Project influenced the creation of specific instruments and institutional agreements that resulted in financial support for the initiatives. In Ecuador, two lines of financing were developed for BioTrade initiatives (CORPEI Capital and PROCREDIT), thirty people from financial entities received training in BioTrade tools, and seventeen companies were trained on the financial services and instruments available (Banco de desarrollo de América Latina, 2015).

- **SUSTAINABILITY IN VALUE CHAINS**

Finally, the strengthening of value chains is essential to promote BioTrade as a valid and successful management model in Latin America, contributing to the conservation of resources, while generating social welfare. From the intervention of the Project, 216 pilot projects were involved, representing more than 29 thousand people linked to the value

chains, and more than 280 thousand hectares conserved and managed under sustainability practices. In Ecuador, the articulation of three entities that offer business development services for BioTrade companies was carried out; forty-two initiatives were trained in business development issues; twenty BioTrade initiatives were launched on the market through incubation programs; fifty-one pilot companies took part; 71,695 hectares were managed in a sustainable way; approximately 12,963 people benefited; and an average 85% compliance with the BioTrade Principles and Criteria was achieved (Banco de desarrollo de América Latina, 2015).

## 2.5 Statistics related to BioTrade projects in Ecuador.

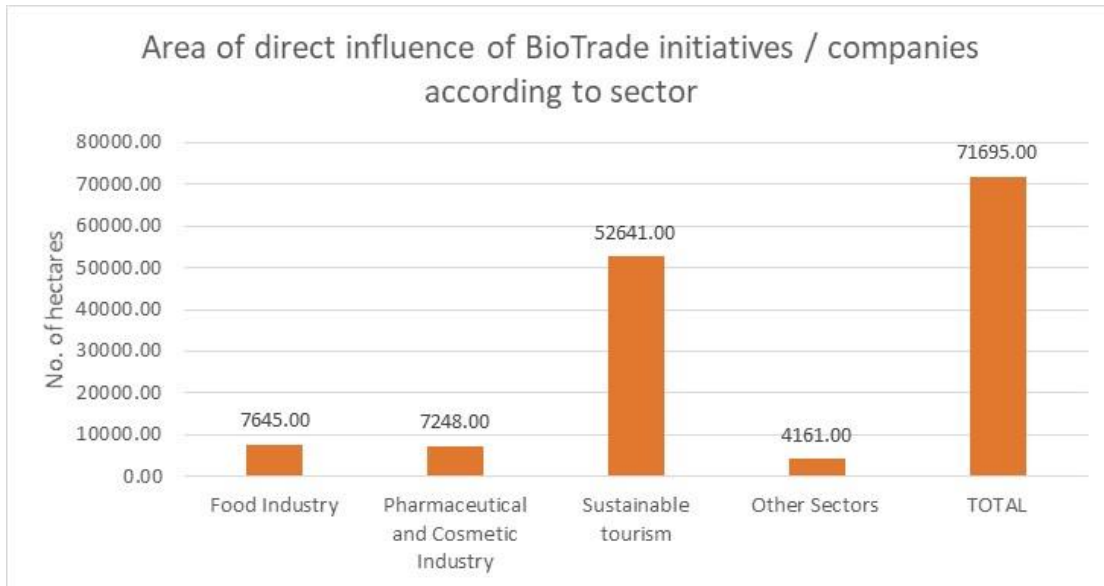
In relation to the projects carried out within Ecuador, with special emphasis on the Andean BioTrade Program 2010 - 2014, it is possible to highlight a variety of statistics that BioTrade has left within the country according to the Ministry of the Environment:

- **Number of BioTrade initiatives / companies by sector**

<b>Sector</b>	<b>No. of initiatives / companies by sector</b>
Natural ingredients and products for the Food Industry	16
Natural ingredients and products for the Pharmaceutical and Cosmetic Industry	9
Sustainable tourism	18
Other Sectors (Textile, Flowers, Bio-inputs, Handicrafts, etc.)	8
<b>TOTAL</b>	<b>51</b>

Table 1. No. Of BioTrade initiatives / companies according to the sector.

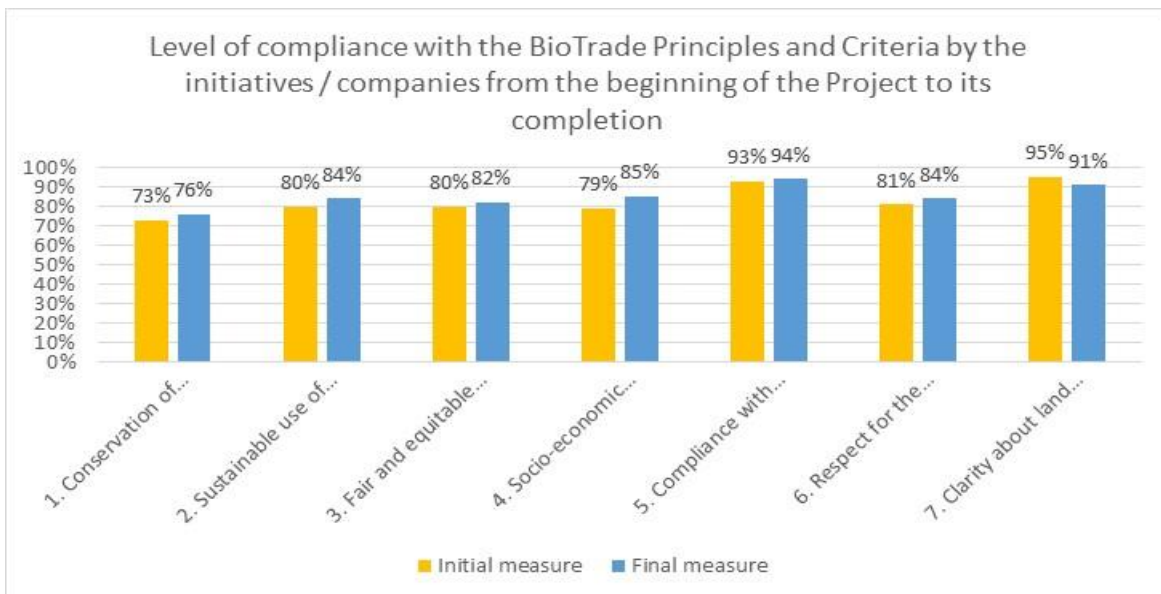
- **Area of direct influence of BioTrade initiatives / companies according to sector**



Graphic 1. Area of direct influence of BioTrade initiatives / companies according to the sector.

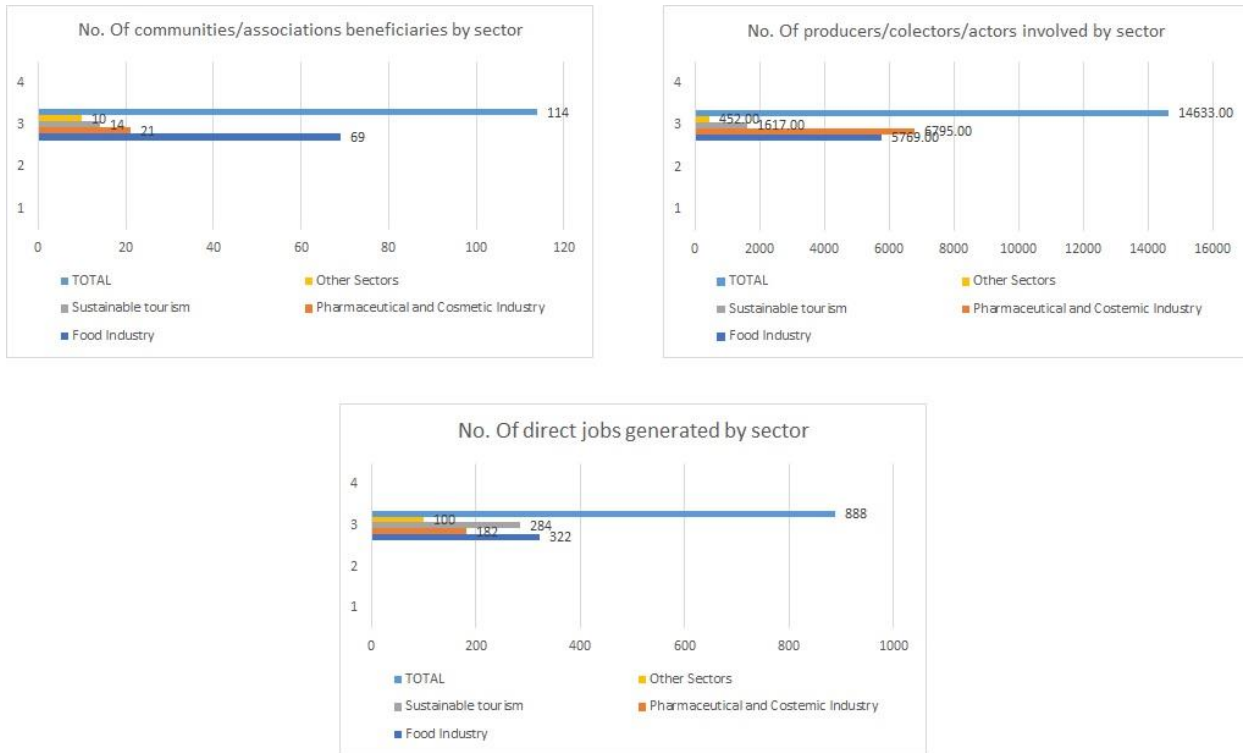
The BioTrade initiatives / companies linked to the Project covered an area of direct influence of 71,695 hectares, which were managed under criteria of environmental, social, and economic sustainability (Ministerio del Ambiente Ecuador, 2014).

- **Level of compliance with the BioTrade Principles and Criteria by the initiatives / companies from the beginning of the Project to its completion**



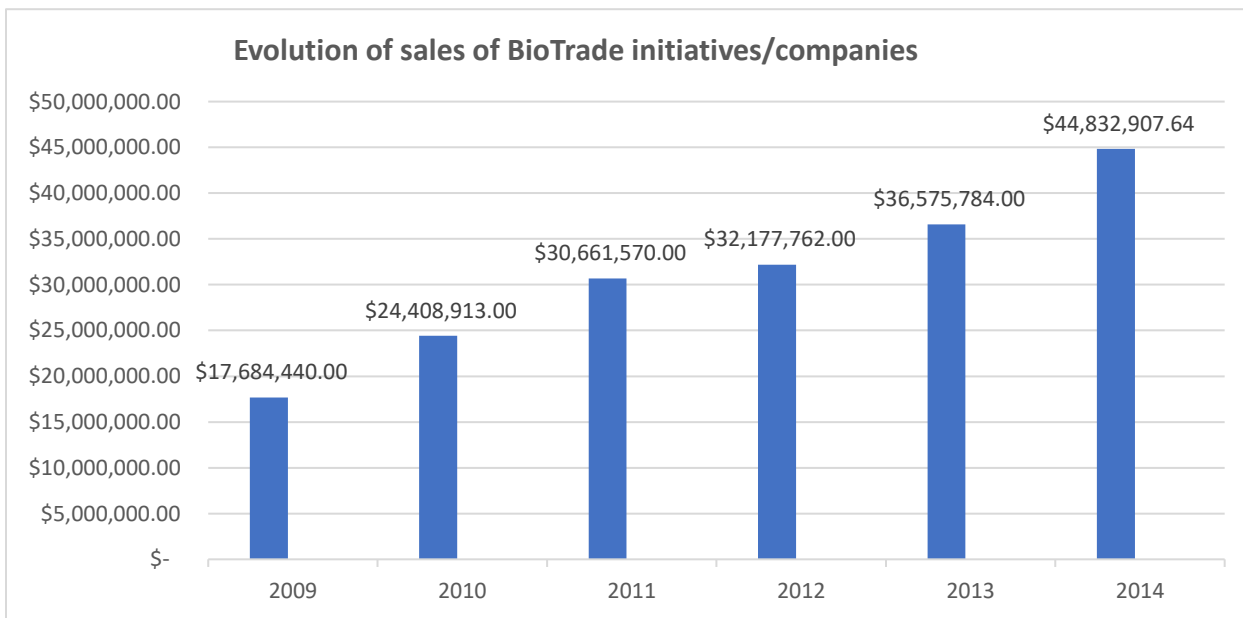
Graphic 2. Level of compliance with BioTrade Principles and Criteria.

- Actors and Beneficiaries of the BioTrade Initiatives according to the sector.



Graphic 2. No. Of actors and beneficiaries of BioTrade initiatives according to the sector.

- Evolution of sales of BioTrade initiatives / companies



Graphic 3. Evolution of annual sales of BioTrade initiatives / companies that were part of the Andean BioTrade project.



These sales statistics, like all the illustrated statistical data, are from the initiatives / companies that were part of the Andean BioTrade Project 2010 - 2014. And it is possible to observe that from 2009 to 2014 there was an annual growth in the sales of 38%, 26%, 5%, 14%, and 22% in relation to the previous year, respectively. Demonstrating the effectiveness of the project through the improvement of its sales (Ministerio del Ambiente Ecuador, 2014).

## **2.6 Progress within the field of BioTrade in Ecuador after the Andean BioTrade Program 2010-2014.**

Once the 2010-2014 Andean BioTrade Program was completed, although it is true that an initiative of such magnitude has not been carried out again within the country in terms of BioTrade, efforts to promote this alternative business model for internationalization have continued on a smaller scale. As an example of this, the following section will propose certain advances within the field of BioTrade in Ecuador after the aforementioned Program.

For example, in 2017 the work of the private scientific company “Wikiri” from San Rafael, near Quito, stood out. Which is a firm that is dedicated to the breeding of more than a dozen species of frogs, some of them endemic and with some risk of extinction in their natural state, to be exported to countries such as Canada, the United States, Japan, and others of Europe for a value of up to USD 600 per copy, which shows the great business potential. All this through methods of reproduction in laboratories, in order not to affect the wild population, which gives them the seal of "ethical" BioTrade against illegal trade. This is important since, as previously mentioned, Ecuador is part of CITES, which means that the capture and commercialization of wild animals is prohibited. Thus, by practicing a commercialization of this type, it seeks to face the illegal trafficking of species that is supplied by organizations that operate in megadiverse countries, and that put hundreds of species in danger of extinction (Agencia AFP, 2017).

Later in 2018, "Reverdecer Ecuador" program was launched in the city of Macas. Its main purpose being to depend to a lesser extent on the extractive industry and to give more importance to bio-enterprises by identifying products based on biodiversity in which people already have experience and have already launched them on the market, for later carry out an evaluation and identify how

to carry out an adequate dynamic and give support to the people who are already in these chains through State investment (El Comercio, 2018). This responds to the Third Objective of the National Development Plan 2017-2021, also mentioned, which is to "Guarantee the rights of nature for current and future generations." And for which BioTrade is taken as a possible tool to achieve it. Among some of the results obtained from the program, the insertion of the notion of Bioeconomy in the National Development Plan 2017-2021 can be highlighted; or the realization of the first vicuña "Chaccu" in Ecuador by the Chimborazo Wildlife Reserve, which marked a historical milestone in the country in relation to the sustainable management of the vicuña, since it benefited more than 30 communities in Tungurahua, Chimborazo and Bolívar who were able to use said fiber obtained from the shearing of these specimens for the manufacture of clothing, for later commercialization in international markets. Which contributed to making the quality of their work known internationally, as well as generating significant income (Ministerio del Ambiente Ecuador, 2018).

Moving to 2019, according to the Ministry of the Environment, there were approximately 400 to 500 bio-enterprises that supported the national economy. Which range from the export of biodiversity, as is the case of Wikiri; the production and sale of natural cosmetic products made by hand; even recycling itself, which is a form of business linked to BioTrade and which has up to 20,000 recycling families within Ecuador. All with a great need for support, and that is why within the country in that year an inter-institutional cooperation agreement was signed for the creation of the Center for the Promotion and Facilitation of Bio-enterprises "Bioemprende" (Granda, 2019).

Finally, by 2020, an important advance in BioTrade matters within Ecuador could be evidenced, with its institutionalization at the academic level. Proof of this is the inclusion of the "BioTrade" career in the curriculum of the Ikiam Amazon Regional University. This in order to train experts in key areas for the productive development of the region, where this type of undertaking has arisen, and it seeks to generate greater awareness in caring for the environment. Training professionals who not only have environmental knowledge, but who can take advantage of said knowledge in a sustainable way and generate economic benefits while promoting the care of biodiversity and social development of the region (El Comercio, 2020).

## **2.7 Conclusions of the chapter.**

Throughout this chapter, a series of analyzes was carried out with respect to various points. First, a review of the regulatory framework both at the international and national level regarding BioTrade was carried out, in order to establish the legal bases on which this alternative business model for internationalization can be established for its respective promotion and adoption, with special emphasis on the case of Ecuador, which is considered a megadiverse country and therefore has the ideal conditions for the launch of BioTrade.

Additionally, an analysis was carried out of the evolution that BioTrade has had within the country, from its insertion in various development plans, to the review of the two main BioTrade projects carried out within Ecuador. The National Sustainable BioTrade Program Ecuador 2001-2008 and the Andean BioTrade Program 2010-2014, and in relation to the latter, a series of statistics left from its application were presented. The purpose of this was to determine what its performance was and what level of effectiveness it had with respect to the BioTrade initiatives / companies within the country that were part of it.

Finally, a brief analysis was carried out of some initiatives related to BioTrade launched within the country after the completion of the Andean BioTrade Program 2010-2014, in order to establish how this alternative business model for internationalization has evolved and to determine whether there have been advances in recent years. It was possible to establish that, although there were limitations and difficulties, being the need for support and investment both public and private to achieve a better performance of this type of business one of the most important, the application of BioTrade and initiatives that support and promote bio-enterprises in general are possible. In fact, it is clear that BioTrade can become an innovative tool to achieve the long-awaited change in the productive matrix at the international and local level, as well as to achieve a development model that is sustainable, taking advantage of the large natural capital that Ecuador has and promoting the social inclusion of those communities whose habitats provide such capital.

## **CHAPTER 3: Analysis of practical cases regarding the application of the BioTrade model in a small or medium-sized company in Ecuador to determine its performance.**

### **3.1 Introduction.**

Once the analysis of the theoretical framework regarding BioTrade has been carried out, as well as what has been its respective evolution as a business model for internationalization both internationally and nationally, it is time to determine what the performance of this model has been. within the country, and for this purpose, this chapter will analyze practical cases regarding the application of the BioTrade model in a small or medium-sized company in Ecuador to determine its performance.

The first practical case to be analyzed is - Native cacao Strengthening business capacities of producers in Babahoyo (UNOCACE). Corresponding to the food sector.

The second practical case to be analyzed is - Natural cosmetics Strengthening of cosmetics value chains in the province of Morona Santiago. Corresponding to the cosmetic sector.

Both cases are from companies that were part of the **Andean BioTrade Program 2010-2014** previously exposed, and the purpose of this chapter is to determine what was their performance, learning and situation after the completion of the program. In order to establish the feasibility of adopting BioTrade as an alternative business model for internationalization within Ecuadorian companies.

### **3.2 Analysis of a practical case corresponding the food sector - Native cacao Strengthening business capacities of producers in Babahoyo (UNOCACE).**

As part of **Andean BioTrade Program 2010-2014** of which Ecuador took part, a series of initiatives / companies from various sectors of interest related to BioTrade participated. Within the food sector, specifically in the production and marketing of cocoa and its derivatives, the **Union of Cocoa Farmer Organizations (UNOCACE)** from Babahoyo, together with the Municipality of Babahoyo and the associations of producers of fine aroma cacao, were part of this. That is why, in order to establish whether their foray into the Program generated sustainable benefits over time after its completion and thus be able to determine whether the adoption and application of BioTrade as a business model for the internationalization of small and medium-sized companies in the country is feasible, in this section an analysis of the results that were produced from said participation will be carried out through a comparison between sales during and after the launch of the Andean BioTrade Program 2010-2014 by UNOCACE .

First, it is important to know what UNOCACE is. Its acronym refers to the Union of Cocoa Farmer Organizations, it is a representative integration organization of the Popular and Solidarity Economy legally created on February 2, 1999. It is currently made up of 20 associations that group 1,900 small cocoa producers from Guayas, Los Ríos, El Oro, Santa Elena, Cañar, Manabí, Esmeraldas, and Pichincha provinces who have 6,340 hectares of National Fine Aroma Cacao with Ecuadorian Organic Certification and European Organic Certification: USDA ORGANIC, BIO SUISSE, FAIR TRADE and SPP (UNOCACE, 2021).

Having established what UNOCACE is, it is important to recognize that one of the main reasons why the Andean BioTrade Program 2010-2014 focused on the cocoa sector of Ecuador is due to the fact that cocoa is the traditional Ecuadorian export product with longest history in the country's economy and involves approximately 100,000 families of agricultural producers. Which makes it a strategic sector within the BioTrade field that can be exploited and developed. Further, cocoa crops generate broad environmental benefits such as the protection of watersheds and water sources, support for the conservation of biodiversity, fixation and storage of carbon, the populations involved in cocoa production respond to a great cultural diversity, among others (Banco de Desarrollo de América Latina, 2014).

Additionally, Ecuador is among the top five countries that export cocoa worldwide (Trademap, 2021), and when it comes specifically to fine cocoa and aroma in the same way, it ranks as one of the main producers / exporters, so having a growing international demand for this product represents a great opportunity for the adoption of BioTrade as a model of business for internationalization.

Now, although Ecuador is one of the largest cocoa producers, only approximately 3% of the total export of this product is carried out directly by farmer organizations aligned with BioTrade and fair trade. To take advantage of these previously mentioned opportunities, a greater investment is required aimed at increasing the cultivation areas and improving the productivity of the existing plantations through the incorporation of good agricultural practices, and with it the exportable supply of cocoa and high-quality by-products with ecological and social certification. In order to reduce intermediation and high logistics costs, encourage the leadership and associativity of producers that allow an adequate price for the product, ensuring quality and economic, social, and environmental sustainability of the activity (Banco de Desarrollo de América Latina, 2014).

Having said this, entering into what was the performance within the Program by UNOCACE, as well as the lessons and challenges they faced. Below, several facts will be established to help illustrate some of the things that took place during the Program:

- 4, 157 hectares were managed under BioTrade Principles and Criteria (P&C).
- 1, 129 producers from seven associations were trained, applying organic practices, and sustainably managing their plots.
- Organic certification of 812 producers.
- Increase in sales between 2013 and 2014 of 25%.
- Increase in cocoa production between 2012 and 2014 under BioTrade P&C of 12.05%.
- Producers' income from cocoa sales increased by 10% to 15% between 2012 and 2014.
- 50 hectares of cocoa were renovated and / or technified (Banco de Desarrollo de América Latina, 2014).

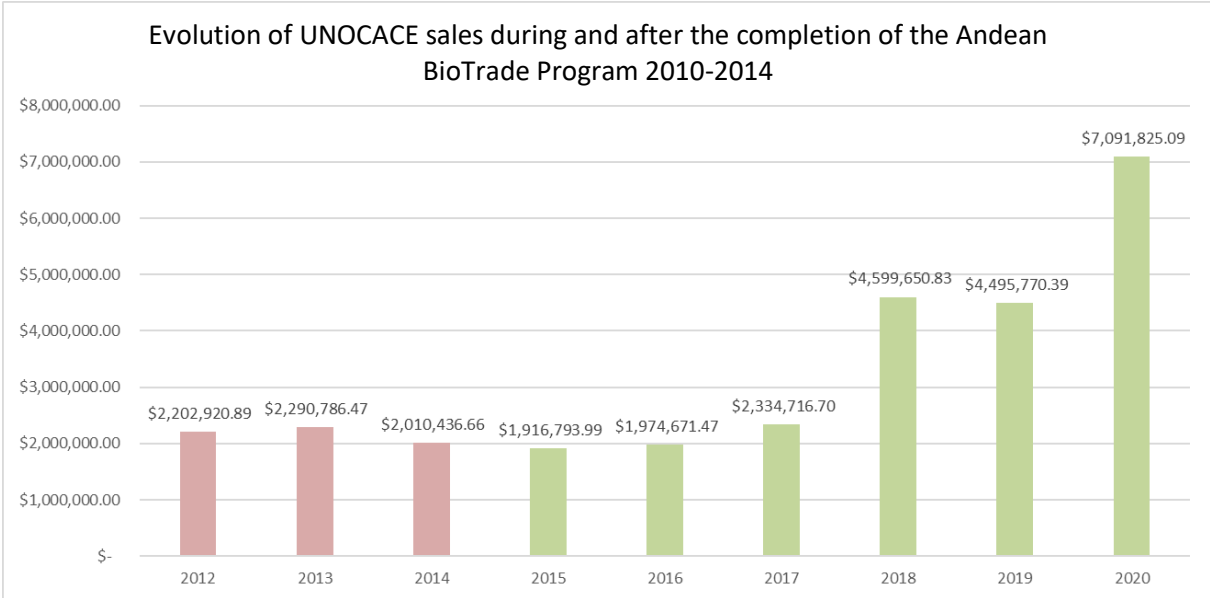
To achieve the previously proposed objectives, the 2010-2014 Andean BioTrade Program proposed the training of producer groups in the management of cocoa cultivation aligned with BioTrade standards; implement organic certification of producers and the final product that allows entry to new markets; and promote the expansion of markets through participation in international fairs to learn about trends and identify potential customers and new market niches (Banco de Desarrollo de América Latina, 2014).

Once the implementation of the proposed action plan was carried out, it was possible to determine some observations. For example, the diversification of clients through participation in international fairs allowed maintaining the supply and the sale price of cocoa stable, since they were able to acquire new clients ensuring the periodic and sustained sale of their products, as well as comparing the market price of similar products internationally to be able to determine their own with greater precision. Additionally, the scope of a higher added value was possible thanks to the diversification of the supply of cocoa derivatives that arose from the training processes, such as liquor, butter, powder, and toppings. All produced from cocoa surpluses, which meant a better use of the product, therefore, a decrease in waste, and a greater source of income. Similarly, the incorporation of the Municipality of Babahoyo contributed to the inclusion and institutionalization of the productive issue based on BioTrade within the local development agenda and compromised the will of public and private actors to achieve better technical support. Finally, the constant effort to improve at the organizational and business level through technical training, mainly corresponding to the implementation of organic practices, maintenance of cocoa productivity and conservation of the biodiversity of cocoa plots, have helped add value to production, since organic certifications have been obtained, which consequently allowed to establish a better price to their products and generated greater acceptance in international markets in which the "Organic" aspect has acquired great relevance and popularity (Banco de Desarrollo de América Latina, 2014).

Regarding the lessons learned for the future, first with regard to the supply side, it was determined that, to ensure the quality of production, proper maintenance of the plantations and compliance with organic practices, it is essential that the periodic training of producers and associations continue, with the aim that within the associations themselves it is possible to guide and prepare

technicians who subsequently continue to spread their knowledge. Likewise, under BioTrade criteria, it is extremely important to continue with the diversification of the supply of cocoa derivatives, in order to have greater opportunities to enter both national and international markets and generate greater income, not only from the sale of cocoa as a commodity. Second, regarding the issue of governance and politics, associativity among producers should continue to be promoted, since in this way a greater diversification of supply is possible, and thus achieve greater income generation for more people. And finally, with regard to the issue of biodiversity protection, it is important to continue promoting and adopting BioTrade principles within the cocoa chain, as this will not only add greater value to cocoa-derived products, but also will help to ensure the application of good practices related to the conservation of the soil and resources used, promoting the protection of ecosystems (Banco de Desarrollo de América Latina, 2014).

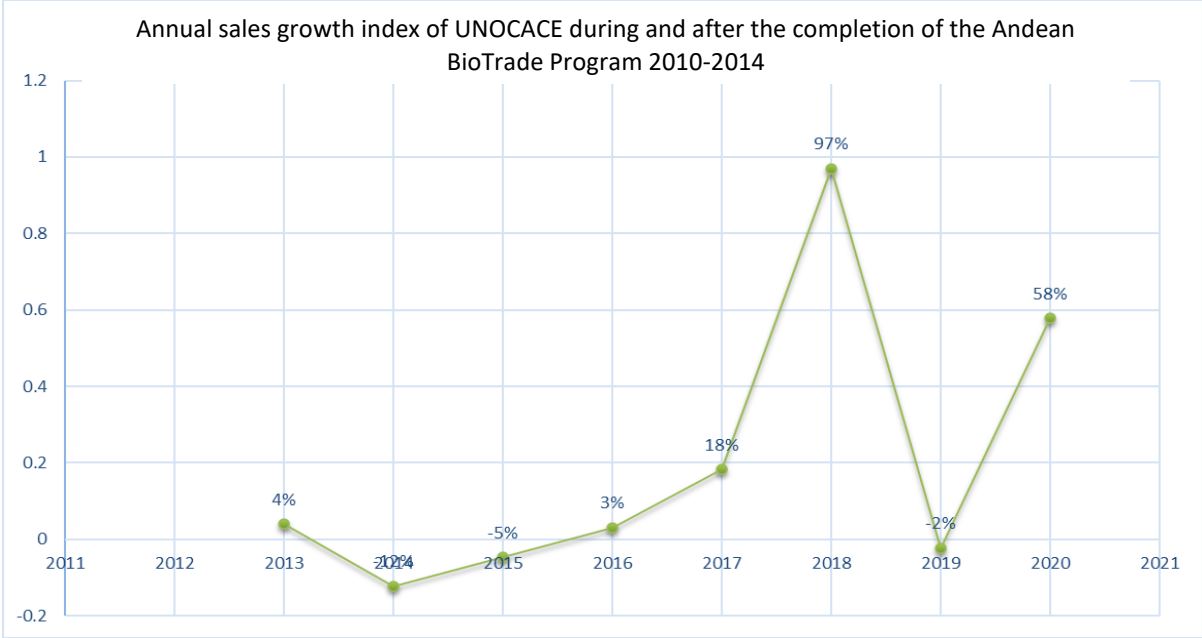
Finally, once the performance of UNOCACE has been analyzed within the Andean BioTrade Program 2010 - 2014 and its results, then the sales obtained during and after the completion of the Program will be given, in order to observe its evolution and determine if there has been an improvement in its sales:



Graphic 4. Evolution of UNOCACE sales during and after the completion of the Andean BioTrade Program 2010-2014. Source: Veritrade Business, 2021.



As can be seen, since the beginning of the Andean BioTrade Program 2010-2014, UNOCACE sales increased significantly, even after its completion, which suggests that what was implemented within the Program gave sustainable dividends over time.



Graphic 5. Annual sales growth index of UNOCACE during and after the completion of the Andean BioTrade Program 2010-2014. Source: Veritrade Business, 2021.

Additionally, to further illustrate the previous point, it can be observed that with the exception of 2014 in which there was a slight decrease in sales compared to the previous year, in the following years there was a constant growth of the annual sales index. And in general, taking into account the sales performance of UNOCACE from its participation in the Program until after it, it was determined that its average annual sales growth rate is 20%, which shows the effectiveness of the Program, during and after its realization (Veritrade Business, 2021).

### **3.3 Analysis of the practical case of the cosmetic sector - Natural cosmetics Strengthening of cosmetics value chains in the province of Morona Santiago.**

Following the same line of the previous case within the **Andean BioTrade Program 2010-2014**, but this time with respect to the cosmetic sector in which various initiatives participated, the case of "Natural cosmetics: Strengthening of cosmetics value chains in the province of Morona Santiago" stood out, whose central organization was the Chankuap Foundation: Resources for the future. In order to establish whether their incursion into the Program generated sustainable benefits over time after its completion and thus be able to determine whether the adoption and application of BioTrade as a business model for the internationalization of small and medium-sized companies in the country is feasible, in this section, an analysis of the results that were produced from said participation will be made, through a comparison between sales during and after the launch of the Andean BioTrade Program 2010-2014 by the Chankuap Foundation: Resources for the future.

First, it is necessary to establish what the organization is and what it does. "The Chankuap Foundation: Resources for the Future" is an organization that was born in 1996 as a response to the support requirements for community development in the Amazon region, specifically from the Achuar and Shuar communities. Their goal is to become a leading institution in the Amazon region in the provision of comprehensive social, productive, transformation and marketing development services, which aims to enhance the capacities and resources of priority care groups, valuing their identity and ensuring self-management, solidarity, and respect for nature. All through the support to priority groups of the Shuar, Achuar and mestizo population of the central Amazon, for the generation of income, sustainable management of forest resources and integrated family training, through work in value chains and accompaniment, complying with BioTrade principles, with quality, efficiency, and solidarity (Fundación Chankuap: Recursos para el futuro, 2021).

One of the reasons why the Andean BioTrade Program 2010-2014 within Ecuador focused on companies / initiatives related to the production and commercialization of natural cosmetic products is precisely because, within the strategic sectors for BioTrade, there is that of natural ingredients and finished products of the pharmaceutical and cosmetic industry. This is a strategic

point for BioTrade since the world market for natural cosmetics is constantly growing and popular, especially in markets with high purchasing power such as the United States and European countries in general, because there are more and more consumers concerned both about their health by wanting to consume / use products that do not contain synthetic substances, as well as about care and respect for the environment during their preparation. Consequently, in relation to this, the fact that "The Chankuap Foundation: Resources for the Future" is an organization that focuses its work on the communities of the Ecuadorian Amazon region, and therefore have access to a large number of biological resources and ancestral knowledge, represents a great competitive advantage within this industry. And in turn, for BioTrade it represents an opportunity for growth within the country.

Once this is established, it is time to delve into the performance of the "Chankuap Foundation: Resources for the future" within the case of "Strengthening cosmetics value chains in the Morona Santiago province", part of the Andean BioTrade Program 2010-2014. In which, based on their participation, the following results were achieved:

- The cultivation area of Amazonian species used for the production of cosmetic products such as: ishpink, ungurahua and guayusa increased by 11.5%. From 14,800 hectares when starting to 16,500 hectares when finishing.
- The integration of 60 new families into the productive system was encouraged. From 70 at the time of starting to 130 at the end.
- The Chankuap Foundation Collection and Transformation center was expanded in order to comply with Good Manufacturing Practices (GMP), as well as to consequently increase the collection and transformation capacity.
- Producers were trained in order to improve their ability to effectively manage the cultivation and collection of natural species.
- Within the Chankuap Foundation, and in relation to the cosmetic sector, the Ikiam brand was developed. A cosmetic line within which four products were created based on criteria of "green chemistry" and "organic cosmetology", which were two fluid creams: ungurahua-lemon verbena and ungurahua-ginger; and two nutritious creams: ungurahua-lemon verbena and ungurahua-turmeric.
- Compliance with 90% of the GMP was achieved.

- It was possible to introduce the new line of cosmetic products to international markets through participation in the “Natural Expo West” fairs in the USA, and “In Cosmetics” in France.
- Organic certification was obtained by ECOCERT, which is an organic certification organization, founded in France in 1991, and conducting inspections in more than 80 countries.
- Diagnostics were carried out for the distribution of benefits and the results were socialized with the Amazonian communities that were part of the production process, in order to reach an agreement regarding the fair price of the products.
- An increase in sales of approximately 20% was achieved at the end of the program compared to 2011 (Banco de Desarrollo de América Latina, 2014).

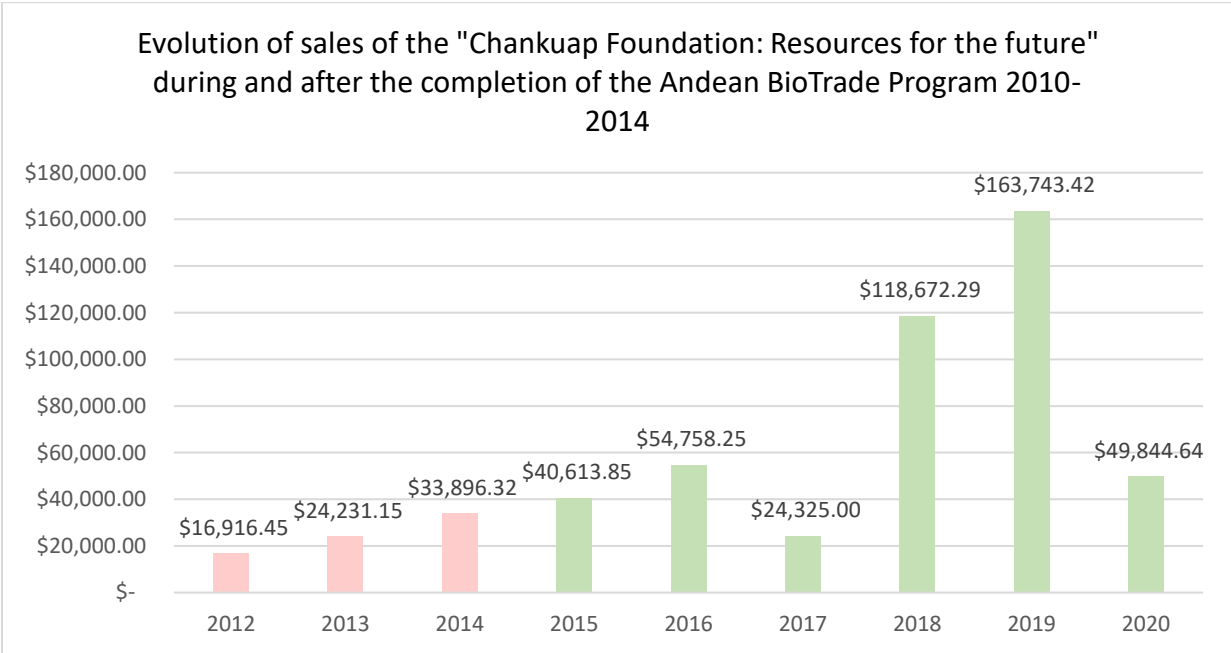
To follow up the previously shown statistics, and as previously mentioned, one of the reasons why the 2010-2014 Andean BioTrade Program focused on the cosmetic market is because it is an industry with a great margin of growth, especially when it comes to organic cosmetics. An example of this is the study carried out by the American consulting firm Grand View Research, who towards the end of 2013 determined that the global organic cosmetics market had billed close to \$ 9 billion, reaching up to 2018 in which more was billed. of \$ 13 billion, and with an estimate that between the years 2019 to 2025 the market would increase its sales by 9.4% (Grand View Research, 2021).

Within this context, it is evident that there is a demand for products with natural ingredients and with organic, exotic characteristics and that provide health benefits. Especially from Africa and the Amazon region of Latin America. Aspects that the Ikiam line complies with by the Chankuap Foundation who, as mentioned, since 2000 have been working with Achuar, Shuar and mestizo communities of the Morona Santiago and Pastaza provinces in the development of cosmetic ventures based on natural ingredients. Among which are mainly the blood of drago, guayusa, ishpink and ungurahua for the production of syrups, soaps, essential oils, creams, infusions, shampoo, among others. Being the communities who are primarily in charge of the collection and production processes; and later, the Chankuap Foundation is in charge of transforming the products in the collection center, adding value, and facilitating the commercialization processes and technical assistance for the producers (Banco de Desarrollo de América Latina, 2014).

Now, to achieve growth in the organic cosmetic market in Ecuador and with respect to the Chankuap Foundation, it was necessary at the time of the program and today it still is, the sustainable management of natural resources that serve as raw materials, to ensure their adequate exploitation and allow the regeneration of their natural cycles. Given this, the main work consisted of making management plans by species and communities. Additionally, the international organic cosmetic market required the initiative to produce 100% organic products with international standards; comply with good manufacturing practices; and have organic certifications. All this in order to facilitate the entry of the line to international markets. Within this context, the Andean BioTrade Program in conjunction with the Ministry of the Environment, supported the initiative not only to obtain the certifications, but also in terms of providing technical assistance to improve the use of native species, and the conservation and marketing strategies (Banco de Desarrollo de América Latina, 2014).

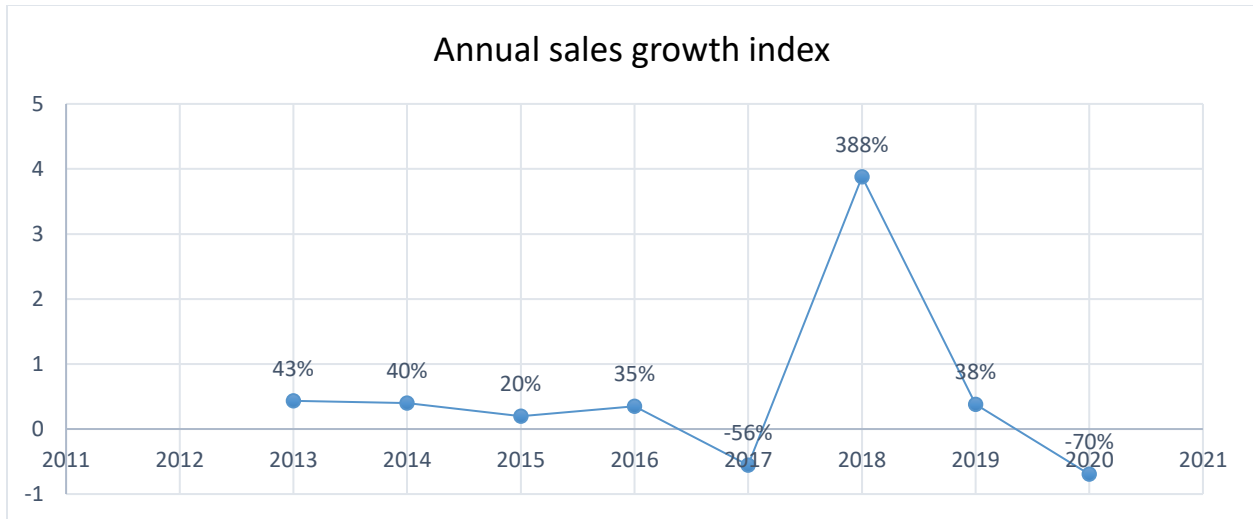
After carrying out the Program, within the future challenges and observations, it was determined that the active participation of producers in the collection of information for the preparation of management plans is essential for raising awareness within the communities about the benefits that generates the correct use of resources; the implementation of Good Collection Practices (BPR) is essential, especially when working with species of delicate and slow regeneration such as unguurahua for example, because in this way it is possible to maintain the balance of the natural environment from which they come, ensure quality and safety of the products subsequently elaborated and ensure the sustainability of said activity; further, the integration of native knowledge by the communities is essential to achieve the sustainability of the project as it contributes to the addition of the value of the products. Now, although these advances were made, one of the points for improvement established was that the implementation of management plans by species of more natural resources should be encouraged, since that is the only way to ensure the existence of the resources of the Amazon. Additionally, the realization and implementation of a monitoring plan that can be implemented by the producers themselves without the need for external intervention is necessary, as it would reduce costs and facilitate the internalization of good manufacturing and collection practices at the producer and collector levels respectively (Banco de Desarrollo de América Latina, 2014).

Finally, once the performance and activities carried out by the Chankuap Foundation: Resources for the Future have been analyzed in conjunction with the Ministry of the Environment, within the Andean BioTrade Program 2010-2014, it is time to visualize what their performance was during and subsequently upon completion of the Program:



Graphic 6. Evolution of sales of the "Chankuap Foundation: Resources for the future" during and after the completion of the Andean BioTrade Program 2010-2014. Source: Veritrade Business, 2021.

As can be seen, from the beginning of the Andean BioTrade Program 2010-2014, the sales of the "Chankuap Foundation: Resources for the future" were significantly increased, even after its completion, with the exception of the years 2017 and 2020, with the latter having a significant decline compared to 2019, due to the impacts suffered by the pandemic caused by COVID-19. Which mainly affected the markets for luxury products, such as those of the Ikiam cosmetic line.



Graphic 7. Annual sales growth index of "Chankuap Foundation: Resources for the future" during and after the completion of the Andean BioTrade Program 2010-2014. Source: Veritrade Business, 2021.

Additionally, as mentioned, it can be seen that with the exception of the years 2017 and 2020, in which there was a decrease in sales, in the other years there was a constant growth of the annual sales index. And in general, taking into account the sales performance of the "Chankuap Foundation: Resources for the future" from its participation in the Program until after it, it was determined that its average annual sales growth rate is 55 %, which demonstrates the effectiveness of the Program during and after its implementation (Veritrade Business, 2021).

### 3.4 BioTrade in the region. Situation of Ecuador with respect to neighboring countries.

As mentioned throughout this work, the UNCTAD BioTrade Initiative has been implemented throughout several countries around the world. Within the Andean region, countries such as Ecuador, Peru and Colombia were part of it. With respect to Ecuador, an analysis of its performance within the Program has been carried out, as well as an analysis of certain practical cases of companies / initiatives that were part of the food and organic cosmetics sector, respectively. Now, once this is done, in order to be able to compare which is the situation in which the country finds itself with respect to others in terms of BioTrade, in the next section a brief analysis will be carried out of what has been and is BioTrade in both Peru and Colombia.

To begin with, it is important to determine the scope of the Program in the respective countries. As could be observed in the previous chapter, compared to the case of Ecuador, which had 51 participating initiatives, in contrast to both Peru and Colombia the scope was much greater, with 65 and 100 initiatives respectively that took part. Regarding financing within the Program, there was a budget of \$ 14.4 million, of which 31% was destined for Ecuador, 31.1% for Peru, and 37.9% for Colombia. Regarding the institutionalization of BioTrade, it was necessary to create guidelines that were integrated into national policies and legal frameworks. For this, the development of documents in certain areas was carried out. Fourteen documents to face tariff and non-tariff barriers were developed, 3 in Ecuador, 4 in Peru, and 7 in Colombia; as well as 21 supporting documents to improve BioTrade regulatory processes, of which 5 were for Ecuador, 5 for Peru, and 11 for Colombia. Regarding the training of personnel in BioTrade matters, 1,359 people were trained, 189 professionals in Ecuador, 164 in Peru, and 1006 in Colombia. Entering what was the development of BioTrade products, 58 products were achieved, of which 10 were developed in Ecuador, 24 in Peru, and 24 in Colombia. Hand in hand with this, 21 sectoral market analyzes were carried out within the Program, 3 within Ecuador, 6 in Peru, and 12 in Colombia. Additionally, the program directly benefited 29,601 people, of which 12,963 were in Ecuador, 10,794 in Peru, and 5,844 in Colombia; approximately 282,569 hectares were managed with sustainability criteria, 71,695 within Ecuador, 31,273.4 within Peru, and 179,601 within Colombia, achieving compliance with the average BioTrade P&C of 85%, 73.40%, and 80.10% respectively. Finally, regarding the average sales level from the beginning to the end of the Program, in Ecuador there was an average growth in sales of 41.49% among the 51 participating initiatives, a 90% average growth in sales among the 65 initiatives in Peru, and a 63.35% average growth in sales among the 100 initiatives in Colombia (Banco de Desarrollo de América Latina, 2015).

When conducting this brief analysis of the scope and general results of the Andean BioTrade Program 2010-2014 among the three participating countries, it is evident at first glance that Ecuador lags behind in last place in the vast majority of aspects in relation to its neighboring countries, which denotes the delay that existed at that time, and still continues today, with respect to the issue of one hundred percent green businesses; However, it is also important to highlight that in relation to compliance with BioTrade P&C and the number of people benefited, it was within Ecuador that the best results were presented. Which in turn demonstrates the possible scope



and performance that this business model can achieve within the country if it is promoted and supported properly and to a greater extent.

However, as mentioned, by way of further comparing how BioTrade is within Ecuador in relation to its neighboring countries, next we will analyze the advances in BioTrade carried out in recent years by Peru and Colombia. First, in the case of Peru, since 2001, the country has opted for BioTrade as a key tool to achieve the joint objectives of biodiversity conservation and economic development at the national level. Thus, Peru incorporated the concept of BioTrade into national legislation through the Regulation of Law No. 26839, Law on Conservation and Sustainable Use of Biological Diversity, in which article 87 of said Regulation included a definition of BioTrade based on the provisions of UNCTAD. Additionally, in 2004 the National BioTrade Promotion Program (PNPB) was carried out, with which it was possible to lay the operational and institutional bases for the development of this initiative in the country. From it emerged in 2010 through Supreme Decree No. 09-2010-MINCETUR, the National Commission for the Promotion of BioTrade (CNPB), whose general objective is to achieve the institutional consolidation of the National BioTrade Program of Peru, in order to create an environment favorable for their development (COMISIÓN NACIONAL DE PROMOCIÓN DEL BIOCOMERCIO-CNPB, 2016). As of the culmination of the Andean BioTrade Program 2010-2014, the structuring of the National Strategy for Biological Diversity to 2021 (ENDB) took place, in conjunction with its Action Plan for the 2014-2018 period, whose objective is to achieve that "By 2021, Peru conserve and rationally use its mega-biodiversity, revaluing the associated traditional knowledge to satisfy the basic needs and well-being of current and future generations within the framework of an inclusive and competitive sustainable development " (Ministerio del ambiente Perú, 2014). Additionally, in 2016, as a result of joint work between the Minam and the National Commission for the Promotion of BioTrade, the National BioTrade Strategy and an Action Plan for 2025 were developed, which includes policies and standards for the promotion and implementation of BioTrade activities, and within which, according to data from the Minam and the Commission for the Promotion of Peru for Exports and Tourism (Promperú), towards the year 2018 has generated that the sales of Peruvian products derived from natural foods and native medicinal and aromatic plants were around 460 million dollars annually in the United States for instance (Andina, 2018). With respect to the present year, the approval of the "Updated Action Plan of the National

Strategy for Biological Diversity to 2021” was carried out, based on which certain goals that are sought to be achieved in terms of BioTrade were determined, among which it highlights that by the end of 2021, the following objectives are expected to be reached: having approved 24 Regional Exporting Strategic Plans (PERX) that contribute to the promotion of bio-enterprises; have carried out training sessions for the development of competitive eco-businesses and bio-enterprises; have increased by 10% the number of verified companies that comply with the principles and criteria of BioTrade; have identified and promoted at least 100 bio and eco-businesses, considering as far as possible the BioTrade approach, whose evolution with respect to this point has been 89 (2014), 89 (2015), 92 (2016), 107 (2017) and 110 (2018) respectively; among others (El Peruano, 2021). Moving forward in recent years, the Ministry of the Environment (Minam), through the General Director of Economy and Environmental Financing Luis Merino, has declared that in the face of the global crisis that humanity is going through, in a certain way it forces us to think about a new, more sustainable, inclusive, and resilient economy, and that, in this perspective, eco and bio-enterprises constitute a valuable opportunity to help reactivate the economy. Highlighting the work that Minam develops, through virtual workshops such as "Export opportunities for sustainable products based on biodiversity" in which Merino participated, and in which he stated that from Minam a cycle of virtual conferences is being developed for address the challenges that these ventures must face, while highlighting the tools that are available. For instance, the catalog of Eco and Bio-enterprises of the Minam, which Peru has (Andina, 2020). These are some examples that corroborate the efforts of Peru to contribute to the sustainable development and proper use of its biological diversity, as well as to contribute to the national environmental, social, and economic development through BioTrade, to ensure the improvement of the health and quality of life of present and future generations.

On the other hand, in the case of Colombia, since the culmination of the Andean BioTrade Program 2010 – 2014, as well as in previous years, several significant advances have been made in this area. For example, since 2006, due to the growing presence of entities wishing to adopt a BioTrade model, the "Colombia BioTrade Fund" was created. An independent non-profit entity financed with resources from the Global Environment Facility - GEF through the World Bank and the cooperation of the Embassy of the Kingdom of the Netherlands. With the aim of contributing to the conservation and sustainable use of biodiversity, providing financial credit services, and

investment capital, to companies dedicated to the processing and commercialization of goods and services derived from native biodiversity, under environmental, social, and economic sustainability criteria (encolombia, 2012). In 2010, the Ministry of the Environment and Sustainable Development of Colombia aimed to develop strategies in order to change the extractivist production culture towards a culture of consumption and sustainable productive transformation within the country. Based on this, the "National Green Business Plan" was developed, which seeks to enhance comparative environmental advantages in each of the regions to allow the environment to be an active variable in the country's competitiveness. This was carried out with the help of the Green and Sustainable Business Office of the Ministry of Environment and Sustainable Development, who has committed to promoting both the supply and demand of these businesses that, as their name indicates, contemplate economic activities. in which goods or services that generate positive environmental impacts are offered (Ministerio del Ambiente y Desarrollo Sostenible de Colombia, 2014). To illustrate this, for example, today the Green and Sustainable Business Office has verified 2,581 green businesses in the national territory, which translates to 30,661 reported jobs. 41.2% of these are for women (Alarcón, 2021).

Additionally, and based on the efforts of the "National Green Business Plan", development was carried out of the "National Sustainable BioTrade Program 2014-2024", which is part of the aforementioned Plan, as a another strategy to take advantage of the country's biodiversity, with the challenge of contributing to the generation of wealth and opportunities (poverty reduction) especially for the rural population, while contributing to the conservation of Colombian biodiversity, through sustainable businesses. The purpose of this program is to guide the actions of the actors and organizations of the biodiversity value chain and overcome the multiple obstacles identified for the growth of BioTrade in Colombia. In particular, it focuses on:

- 1.** The development of regulatory frameworks conducive to BioTrade
- 2.** Strengthening biodiversity value chains and BioTrade institutions in Colombia
- 3.** Facilitate access to regional, national, and international markets, as well as obtaining environmental sustainability certifications for BioTrade products and services
- 4.** Promote research, use and transfer of technologies and innovations for the sustainable use of biodiversity.

5. Facilitate access to financing by BioTrade companies and encourage their development based on economic incentives
6. Facilitate access to market and product information by all BioTrade actors
7. Support the process of monitoring and evaluation of biodiversity resources necessary for decision-making on sustainable use (Ministerio del Ambiente y Desarrollo Sostenible de Colombia, 2014).

Finally, one more example of the efforts implemented in Colombia to promote and adopt alternative business models for internationalization, such as BioTrade, is the “Bioexpo Colombia” initiative. This is the largest fair in the country, and in Latin America, where you can find the supply and demand for green goods and services. This scenario offers the possibility of identifying sustainable commercial options at the international, national, and regional levels that contribute to the improvement of the environmental quality of the country. It also seeks to promote the exchange of experiences between companies, buyers, and citizens in general to promote and establish bio-enterprises in Colombia. At the end of 2019, the VIII edition of "Bioexpo Colombia" was held, which consolidated more than 25,000 visitors who enjoyed the exhibition of 398 green businesses with environmentally friendly products and services. And whose sales from its business rounds reached the figure of more than 3,570 million pesos. And in which the support from the European Union regarding the development of green businesses in the country was announced by announcing the disbursement of 19,000 million pesos for environmental programs of the Ministry of Environment and Sustainable Development (bioExpo Colombia, 2019).

The objective of this section has not been to carry out a detailed analysis of all the plans related to BioTrade and its promotion within the neighboring countries of Peru and Colombia, but rather briefly and concisely to illustrate what progress has been achieved in the matter of this alternative business model for internationalization within these countries. And clearly it can be determined that both Peru and Colombia are in more advanced stages and have a better structure in contrast to Ecuador. This shows that although the Andean BioTrade Program 2010-2014 could achieve important advances within the country, the efforts to continue its development later have lagged behind in comparison with the participating neighboring countries who, with the help and active participation of the respective Ministries of the Environment among other actors, have managed

to further institutionalize BioTrade within their markets, generating greater promotion and acceptance of this kind of alternative business model for internationalization.

### **3.5 Conclusions of the chapter.**

Within this chapter it was possible to carry out an analysis of two practical cases of initiatives / companies within Ecuador that were part of the Andean BioTrade Program 2010-2014, the Union of Cocoa Farmers Organizations (UNOCACE) within the food sector, and the case of the Chankuap Foundation: Resources for the future within the cosmetic sector. It was possible to establish what their performance was during and after the completion of said Program. Based on the data referring to sales by both initiatives / companies, it was determined that their foray into the Program generated improvements in their performance, which demonstrates the effectiveness of the Program and the viability of BioTrade as a business model for the internationalization.

However, a comparison was subsequently made between the neighboring countries of Peru and Colombia, who were also participants in the Andean BioTrade Program 2010-2014, with respect to the advances in BioTrade achieved, respectively. It was possible to show that although with the Andean BioTrade Program 2010-2014 important advances could be made within Ecuador, both Peru and Colombia historically and currently are in more advanced stages and have a better structuring of BioTrade. These countries, with the help and active participation of the respective Ministries of the Environment and other actors, have managed to further institutionalize BioTrade within their markets, generating greater promotion and acceptance of this kind of alternative business model for internationalization. Which leads to the conclusion that within Ecuador, efforts to establish BioTrade as an alternative business model for internationalization still have a long way to go, both at the public and private levels. Recognizing at all times the fact that the conditions for this to be achieved are ideal within Ecuador, being one of the few countries in the world to be classified as megadiverse, BioTrade can and should be promoted and applied at a higher level.

## CHAPTER 4: Conclusions and recommendations

### 4.1 Conclusions.

After the completion of this degree work on the analysis of BioTrade as an alternative business model for internationalization within Ecuador, it is possible to conclude that its application within the country is feasible. Data corresponding to sales by the companies analyzed, as well as the data generated from the Andean BioTrade Program 2010-2014 on the performance and compliance with the P&C of BioTrade within the country demonstrate this.

BioTrade, being an alternative business model to those commonly practiced, not only in Ecuador but in most of the world, has great potential and room for growth. It is a model that, as its definition establishes, revolves around the promotion of trade and investment in products and services derived from biodiversity, under criteria of environmental, social, and economic sustainability. Which responds to the needs that arise today with respect to the critical state in which humanity and planet Earth find themselves. Efforts by the international community have been launched in order to seek a change in the world production matrix that is based on extractivist practices, towards a new model that is more friendly to the environment. Due to this, various treaties have been developed on environmental protection such as the Convention on Biological Diversity Sustainable Development Goals (ODS), the United Nations Framework Convention on Climate Change, the United Nations Conference on Trade and Development, among others. All in order to seek alternatives and generate action plans for the protection of the environment, without neglecting the economic aspects of course. And it is precisely there where BioTrade can play a fundamental role, as it has the potential to be used as a tool to achieve these objectives.

Ecuador, being one of the few countries considered to be “megadiverse”, has a vast number of natural resources at its disposal, most of which are used in an irresponsible and excessive manner. With BioTrade this may change, as it seeks to give a sustainable use of these resources that allows their permanence and regeneration to meet the needs of present and future generations. As well as promoting the integration of native communities who normally have access to said biological diversity so that they can share their knowledge, help in the protection of these and obtain benefits for it.

## 4.2 Recommendations.

However, while the BioTrade has presented important advances within Ecuador and has great potential to be successful, one of the most important and fundamental aspects is that it must be promoted and promoted in the correct way. It is definitely one of the main challenges within the country, and for that reason the following recommendations are made:

- More time and resources must be allocated by the state body in charge of environmental issues in the country, in this case the Ministry of the Environment and its respective branches, in promoting BioTrade as an alternative model for the internationalization of local companies.
- To seek the creation of strategic alliances with private actors is important, such as CORPEI was during the Andean BioTrade Program 2010-2014, that provide assistance in the same way with respect to the promotion, implementation, and subsequent control of BioTrade in the country.
- That its adoption be encouraged through “competitions”, as is done in other countries, in order to motivate small and medium-sized companies to change their business model.
- To create platforms with international reach for those companies that implement BioTrade, such as the case of “Bioexpo” in Colombia, to facilitate their insertion in international markets and to be able to generate strategic alliances more easily.
- That access to financial resources be facilitated to those small and medium-sized companies based on BioTrade within the country. Offering better conditions compared to companies with traditional models. All in order to promote the change from an extractivist productive matrix with an excessive use of natural resources, to an eco-friendly and inclusive one such as BioTrade.

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