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**The Role of International Cooperation in the
Preservation and Conservation of the Ecuadorian
Amazon. Case Study Bosque Medicinal.**

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Dedication

To the Pachamama, for giving us life.

To the indigenous communities present in the Ecuadorian Amazon, for being those who, through their knowledge, traditions, and worldview, defend life in all its forms.

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To my sister Paula, for always lightening loads with a laugh.

To my nephew Julián, who has taught me the beauty of simplicity.

To my friends, for giving me more love than I could ask for.

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Abstract

The following thesis work studied the case of “Bosque Medicinal” foundation as a proposal for international cooperation in environmental management. This research sought to determine if "Bosque Medicinal" responded to the environmental management needs of the Ecuadorian Amazon. For that purpose, the different existing international cooperation theories were presented; then, information was presented on the emergence of new actors in the international system and their interference in environmental issues. Next, a general perspective of the environment was approached to know its main definitions and the crisis in which it was immersed; and then, it was made an analysis of the environmental crisis in the Ecuadorian Amazon. Finally, an analysis was made on "Bosque Medicinal" and its work on conservation matters to determine whether or not the internationalization of the project is possible.

Key words: environment, international trades, international cooperation, Amazon, conservation, biodiversity, anthropocentrism, biocentrism, Bosque Medicinal.

Introduction

The global environmental crisis has been one of the biggest problems that the planet and the different forms of life on it have faced and is currently facing, framing its main causes in the constant search for progress and development at the cost of the destruction and appropriation of ecosystems and its natural resources. This crisis has also made its way more quickly due to the universal paradigm that excludes human beings from nature, justifying the excessive use of man over the environment. Over the years, a greater understanding of the global environmental crisis and the ecosystem resources that nature offers have been formed, a greater margin of action has been developed, extensive academic contributions have been made, and different positions have been raised. However, even with these advances, today the environment continues to be a subject of an accelerated overexploitation, giving way to the loss, sometimes irreparable, of the biodiversity present throughout the planet. For this reason, it is essential to mention one of the most mega diverse places in the world: the Ecuadorian Amazon. Taking into account that the world has been a place in which growth and development predominate over life, the Amazon has not been but one of the first territories to perceive the effects of environmental devastation. This territory, as a whole, and particularly in the Ecuadorian case, has been affected for different reasons, from oil and mining exploitation for economic purposes, to the indiscriminate deforestation of its extensive forests, culminating in the loss of flora and fauna; affecting the life of the indigenous communities present there. Given this, there have been several responses, not always effective, at the national and international level, both from the countries and from other international actors, to direct a collective effort towards the generation of international environmental cooperation that, through institutions, norms and rules, respond to the urgent protection of territories as essential as the Amazon. The following work will detail the characteristics of the environmental crisis at a historical level; likewise, this work pretends to exalt the benefits of the Amazon and analyze what has been the role of the Ecuadorian State and, mainly, of international cooperation in its conservation. Finally, it seeks to determine if the “Bosque Medicinal” foundation, as a case study, responds to the current needs of the Ecuadorian Amazon and if it has the necessary tools and resources to become international. To fulfill this objective, in the first instance the different theories of international cooperation with an environmental focus will be analyzed, in order to understand the relationships that have been born between the States with the purpose of assuming an active and responsible role before the transcendental and accelerated environmental crisis. In addition, the information related to the emergence of new actors in the international system will be

presented and the different positions that each one of them has with respect to environmental care will be indicated. Once these positions have been described, the development and interference of these actors on the international scene, it will be determined which have been the main treaties and agreements celebrated since their meeting, and which have marked a milestone in the preservation and conservation of nature. In a second part, a general perspective of the environment will be approached to know its main definitions and the different positions that sustain them, as well as the environmental crisis will be approached from a point of view that makes visible the importance of ecosystem services and the need to protect them. In a third part, going from the international to the national scope, it will talk about the environmental management of the Ecuadorian Amazon and the role of the State within it, in order to know the reasons that have triggered a crisis of great magnitude in this territory, affecting the communities and ecosystems present there. Within this point, the emblematic projects that have been born as an initiative of the Ministry of Environment, Water and Ecological Transition will be mentioned as the main environmental authority of Ecuador to know which areas have been and are prioritized in the execution of their powers. In short, it will be announced what the “Bosque Medicinal” foundation is about, its history, objectives and structure. In the same way, interviews will be conducted with the co-founders of “Bosque Medicinal” to obtain first-hand information on the experience of the construction of the project and to obtain answers on the questions surrounding it, also, these has been made by the interview coder “Atlas. 2Ti.” Subsequently, through the use of pertinent indicators, the response that “Medicinal Forest” has given to its objectives and the needs of the territory where it is located will be analyzed, both with regard to the preservation and conservation of the Ecuadorian Amazon, as well as the current health crisis. Finally, once the information regarding the goals achieved by “Bosque Medicinal” has been compiled, it will be analyzed whether or not the internationalization of the project is possible.

CHAPTER 1

THEORETICAL FRAMEWORK

1.1 Theories of international cooperation

In the international field, there are three main theories of international cooperation that have evolved over time and have adapted to the current international system, these are Realism, Liberalism, and Marxism. Despite being three main theories, one of them stands out in the current international system: Liberalism, and this is because it favors, creates, and supports cooperation in any of its areas; however, to better understand them all are explained in the following paragraphs:

1.1.1 Realism

The Realism within the realistic school of international relations maintains that the only actors within the international system are the Nation-States, which is to say, that there is no supreme power over them, in such a way that other actors in the international arena do not have much relevance to them. This is because the specific theory says that the problems within the world are due to three reasons: the first, corresponds to the desire for internal and external power; the second, national interests; and finally, the third, anarchy in the international system (Chiani et al., 2009). In addition, realism establishes that countries coexist at an international level characterized by the power struggle between them. It means that power is based on their own interests to satisfy their needs as nations. This egocentric character of the countries arises from the insatiable desire of mankind to obtain more and more power, reflected by nations' rulers in the foreign policies they establish. In the end, power will never be distributed equitably as there will always be powers that will predominate or influence others. Therefore, within this theory, conflicts can only be resolved through diplomacy, that is, reaching agreements through alliances (idem).

One of the important premises within realism is the national interest, which is why environmental issues based on this theory argue that, in relation to the environment, natural resources do not become more than material attributes of power for the State. In this way, they are clearly connected with the national interest, since the State policy is interested in

maximizing its benefits, that is, under the logic of this theory, having resources increases the power of the State, therefore they increase its security by decreasing external threats. Together with this idea, the geopolitical vision of natural resources is born, where the appropriation of water, land, minerals, and hydrocarbons becomes part of a strategic policy. Additionally, realism defines and separates high and low importance issues where the environmental issue is a low priority issue for them (Bueno, 2011)

1.1.2 Liberalism

Liberalism is an alternative theory to that of realism, it experienced a boom after the two world wars since it was about experimenting with new possibilities or paths towards an international order that is peaceful, governed by law, and, mainly, may it be a world where international cooperation can exist and take place among all countries. That is why, after the end of the Cold War, the creation of the new world order takes place, which is structured on the basis of some essential elements for the international system such as freedom, rationality, human rights, democracy, and the limits of power (Hernández, 2005). This structure is based on the fact that liberals consider that human rights will only be protected within the framework of a democratic state and on a more international level since they must be subject to the will agreed upon by the states as a whole. Within Liberalism, as mentioned above, it is possible to idealize a world of international cooperation between all the countries of the world, where anarchy means harmony and reciprocal work will be done so that everyone benefits in one way or another (Pauselli, 2013).

In addition, within liberal currents, such as those mentioned before, cooperation between States is sought in any field or topics of interest, so achieving cooperation in the environmental field is less complex and complicated, since States are required to, they want to be part of a treaty or an international organization or, failing that, they have the initiative to create internal policies that adjust to major environmental problems and thus cooperate in some way. In addition, this theory, due to its positive vision regarding human nature, as opposed to realism, not only internally but also externally, easily promotes a link with the environment (Bueno, 2011). On the other hand, it is important to mention that liberal theory recognizes the arrival of new actors in the international system so that international organizations or non-governmental organizations for the environment are accepted as such by the will of the States, that is, achieving cooperation in order to protect the environment is easier to achieve compared

to realism, where international organizations do not have much relevance due to the thought of an anarchic system.

1.1.3 Marxism

In relation to Marxism, it is worth mentioning that there is no theory as such that defines international relations; however, over the years this theory and its thinking about international society in the global system have been related. In this way, according to Pauselli (2013), the Marxist tradition in international relations has a high degree of impact in terms of the differentiation between the north-south based on inequality or dependence within the international system. To understand Marx's theory, it is argued that international relations are still based on the distinction of classes, that is, what can be explained in an internal way, extend it, and pass it to the external plane, so that the day that the distinction of Classes nationally disappear will also disappear internationally. For all that, the most remarkable thing about Marxist studies in international relations is that international society is the main actor in the international system and not the State. In itself, it is an analysis of global society, focusing as such on the theory of social change (Pauselli, 2013).

Nature has been conceived as a set of resources to be used by the State, so in Marxism in terms of the environment it is related to an ecological economy where it does not blame capitalism to a greater degree, but rather development; Therefore, as such, it proposes to establish new types of relationship between the economy and nature because the economic indices as such do not reflect the negative impacts caused on nature, that is, the creation of a capitalism with sustainable development. It is important to highlight that this theory does not try to produce things in a smaller or greater quantity, but rather to make a rational use of natural resources based on primordial needs (León, 2019).

1.1.4 Social constructivism

Constructivism has as one of its branches social constructivism, which is a theory that tries to interpret and explain what human knowledge is (Payer, UNAM, 2005). To better understand it, social constructivism is nothing more than the construction of knowledge based on the understanding of the experiences of the environment in which we live and the culture in which

we develop (Jackson et al., 2006). Additionally, this theory deals with different premises such as:

- **Reality:** it is one that is built through human activity based on society, so that reality is not discovered if there is no prior social invention.
- **Knowledge:** it is that culturally and socially constructed human product, since humans create meaning through interaction with the society in which they live.
- **Learning:** it is that social process that occurs as a result of the social activities carried out by individuals (idem).

Based on these premises, it is argued that learning and knowledge are active since individuals tend to learn something new every day due to the experiences they have, so the new information is assimilated and put into practice depending on the environment in which they live (Payer, 2005). According to Payer (2005), the same desire to know something new is known as psychological constructivism, since this desire makes people want to find new explanations for everything that surrounds us. This implies that the information that is found can generate doubts about schemes already established by default in society and that in addition to this, they argue and help to assimilate a new hypothesis, because in this way the human being changes their knowledge and beliefs to adjust to new contemporary realities.

Constructivism and the environmental issue are more related in the educational aspect since it questions whether knowledge can be built or discovered. For example, in the educational field, the teacher is usually the person capable of transmitting knowledge to students, but it is sought that they generate their own ideas and knowledge that are new and that are achieved through the assimilation of the investigated information (Ferreiro, 2004). The development of education in relation to the environmental issue has always been related to environmental problems and the social solutions that are given to them, but beyond that there is no evolution of educational models. With the educational model we mean that when we seek education on environmental issues, it is defined as informing, sensitizing, disseminating, sensitizing, informing, training and among other terms, but there is no clear, concise and concrete model that defines it (García et al., 2006).

The fact is that many of the professionals dedicated to environmental education continue to modify ideas and behaviors that they obtain through the investigated information and transmit it as absolute truths, limiting students to create their own conceptions, which does not

allow them to themselves create new solutions or paradigms for the environmental issue. In the end, the creation of theories without practices creates fallacies within the students, since there are two options: the first is that they overvalue the experience without seeking information that leads to other perspectives, or the second, the theory is transferred directly to action, while undermining practice because it is not given the value and time that it entails (idem). From this guideline, García and Cano (2006) argue that didactic spaces are needed that integrate both the theoretical part and the practice itself that is based on the attention, observation and investigation of the environment, since the didactic models provide instruments for the educational action, but as it was named, they also include the theory part where professional knowledge and the analysis of the construction processes established on the environment influence.

1.1.5 Green theory

According to Dyer (2018), in the year 1960 there was a global event known as the tragedy of communal goods that was nothing more than how human beings abused the shared resources such as water, land and fish. That is why in 1970 the First Conference of the United Nations was held to dialogue on the subject, giving green political parties and public policies for the year 1980. Finally, in 1990, recognizing the environment as an essential source that required attention, since the human practices developed until then had only significantly changed the global climate, triggering not only ecological problems but also security problems. This is how the green theory is born from an ecological thought where it speaks of the interests of nature instead of just speaking of the interests of people in nature. On the other hand, green theory is nothing more than a theory that belongs to critical theories, since they ask questions about us and the way we relate to nature; at the same time, it raises the question of what the limits of politics are in relation to it (Dyer, 2018).

Environmental problems in international relations have had a lot of influence due to international institutions and non-governmental organizations, however, the prevalence of competition between states does not help environmental cooperation and does not develop ecological thinking either. In general, environmental issues criticize the international framework established to this day that revolves around political, social, and economic structures of human relations, but what this theory seeks is nothing more than the balance between human and non-human environment (idem). Then, based on what has been described

before, it is defined that this theory has an ecocentric approach; the ecocentric approach bases its vision on ecocentrism, which is nothing more than a philosophy that opposes anthropocentrism, that is, centering its vision on the human being and instead of focusing its vision on nature. It should be emphasized that ecocentrism argues that there is no supremacy over creatures, therefore it denies the existing superiority of human beings over other species and nature itself; that is, this theory does not ignore any need or desire of the human being but rather puts them within a broader ecological perspective, in this sense, by prioritizing healthy ecosystems it also prioritizes the health and well-being of people (Tayyar et al., 2019).

The ecocentric perspective according to Dyer (2018), also tends to have a rejection of national and international politics since the establishment of borders does not go hand in hand with air or water pollution, or climate change itself, since that these problems do not respect borders or populations because at the end of the day human populations are still ecologically interconnected. This concern has occurred since the birth of nation-states with the Westphalian model and its concept of sovereignty that does not describe modern environmental problems, since to understand them, we first need an understanding of the global. These problems need global solutions and not solutions divided into parts by each state. For this reason, a political ecology is established as an alternative that allows political thought based on modern environmental circumstances and in a global way. To be more specific, the very fact of wanting to change economic political practices based on production, distribution and consumption does not represent more than environmental unsustainability and ignorance of the limits of nature (Dyer, 2018).

1.2 History of the relationship between States

International relations have gone through different stages over the years; however, International Relations must be taken into account as an economic, political and social link that occurs between two or more communities that become sovereign, autonomous and independent. In fact, it is believed that, based on this concept, international relations occurred since tribes or clans were formed, either with the signing of treaties such as those between the Greek states Sparta and Thebes, which until today are considered phenomena within the international system (Vázquez et al., n.d.).

To understand the international cooperation that States have come to have today, it is necessary to bear in mind that, over the years, there has not been a specific branch of history that describes the history of international relations as such, since it is the history of nations itself what forms the international history. Certainly, international relations arise with nation-states, especially with the Peace of Westphalia in 1648 (idem). But, if we have to consider milestones that are relevant within the international arena, the following stages that have been of great relevance within the international system can be determined:

1. First stage, between the seventeenth and eighteenth centuries, relations between states were established, mainly in Europe.
2. Second stage, elapsed from the 19th century to the First World War, where tensions between the States were installed.
3. Third stage, which occurred after the two World Wars and the Cold War, since the discourse of the international community became world history, because from that moment on international relations became a global issue.

Despite the above mentioned, a breakdown of some essential milestones can be made:

1.2.1 The Westphalian System

According to Rojas (2003), one can speak of relations between States at the international level based on ancient societies, such as those mentioned above; however, the discourse of the international is given with the conformation of the modern Nation-State and the establishment of the same in Europe between the 16th and 17th centuries. The Westphalian system arises due to the failure of the Medieval European project, which was made to form a universal empire in which there were only two results; the first, in which a state became powerful and dominated all the others creating a single empire; and in the second, where no State was so powerful as to fulfill this goal. This idea gave rise to a problem: how to achieve coexistence between States based on the absence of a supreme authority. Therefore, there is the system of balance of power in which it was sought to limit the ability of some states to dominate others based on conflicts (p. 155).

The Peace of Westphalia came to be the result of the Thirty Years' War, which was caused by Emperor Ferdinand II for his attempt to revive Catholic universality, suppress Protestantism,

and establish imperial rule over the princes of central Europe. As a solution, the Treaty of Westphalia ended the confrontation caused by religion and also granted sovereignty to the smaller states of central Europe, along with this, the emperor could not carry out activities such as: recruiting soldiers, collecting taxes, making laws, declaring war or ratify the terms of peace without the consent of the representatives of all the States that made up the Empire at that time (Rojas, 2003).

The Thirty Years' War brought with it some learnings at the international level; the first is that the religious choice of each country was respected, in fact, it was accepted that the church had no authority in the nation since the king was the supreme authority of the same. This first decision confirmed that the territory in the international system was a key requirement for making political decisions at the international level, due to the concept of the State established at that time; the second, the danger of having armies led to the formation and organization of national armies that were financed and commanded by the monarchs of each nation (ibid.).

Based on the decisions taken, modern States came to constitute the rupture of the universal religious principle, since it was replaced by the principle of national interest. Furthermore, the universal monarchy was displaced by the doctrine of the balance of power. As such, the Westphalian system considered the balance of power as a problem because within international relations, for theorists and analysts, particularly those of realist theory, this balance of power was the natural representation of international relations and was considered as the principle that governs the world order as such. To better understand it, Adam Smith, Montesquieu, and Madison believed that the balance of power was the forces that each state possessed and that they were forces left free to be used selfishly out of their own interest. It should be noted that this model was not a decision that was made between states but was the result of the states of Europe's quest for power. However, the fact that no State had the ability to dominate the others to form an empire led to the determination of an international order based on the balance of power (Rojas, 2003).

The Congress of Vienna of 1815 according to Rojas (2003), established for the first time an international order based on the balance of power. In this Congress was decided that the new European order would be based on the thought that it was essential to preserve those states that were crowned as legitimate, in order to eliminate movements of any kind, and ensure that the other states were ruled by rulers with equal ideas. Similarly, the Congress of Vienna not

only accepted the recourse of the use of force, but also sought to regulate international conduct through moral and political ties (p. 157).

The origin of a discourse on the international sphere made the modern nation-state the only actor in the international system. Sovereignty is a fundamental and very essential aspect within what a State is, in addition, it is what designates the power that it exercises both internally and externally. For this reason, the modern international system is made up of States whose main character is the fact of being sovereign. On the other hand, power and legitimacy became the bases of the international order during the nineteenth century, in the second half of the nineteenth century in Europe it was held that relations between nations would be governed by Realpolitik, which was nothing more than a try to respond to the challenges of domestic politics in a fragile and rapidly evolving environment without the need to appeal to repression (Núñez, 2019).

1.2.2 The international system becomes global

The two world wars altered the established principles that made up the order of the international system, in addition, a system of alliances emerged that only further corrupted the international system since technological changes only served for military strategy, as well as the fact that the Powers gave all their industrial service to the war. Thus, at the end of the First World War, it was considered that the international system was bankrupt and that it was no longer possible to guarantee the same order and stability, in fact, the challenge for political leaders was to find a principle that would not only rebuild international balance, but also avoid a Second World War.

For this reason, the idea of a world government was a solution since it would imply the participation of all States and through it, it was desired to implement peaceful mechanisms for the resolution of conflicts at the international level. According to Rojas (2003), this idea was born from President Woodrow Wilson, who wanted to create a universal organization, which later became the League of Nations (SDN). This organization wanted to maintain peace through collective security, that is, it was said that peace depended on democracy, so that all States should have the same moral standards as people, in such a way that especially the North Americans rebelled against the European system, as they believed that states should be judged

differently from individuals. In this way, the Americans discarded the concept of balance of power and established the practice based on Realpolitik as immoral (p. 158).

Proclaiming the breakdown of Old-World concepts, the idea of a world order was derived from the North American notion of the peaceful nature of man and the harmony of the world. After the First World War, Wilson exposed the protection of the international order based on peace, so that the new order would be based on collective security eliminating conflicts between States to avoid wars, in addition, it was expected that peace would not depend on power but of public opinion where democratic nations would be guarantors of it (Rojas, 2003).

It should be noted that there was a radical difference between the European and North American views; the international order, based on the European vision, gave its opinion on the selfish character of humans as an essential part of their nature, for which they were prone to creating wars; while the American vision was based on goodness as an essential part of human nature. The fact of establishing a world government was complex because each State put its national interests before the collective interests and none was willing to give up its self-defense to ideas of peace. This caused many States to think that the ideals promoted by the League of Nations and the Treaty of Versailles allowed the emergence of problems at the international level such as the rise of Hitler, Japanese expansionism, and the outbreak of World War II (idem).

In 1945 the creation of a new world order was still unanswered and another essay by the League of Nations on peaceful international life was not acceptable, so the creation of the United Nations was born as a necessity to regulate international life, for this, it was based on recognizing the power of each country to combine a principle of democracy and a realistic principle for crisis management at the international level, where the National Assembly and the Security Council were recognized respectively. In itself, it was based on an organization that maintained peace without renouncing the resource of war but that would be a subject regulated by the Security Council (Rojas, 2003).

Likewise, nuclear weapons changed the rules of the international scene by making it a fundamental objective to avoid war, which is why peace was paramount in the foreign policy of many powers. In the nuclear age, the Soviet Union and the United States had the tools to start a war, but the risks of starting it were catastrophic, representing not only a threat that

resulted in the extermination of humanity, but also the creation of war. total devastation. In the end, the objective of the new international system after the Cold War was based on nothing more than avoiding a nuclear holocaust (idem).

The end of the Cold War was a milestone for the international order as it led to great changes in social relations worldwide. It should be emphasized that the change in the international order was also caused by a well-known phenomenon today, which is globalization, since in recent years it has caused an increase in interdependence, giving rise to a global society. Consequently, according to Rojas (2003), in the history of the global, the idea of international relations that was raised with the Westphalian system has lost meaning over the years due to the following reasons:

1. As the difference between the external and the internal reduces in international social life, international politics becomes domestic and vice versa.
2. War as a primary objective to be resolved at the international level ends up disappearing as affairs between States.
3. The existence of new international actors and of which many do not need to declare their sovereign status as states normally would. The presence of another actor causes the state to lose its monopoly on the political community.
4. The difference between the outside and the inside of the State loses its essence in different current policies at the international level.

1.3 New actors in the contemporary international system.

To understand in a better way the contemporary international system, one must first understand what international society is. For this reason, it is argued that this exists when there is a group of States that share some interests or values, which leads to the constitution of a society that is bound by a set of norms that regulate the relations between them. As can be seen in the current international system, globalization continues to be the main phenomenon in international relations and it arises from the moment the economy is incorporated into international politics. It is important to mention that despite the fact that globalization has its beginnings in the 15th century, that is, when the continents began to exchange various products such as technology, food, culture, and among others; It was not until the nineties that this term acquired force within the international context (Vázquez et al., n.d.)

Therefore, the current international system is very different from that of years ago where the only actors at the international level were only the States; however, today it has a range of different actors that comprise it, such as States, transnational companies, intergovernmental organizations, and non-governmental organizations. In this way, it can be argued that the international order is nothing more than a scenario that is now very complex due to the diversity of actors, since the national interest is questioned since the own interests are fragmented by the different communities or actors at the level. international.

International doctrine establishes certain parameters for certain entities to be considered as international actors, but it should be mentioned that they have undergone significant changes in the international agenda, hence, for example, the appearance of non-governmental organizations that have dedicated themselves to defense and protection of the environment since the seventies. According to Esther Barbé, international actors are those units in the international system, be it an individual, group or entity, that can mobilize resources to achieve their objectives and thus exert influence on other actors of the international system, also, that they enjoy autonomy (Vélez, 2013). This definition as such takes into account some of the classic requirements for an entity to be considered an international actor; however, others are left aside due to the contemporary scenario. Under this concept according to Vélez (2013), the requirements to be considered as an international actor are:

- Ability to mobilize resources to achieve objectives.
- Ability to influence other actors in the international system.
- Have autonomy with respect to other actors of the international system.
- Perform functions that are significant and that have an impact on the international system.

The States are those known as actors within the international system, this without having a high level of importance in terms of compliance or not with the requirements listed above; furthermore, States enjoy attributes that no other entity could enjoy such as territory and sovereignty. The fact that the actors enjoy the quality of actors in the international system is a topic that is much discussed at present, since the enjoyment of this quality does not mean that it has conditions superior to other actors that exist at the international level. This discussion occurs because the ability of other international actors to influence others in different activities

or the impact on the foreign policy of States is compared, where many of the times they are capable of exceeding even the criteria of small States; these actors include transnational companies, NGOs, etc (Vélez, 2013).

It is important to mention the fact that the discussion about new actors on the international scene takes place more in the realistic theory, since it has always been argued that there is no entity superior to the State, this being the only actor that is relevant at the international level. This current also affirms that the State is the only actor since it has sovereignty, territory, and military capacity, which are unique and essential attributes of it, that is, they are hierarchically superior to non-state actors. However, it is essential to analyze that the new actors at the international level are subjects of public international law in terms of international legal norms; that is, they are capable of exercising rights and contracting obligations for themselves in the international order, in addition to defending their own interests. For this same reason, international actors can be divided into state international actors and non-state international actors (Vázquez et al., n.d.).

1.3.1 International governmental actors

State

Regardless of the different international theories, especially realism, it is considered that the main actor within international society continues to be the State. This occurs because the State has certain attributes that make it essential; first, the state has sovereignty, which allows it to have supreme authority not only internally but also externally; internally it has supreme authority over the population that is within its territory, and externally it gives it absolute authority in an international anarchic system. In other words, the sovereignty of a State is considered as the absence of all kinds of subordination; second, the State, unlike the other actors, has a territory that is made up of land, sea, and air in which its population is based; which normally other actors do not have. Likewise, it is considered that the State is the only actor capable of carrying out specific activities at the international level such as the signing of treaties and agreements, creating intergovernmental relations, and others (ibid.).

A fundamental issue within the consideration of the State as the main actor of the international system is the phenomenon of globalization. Although, as mentioned above, the

State has continued to be considered as the main actor in the international system over the years, an important fact that globalism suggests is that this concept has been in decline over the years. years, since the emergence of other types of actors has inevitably caused the fragility of these traditional concepts. Additionally, globalization has led to the progressive reduction of the concept of the sovereignty of States, because the fact of exchanging information, culture, etc, somehow leads to the breakdown of some concepts created over the years, in this case, the concept of border.

1.3.2 International non-governmental actors

Intergovernmental Organizations

Currently, many organizations interact directly with the rest of the international actors. Intergovernmental organizations are associations made up of three or more States to achieve common objectives, but, according to Michael Sodaro, this type of association could be considered as supranationalism, that is, it is the effort of two or more countries that share their sovereignty to create a structure and make decisions that are above the national government (Vélez, 2013). This situation implies a decrease in sovereignty that is an inherent characteristic of the State, since by forming part of an organization, the State gives up part of it, making the authority of the government increasingly shared with both local and regional authorities. It is argued that this association of the States is due to the fact that by themselves they cannot solve problems of political action at the global level, so they seek to align themselves with forums that allow them to work more effectively (idem).

Joining an international organization is part of a state privilege, since representation falls on a person that is qualified to make decisions on behalf of the State. These types of organizations that are considered as international actors arise through an international treaty to which several States are subscribed, giving it an institutional structure. This institutional structure is made up of permanent and autonomous people that make them in some way independent from the States, because, although they are created and controlled by themselves, they have acquired the autonomous will of the States, allowing them to act as an individual actor in the international system. On the other hand, according to Vélez (2013), to be an international organization, associations need to fulfill these requirements:

- They must have an inter-State character, that is, it must be based on States.
- On a voluntary basis, the adhesion of its members responds to their will.
- Permanent bodies that are responsible for the operation of the same.
- Autonomous will that allows independent decisions to be made.
- Cooperation among members to build common interests

Until the 90s, nation-states were still responsible for the policies that were taken at the national level on the environment, and this as respect for the principle of sovereignty. However, Lucatello (2014), argues that what refers to international cooperation and the environment represents a great problem that requires a real collective effort and quality in the mechanisms used for international aid. In this same decade, different public actors appear in the international environmental field that tend to have a lot of influence on the global system due to the provision of information that became indispensable for the development of policies in areas with a greater degree of uncertainty, such as the Intergovernmental Panel of the United Nations Climate Change Organization. In the case of intergovernmental organizations, their expansion and influence began with the Earth Summit in Rio de Janeiro in 1992. Despite this, since the 70s more than 200 environmental organizations have emerged; however, the great summits, treaties, and institutions that have emerged from these have caused environmental responsibilities to be separated into multiple organizations, such is the case that there are about a dozen United Nations agencies among which are: the Commission on Sustainable Development (CSD), the World Meteorological Organization (WMO), the International Oceanographic Commission (IOC), the UN Environment Programme (UNEP), the UN Development Programme (UNDP) and among others (Lucatello, 2014).

The problem of international organizations in a field as broad as the environment, is the fact that they usually promote an agenda that is not coherent for all States, in addition, there is a lack of organization due to the dispersion of issues in different organizations and the lack of existence of a single world organization for the environment that manages everything; the result of the disorganization and coordination is nothing more than the lack of clarity that exists between the mandates of each organization (Vélez, 2013). In addition, it should be emphasized that for reasons of sovereignty intergovernmental institutions are limited, because, as mentioned above, in an international system where there is no supremacy, a State cannot be enforced to fulfill with an agreement; a clear example is the case of the United States in the

Paris Agreement under the presidency of Donald Trump. Additionally, there is not a high degree of interest in continuously monitoring the objectives set out in the agreements and there are no mechanisms that can enforce this.

Non-governmental organizations

Non-governmental organizations differ from the previous ones because they can be understood as those entities at the international level that are not part of a public or governmental entity, in addition, these are part of a private idea that, like another type of international actor, meets certain requirements to be considered as such (Vélez, 2013). To explain it in a better way, these organizations are composed of social, academic groups, and others, that are part of different countries and that are united by common interests, so they share information on specific issues and in this way can influence governments and multilateral organizations. NGOs, therefore, ensure respect for various rights, and their power as an organization is limited to drawing the attention of social opinion at the international level to the mistakes made by some States (idem).

So, based on what has been said previously, the international doctrine does not establish an exact definition for NGOs due to the absence of international regulations; however, despite this aspect, their presence and influence in the international system increases considerably. Despite this situation, Vélez (2013), establishes in its article that certain common requirements for a non-governmental organization to have international credibility are:

- Its origin does not occur due to an intergovernmental agreement.
- They do not have government representation because their activity in the international arena should not be conditioned.
- It must be shaped democratically.
- It should not pursue lucrative ends.
- It must pursue international interests.
- They must be constituted under the domestic law of the State in which they are located.

Now, about environmental and ecological non-governmental organizations, these are born more frequently from the 70s. In general, many of these NGOs have dedicated themselves to

fighting every day for the conservation and care of the planet. In addition, they have spread the value of the natural environment, as well as the dangers to which it is currently subjected. The main activity of these NGOs is to disseminate information or complaints not only at the local level, that is, at the national level, but also at the international level to create awareness and achieve changes for the benefit of the same (Vélez, 2013). Among the most important and recognized environmental NGOs are:

Table 1. Non-governmental organizations

Non-governmental organizations	Description
World Wide Fund for Nature (WWF)	<p>The World-Wide Fund for Nature seeks to stop the degradation of the natural environment of the entire planet, in order to build a future in which human beings can live in harmony with nature (WWF, 2020).</p> <p>This organization works in 6 areas:</p> <ul style="list-style-type: none"> ● Meal ● Climate ● Water ● Wildlife ● Forest ● Oceans
Greenpeace	<p>Greenpeace is an international environmental and pacifist organization. It is economically and politically independent, that is, it does not accept donations or pressure from governments, political parties, or companies, because in this way it attracts the attention of public opinion on global problems, in addition to the search for solutions to have a green and peaceful future (GREENPEACE, 2021).</p>

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Transnational corporations

The recognition of transnational corporations within the international system occurs from the second half of the last century and this due to commercial growth and globalization, because according to Vélez (2013), the appearance of these companies occurs according to two areas, the first is the economic one where it is said that multinationals or transnationals are organized internationally through parent companies that operate under the same name and objectives in different countries; and the second, based on sociology where they are defined as companies that carry out their productive activity through subsidiaries that can be legally independent and that on the other hand increase profits based on comparative advantages of the distinctive countries at the global level (p. 650).

Likewise, transnationals are understood then as those companies that under the unified administration worldwide have the same interest in different countries, so they adapt to the economic, social, and legal characteristics of each State in order to increase profits and improve interests worldwide (Vélez, 2013). Although transnational corporations have gained power in international society, the States continue to be regulators before the other actors, however, it is essential to mention that many of these companies outperform small States in economics. On the other hand, we must remember that after the Cold War until today the geoeconomic situation has gained greater relevance than the geopolitical situation, and because of this, these companies have gained importance.

Transnational corporations are important for the economy as can be seen in their description; however, it is said that they should consider in their objectives and in their administration to develop actions that have the same degree of ecological and human responsibility as in those of their country of origin and in which they are established. According to Gortaire Morejón and Gómez (2014), currently, these companies are international actors within the international system, but it should be noted that there is a legal vacuum since there is not a legal body that through international law judges the actions of companies concerning the environment, on the contrary, the treaties given to this day do nothing more than regulate the obligations that States have towards nature but not of the companies, in general, it is or has been more important to protect their interests. To establish a context, transnational corporations have caused the exploitation of water resources through the privatization of water that has been denounced many times by different parties or actors. On the other hand, a relevant example in Ecuador is the pollution that occurred by the transnational Chevron that came to be called

worldwide as "Chernobyl of the Amazon", due to the damage caused not only to the flora and fauna, but also to the health of the existing communities in this region. There is also the case of the Exxon Valdez oil spill off the coast of Alaska (Gortaire et al., 2014). Taking into account examples of this type, more than an international law has been sought that is capable of granting obligations to these companies with respect to the environment, and that they are responsible to the international society for their actions; without having to judge the State by actions of a third party that in this case would be the transnationals.

1.4 The role of international cooperation in global environmental protection

It is important to remember that international environmental cooperation has its origins in the reconstruction of Europe after the Second World War, because this scenario delimited the perfect starting point for the promotion of international aid as an instrument of diplomacy and international relations (Duarte et al., 2014). The international cooperation existing at that time was focused on economic terms, as well as peace and security, being one of the main purposes of the newly emerged United Nations Organization in 1945 (Salvador, 2009).

For some years, security and the economy were the aspects primarily protected by the states, however, the twentieth century was determined, although not totally, by the insertion and environmental discussion in global politics, being from the decade of the 70s that cooperation between states became in favor of the environment. As mentioned earlier in the section of the environmental crisis, the first negative effects on the environment began to be felt or at least made visible, after the great wars, in such a way that states noticed the limited capacity of the land and therefore the urgency of its conservation that was being challenged by constant human intervention and the speed with which the consequences of these interventions exceeded borders. national (Sandler, 2016).

For this reason, the condition of public good that the environment possesses must be recognized, that is, it belongs to all states and at the same time no one owns it, so its conservation has become a common and non-exclusive critical factor (Ministry of the Environment, Government of Japan, 2005). Such public goods or also known as "global goods", including elements within the environment that are outside the individual jurisdiction of states such as the high seas, outer space, the seabed and ocean floor, the atmosphere, and in

certain interpretations, terrestrial flora and fauna (Guevara, *La cooperación internacional medioambiental y su incidencia en el ordenamiento jurídico chileno*, 2015).

Consequently, these global goods faced, in turn, problems with the same global condition, and the much-defended concept of sovereignty began to falter since it could not cohabit in a world of interdependent ecosystems and environmental needs that ignore borders and barriers. Environmental problems such as ozone depletion, loss of biological diversity, climate change, overpopulation, water scarcity, and air pollution have launched international cooperation efforts through the development and adoption of several international declarations and treaties that have urged the international community to combat environmental deterioration that directly harms its survival (Enuka, 2016). Thus, gradually, the effects of environmental degradation became present and the relationship between states was directed towards a joint search for environmental protection.

Due to the complexity and in certain cases, the ambiguity of the issue, there is no single concept that defines international environmental cooperation; however, it can be briefly defined as the joint action of states aimed at dealing with transboundary environmental problems that take shape through international institutions, agreements, and treaties (Barrett, 2016). In this way, at least in theory, a margin of action is generated in which states move away from a single national interest to voluntarily respond to a collective interest.

In this way, it is essential to talk about milestones that transformed the perception of the environment at a global level, as well as milestones that marked the beginning of the environmental movements and International Environmental Law, which, according to Gorfinkiel (1996), has functioned as an instrument through which states have sought to protect the environment through the establishment of guidelines, principles, and agreements that facilitate strategies to meet this objective. However, the formation of International Environmental Cooperation, as well as its great facilitator, International Environmental Law, have been the result of great efforts in these matters and, in addition, are part of constant evolution. For this reason, several antecedents can be pointed out that shaped the constitution and development of International Environmental Cooperation.

At first, Gorfinkiel (1996), points out that a characteristic that has marked the evolution of International Environmental Law as a basis for International Environmental Cooperation, has

been the creation of a specialized regulation in each sector, be it air, water, flora and fauna, rivers or seas. In fact, the first bilateral agreements concluded in the nineteenth century had to do with the prohibition of the exploitation in fishing of certain animal species such as seals in the Pacific Ocean (Leal, 2008). Another clear example of a regulation is the International Convention for the Protection of Birds Useful to Agriculture of 1902, which would become one of the first legally binding environmental efforts. This Convention was intended to provide complete protection to certain birds that facilitated agricultural activities so that their hunting and capture were prohibited (Ferrero, 2012). Progressively, the rest of the areas of environmental relevance were treated individually.

Similarly, it is considered an important precedent in environmental matters to the publication of the book "Silent Spring" in 1962. It was the marine biologist Rachel Carson who, through her book, denounced the serious effects of the use of chemicals such as pesticides, thus making governments and companies question the use of them (Mallén, 2012). Likewise, the generation of the discourse of development without ecological deterioration began with the publication of the book "Limits of growth" in 1972, written by the environmental scientist Donella Meadows together with 17 collaborators who are experts in the subject (Pacheco et al., 2003). This report focused on five factors that particularly affected growth on land and that needed to be analyzed and addressed urgently: agricultural production, population, natural resources, industrial production, and pollution. According to Mayor Zaragoza (2015), the main conclusions of this report were mainly two:

1. If growth trends in factors such as population, industrialization, pollution, food production, and use of natural resources were not considered and transformed, the planet would reach its maximum growth limit in 100 years.
2. It was recognized that these growth trends could be modified and prolonged sustainably over time through the creation of a global ecological and economic balance with which it was intended to satisfy the basic material needs of every human being on Earth.

In response to this new information regarding environmental degradation, it gave way to the emergence of the first environmental movements and a greater environmental awareness on the part of national governments that were pressured to stop this degradation (Hallock, 1993). In this way, an inevitable search for cooperation between states arise, who found that

their unilateral actions were not enough to solve environmental problems of such magnitude; in addition, due to contemporary environmental circumstances and the information collected in the scientific, political, and economic fields, environmental awareness focused on the possible effects of the population explosion, an incipient atomic war, increased energy consumption and the increasingly limited nature of resources (Guevara, 2015).

Despite the extensive history of International Environmental Cooperation and International Environmental Law, there are some main international treaties and milestones that, because they were a novelty and because they had a great scope worldwide, marked a before and an after in environmental understanding at the global level. These events will be summarized chronologically in the following table:

Table 2. Environmental milestones

Name	Year	Objective	Featured principle / Importance
Stockholm Declaration	1972	It was the first global conference on the environment and the one that significantly increased international interest in environmental matters. It also represented the first observation of the effects of human activity on the environment (Handl, 2012). The information addressed in "Limits of growth" (Marulanda, 2019). was discussed. It finally adopted a statement on principles for the conservation and improvement of the human environment and an action plan that included recommendations for global environmental management (Jackson, 2021).	Principle 1: Man has the fundamental right to freedom, equality, and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations. In this respect, policies promoting or perpetuating apartheid, racial segregation, discrimination, colonial and other forms of oppression, and foreign domination stand condemned and must be eliminated. (Organización de las Naciones Unidas, 2021).

<p>Our Common Future / Brundtland Report</p>	<p>1987</p>	<p>This report, also known as "Our Common Future", was made for the United Nations with the aim of stating that the ecological footprint of human beings is superior to the capacity of the earth both as a source of resources and as a waste sink (Fundación MAPFRE, 2020). In this way, it raised the idea of a type of sustainable development as an alternative to the conventional one, that is, one that is environmentally healthy without systematic destruction of nature, in addition, one that is socially just and economically viable (idem).</p>	<p>This used for the first time the term "sustainable development", which was understood as a growth capable of meeting the needs of the present without compromising those of future generations (Benitez, 2020).</p>
<p>The Rio Declaration on Environment and Development</p>	<p>1992</p>	<p>This conference sought to achieve sustainable development by recognizing the right of human beings to a healthy and productive life in harmony with nature (Organización de las Naciones Unidas, 1992). It was based on the Brundtland Report "Our Common Future" to deal with sustainable development trying to integrate sustainable development with environmental protection; in addition, it recognized the limit of natural resources and the duty to take care of them for the future generations (Eschenhagen, 2007).</p>	<p>Principle 1: "Human beings are at the heart of sustainable development concerns. They have the right to a healthy and productive life in harmony with nature." (Organización de las Naciones Unidas, 2021).</p>

Kyoto Protocol	1997	This protocol is part of the UN Framework Convention on Climate Change, its general objective was to ask industrialized countries to reduce their emissions of greenhouse gases, which contribute to global warming, by 5% below 1990 levels for the period 2008-2012 (Fondo Mundial para la Naturaleza, n.d).	It got the subscribing governments to implement laws to comply with their environmental duties; it also got companies to include the environment in their decisions. (Secretaría de Medio Ambiente y Recursos Naturales, 2016).
World Summit on Sustainable Development / Johannesburg	2002	The main objective of this summit was to re-establish the Rio political compact with sustainable development (Departamento de Información Pública de las Naciones Unidas, 2002). In this way, this summit tried to generate a global commitment that allows a balance between social, economic development, and environmental care as interrelated and mutually reinforcing factors for sustainable development (Comisión Económica para América Latina y el Caribe, 2002).	It achieved recognition of the roles and rights of communities in the management of natural resources; it also promoted greater corporate responsibility and accountability and raised the need to decouple economic growth from environmental degradation (La Vina et al, 2002).

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All these events meant a great advance in environmental matters at the international level, mainly because they became a positive contribution to the environmental awareness existing at the time, however, there has been great controversy around these summits since some of the instruments derived from them have been of the soft law type, that is, have represented rules of a non-binding nature but that have great legal relevance (Peterson, 2012). For example, instruments such as the Stockholm Declaration or the Rio Declaration did not establish legal obligations per se, however, that does not mean that they have not had legal importance in the

international normative order because the principles included in these Declarations came to play a decisive role in the practice of States (Orellana, 2014). Although its legal relevance is recognized, this soft nature has meant that in practice States tend to separate themselves from the responsibilities that these principles emanate, however, instruments such as the Kyoto Protocol that are legally binding on the countries that ratify them, on the other hand, have also opened the possibility that due to the commitments they imply, certain States do not assume the responsibility of dealing with major problems such as climate change, especially, the most industrialized countries are the ones that have sovereignly denied their participation in these environmental commitments.

Beyond the success or failure of these environmental efforts, the reason why these contributions took so much force internationally, was the fact that states had already noticed the fragility of their so protected and respected borders, as these were tested with the rapid scope of the harmful effects produced in the environment, although, it should be emphasized, that although all states faced environmental deterioration to a greater or lesser extent, not all have had the capacity or sufficient means to take action in this regard (Laguardia et al., 2008). However, according to Pacheco and Vega (2003), the main international strategies and responses adopted by states and supported by environmental law and cooperation in the face of accelerated environmental degradation have been the following:

Strategies:

- a) The strengthening of environmental policy at the domestic level.
- b) The implementation of new citizen participation schemes.
- c) The generation of financial, human, technical, and material resources towards projects related to remedy and protection.
- d) Participation in international organizations and forums for the promotion of environmental investments.
- e) Participation in international forums for the exchange of relevant information on environmental protection and the training of human resources.

Response:

- a) The promotion and signing of international cooperation agreements for the protection of ecosystems.
- b) Participation in intergovernmental bodies and round tables for discussion.
- c) The exchange of information, and human and material resources.
- d) The mobilization of financial support funds for the realization of environmental projects in developing nations.
- e) The design and implementation of schemes to promote investment in clean technologies.

In the same way, it is important to comprehensively address other international treaties and agreements that are considered the main ones due to the impact they have had not only in terms of international environmental cooperation in general but also because of the progress they have meant for the protection of the Amazon both regionally and specifically in the Ecuadorian Amazon. Such treaties and agreements shall be described below individually:

1.4.1 The 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 Flowers is an international agreement signed in Washington D.C in 1973, whose objective is to ensure specimens of wild animals and plants in such a way that international trade in them does not pose a threat (CITES, 2021). Due to the recognition that trade in wild animals and plants goes beyond national borders, CITES was born as a result of a resolution adopted in 1963 by the members of IUCN (International Union for Conservation of Nature), whose regulation was based on international cooperation to tackle overexploitation (*idem*).

CITES establishes an international legal framework that includes procedures that countries must follow to properly regulate international trade in the species it seeks to protect, however, it does not prohibit trade in species exactly, but offers regulation, in such a way that trade in species that face a greater threat, it is subject to stricter rules (Álvarez et al., 2003). Álvarez and Benítez (2003), also explain that CITES protects species according to three appendices. The first appendix includes those species considered endangered and that need very strict regulation, on the other hand, the second appendix includes species that, although they are not in danger of extinction at that time, may become in serious danger if they are not subject to a

regulation. Finally, the third appendix includes those species whose conservation is derived from the request of a party that previously already regulates the trade of a species and needs the cooperation of other countries to avoid its exploitation.

CITES regulates trade through a system that gives permissions and certificates that are granted under certain conditions that mainly ensure that commercial operations do not pose a risk to species, in this way, it is important to mention a project that was born under this notion between the CITES Secretariat and the Permanent Secretariat of the Amazon Cooperation Treaty Organization (ACTO), clarifying that the ACTO is an organization made up of eight countries: Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela, and whose objective is to encourage sustainable development and social inclusion in the Amazon Region (Organización del Tratado de Cooperación Amazónica, 2021); now, taking into account what it is and the objective of the ACTO, the aforementioned project consisted of assisting the member states of the ACTO to develop a system of electronic issuance of CITES permits to track the international trade of the specimens included in each appendix, promoting the exchange of technology and experiences among the countries of the region to reduce fraud and illicit international trade (CITES, 2021). Through this project, CITES indicated that under this type of system the survival of these species in the wild could be guaranteed, as well as guarantee the livelihood of the indigenous communities that depend on them.

1.4.2 Convention on Biological Diversity

The Convention on Biological Diversity is a legally binding international treaty by which nations decided to conserve biological diversity, make proper use of biological resources and have equitable access to the benefits arising from the use of genetic resources, covering all aspects of biological diversity: genetic resources, species, and ecosystems (Glowka, 1996). The Convention on Biological Diversity, which seeks to achieve a sustainable future, also covers all possible aspects that are directly or indirectly related to biological diversity such as politics, science, education, agriculture, culture, and business (Convenio sobre la Diversidad Biológica, 2011). This convention was signed on 5 June 1992 at the Earth Summit in Rio de Janeiro and entered into force on 29 December 1993 (ibid.).

According to the Convention on Biological Diversity (1992), the term biological diversity corresponds to "the variability of living organisms from any source, including, terrestrial and

marine and other aquatic ecosystems and the ecological complexes of which they are part; it includes diversity within species, between species and ecosystems, as a result of natural and cultural processes." Taking into account that Ecuador, Brazil, Bolivia, Colombia, Guyana, French Guiana, Peru, Suriname, and Venezuela share a percentage of the largest tropical forest in the world, and that this biome functions as an interconnected and interdependent unit that provides innumerable benefits, being so that these countries have worked together to seek the conservation of biological diversity within this biome (Fondo Mundial para la Naturaleza, 2016).

Under this search to conserve biological diversity in the Amazon region, projects have been carried out with the participation of the countries belonging to this region in conjunction with the Work Program for Protected Areas (PTAP), which is a proposal of the redparques technical cooperation network for protected areas in Latin America and the Caribbean (Redparques, 2021), in order to coordinate efforts around the management of protected areas of the Amazon biome, this, in addition, is linked to the Work Program for Protected Areas of the Convention on Biological Diversity (Organización de las Naciones Unidas para la Alimentación y la Agricultura, 2016).

The International Union for Conservation of Nature (2008) defines protected areas as "... A clearly defined, recognized, dedicated and managed geographical space, through legal or other types of effective means to achieve the long-term conservation of nature and its ecosystem services and its associated cultural values". In this way, the development of protected areas has been a central axis of the Convention on Biological Diversity, obeying Article 8 of the same whose importance revolves around the so-called in situ conservation, that is, the conservation of ecosystems and natural habitats, as well as the maintenance and recovery of species in their natural environments and, as for domesticated and cultivated species, in those environments where their specific properties have been developed (Ministerio de Desarrollo Agrario y Riego, 2015).

Ecuador has expressed its commitment as a signatory country of this Agreement with the creation of the National Biodiversity Strategy, this is the instrument of the state that directs efforts towards knowing, protecting, valuing, restoring, and sustainably using biodiversity and whose results are expected to be achieved by 2030 (Ministry of the Environment, 2021). Likewise, the Ministry of the Environment regarding the National System of Protected Areas

of Ecuador, recognizes that within the Amazon the protected areas are the following: Reserva Ecológica Cofán-Bermejo, Reserva de Producción de Fauna Cuyabeno, Parque Nacional Yasuní, Parque Nacional Sumaco Napo-Galeras, Reserva Biológica Limoncocha, Reserva Biológica El Cóndor, Reserva Biológica El Quimi, Reserva biológica Cerro Plateado, Refugio de Vida Silvestre El Zarza, and Área Ecológica de Conservación Siete Iglesias.

1.4.3 Water Statements

Water is at the epicenter of the development of life in all its forms and is paramount to socio-economic development, energy, food production, ecosystems, and the subsistence of all human beings (Organización de las Naciones Unidas, 2021). Similarly, the United Nations emphasizes the crucial role of water, as well as the challenges and commitments around it, in adapting to climate change and the direct link it generates between society and the environment. Due to this vital resource has faced different challenges related to poverty and inequality and that social and environmental challenges such as pollution, accelerated urbanization, climate change and the decrease of water resources have been aggravated; the United Nations Organization has developed a report in which it highlights the main international declarations and treaties that contain the guidelines and principles about the water right, these declarations and treaties will be summarized in the following table:

Table 3. International declarations and treaties on the water right

Name	Year	Article/ Featured principle
Mar del Plata UN Water Conference	1977	“All people, whatever their level of development or economic and social conditions, have the right to access to drinking water in quantity and quality commensurate with their basic needs.” (Conferencia de las Naciones Unidas sobre el Agua, 1977).
Convention on the Rights of the Child	1989	Art. 24 numeral 2 literal c: “To combat disease and malnutrition, including within the framework of primary health care, through, inter alia, the application of readily available technology and through the provision of adequate nutritious foods and clean drinking-water,

		taking into consideration the dangers and risks of environmental pollution” (Fondo de las Naciones Unidas para la Infancia, 2006).
Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)	1979	Art. 14 numeral 2 literal h: “To enjoy adequate living conditions, particularly in relation to housing, sanitation, electricity and water supply, transport and communications” (Convención sobre la eliminación de todas las formas de discriminación, 1979).
Convention on the Rights of Persons with Disabilities	2006	Art 28 numeral 2 literal a: To ensure equal access by persons with disabilities to clean water services, and to ensure access to appropriate and affordable services, devices and other assistance for disability-related needs” (Convención Internacional sobre los Derechos de las Personas con Discapacidad, 2007)
General comment °15 of the United Nations Committee on Economic, Social and Cultural Rights	2002	“The human right to water is the right of everyone to sufficient, safe, acceptable, accessible and affordable water for personal and domestic use. An adequate supply of safe water is necessary to prevent death from dehydration, to reduce the risk of water-related diseases, and to meet consumption and cooking needs; in addition to personal and domestic hygiene needs” (Comité de Derechos Económicos, Sociales y Culturales de las Naciones Unidas, 2003).
International Conference on Water and Sustainable Development. Dublin Conference	1992	Principle No. 4 Water has an economic value in all its competing uses and should be recognized as an economic good. “...it is vital to first recognize the basic right of all human beings to have access to clean water and sanitation at an affordable price” (Conferencia Internacional sobre Agua y Desarrollo Sostenible, 1992).

<p>United Nations Conference on Environment and Development. Rio Summit</p>	<p>1992</p>	<p>Chapter 18 of Program 21 validated the Resolution of the Mar del Plata Conference on Water, recognizing that all people have the right to access to drinking water (Programa 21, 1992).</p>
<p>United Nations International Conference on Population and Development</p>	<p>1994</p>	<p>The Programme of Action of the United Nations International Conference on Population and Development States said: "Everyone has the right to an adequate standard of living for himself/herself and his or her family, including food, clothing, housing, water, and sanitation." (Conferencia Internacional de las Naciones Unidas sobre la Población y el Desarrollo, 1994).</p>
<p>UN General Assembly Resolution A/Res/54/175 "The Right to Development"</p>	<p>1999</p>	<p>Art 12: "Reaffirms that, in the full realization of the right to development, inter alia: (a) The rights to food and clean water are fundamental human rights and their promotion constitutes a moral imperative both for national Governments and for the international community" (Asamblea General de las Naciones Unidas, 1999).</p>
<p>World Summit on Sustainable Development</p>	<p>2002</p>	<p>The summit's political declaration stated: "We welcome the focus of the Johannesburg Summit on the universality of human dignity and are determined, not only through decision-making on goals and timetables but also through partnerships, to rapidly increase access to basic services, such as the provision of safe drinking water, sanitation, adequate housing, energy, health care, food security, and biodiversity protection" (Cumbre Mundial sobre el Desarrollo Sostenible, 2002).</p>

<p>Draft guidelines for the realization of the right to safe drinking water and sanitation</p>	<p>2005</p>	<p>This project, requested by the Sub-Commission on the Promotion and Protection of Human Rights, assists and guides those in charge of policy generation at the level of governments and international agencies and members of civil society, who participate in the water and sanitation sector, to work for the right to drinking water. (Oficina del Alto Comisionado de las Naciones Unidas para los Derechos Humanos, 2005).</p>
<p>Human Rights Council Decision 2/104</p>	<p>2006</p>	<p>The Council requests the Office of the United Nations High Commissioner for Human Rights "taking into account the views of States and other stakeholders, to undertake, within existing resources, a detailed study on the scope and content of relevant human rights obligations related to equitable access to safe drinking water and sanitation under international human rights instruments, including relevant conclusions and recommendations thereon, for submission to the Council before its sixth session" (Consejo de Derechos Humanos, 2006)</p>
<p>Report of the United Nations High Commissioner for Human Rights on the scope and content of the relevant human rights obligations related to equitable access to safe drinking water and sanitation under international human rights instruments</p>	<p>2007</p>	<p>The report of the United Nations High Commissioner for Human Rights states that: "... now is the time to consider access to healthy drinking water and sanitation as a human right, defined as the right to equitable and non-discriminatory access to a sufficient amount of healthy drinking water for personal and domestic use." (Alto Comisionado de las Naciones Unidas para los Derechos Humanos, 2007).</p>

<p>Human Rights Council Resolution 7/22</p>	<p>2008</p>	<p>Through this resolution, "the Human Rights Council appoints an independent expert on the issue of human rights obligations related to access to safe drinking water and sanitation" (Consejo de Derechos Humanos, 2008).</p>
<p>Human Rights Council Resolution 12/8</p>	<p>2009</p>	<p>Through this resolution, "the Human Rights Council welcomes the consultation with the independent expert on the issue of human rights obligations related to access to safe drinking water and sanitation, receives the first annual report of the independent expert and, for the first time, recognizes that States must to address and eliminate discrimination in access to sanitation, urging them to deal effectively with inequalities in this regard" (Consejo de Derechos Humanos, 2009).</p>
<p>UN General Assembly Resolution A/RES/64/292</p>	<p>2010</p>	<p>This resolution officially recognizes the human right to water and sanitation and assumes that pure drinking water and sanitation are essential for the realization of all human rights. In addition, it calls on states and international organizations to provide financial resources, training, and technology transfer to be provided to developing countries to provide safe, clean, accessible, and affordable drinking water and sanitation services for all. (Asamblea General de las Naciones Unidas, 2010).</p>
<p>Human Rights Council Resolution A/HRC/RES/15/9</p>	<p>2010</p>	<p>This resolution recognizes that the right to water and sanitation is part of current international law and confirms that this right is legally binding on states. It also asks states to generate adequate tools and mechanisms to achieve compliance with obligations related to safe access to drinking water and sanitation, including those areas</p>

		currently without service or with insufficient service. (Consejo de Derechos Humanos, 2010).
Human Rights Council Resolution A/HRC/RES/16/2	2011	Through this resolution, the Human Rights Council decides to "extend the mandate of the current mandate holder as Special Rapporteur on the human right to safe drinking water and sanitation for three years" and "Encourages the Special Rapporteur, in the discharge of her mandate... Promote the full realization of the human right to safe drinking water and sanitation, inter alia, by paying particular attention to practical solutions about the realization of that right, particularly in the context of country missions, and by following the criteria of availability, quality, physical accessibility, affordability, and acceptability”

Produced by: authors

Although most of these declarations are not legally binding, they demonstrate a political intention to come true the water right, and guidelines related to access to safe drinking water and sanitation are also implicit in other international human rights treaties to promote and protect other human rights such as the right to life, adequate housing, food, education, health and work (Oficina del Alto Comisionado para los Derechos Humanos, 2018).

These international declarations on water have been the basis for the emergence of regional efforts that also seek to protect water and ensure access to it for all people, such is the case of the Amazon Cooperation Treaty signed in July 1978 by Bolivia, Brazil, Colombia, Ecuador Guyana, Peru, Suriname, and Venezuela. Although this treaty covers various matters more than those related to water resources, such as flower and fauna, health, scientific cooperation, tourism, indigenous culture, among others; also, it contains a great normative contribution regarding the Amazon River as shared resources (Pinto, 2017). Similarly, according to Pinto (2017), the most relevant aspects of this treaty are those that refer to the freedom of commercial navigation in the course of the Amazon and the exclusive use of the parties to the treaty of natural resources in their respective territories, responding to a right proper to the sovereignty of the state.

However, the treaty has not been limited to these aspects, but through the Amazon Cooperation Treaty Organization (ACTO), an intergovernmental body created to strengthen the objectives of the treaty, has been carried out projects such as the ACTO/UNEP/GEF Project - Integrated and sustainable management of transboundary water resources of the Amazon River basin considering climate variability and change, whose purpose is to strengthen the institutional framework for the planning and execution of strategic activities around the protection and sustainable management of the water resources of the Amazon basin in the face of climate change that the region faces (Organización del Tratado de Cooperación Amazónica, 2021).

The importance of protecting these water resources is because the Amazon River is the widest, longest and deepest in the world, having a basin that extends for 6,118,000 km² throughout the eight countries mentioned above; it is also the largest river on the planet having an average flow of 150 thousand m³/s, made up of approximately one thousand tributaries and with an estimated route of 6,992 km, with an annual discharge to the Atlantic Ocean of 6.6 billion m³ of water (Observatorio Regional Amazónico, 2018). Similarly, the Amazon basin is essential for the environment by concentrating more than half of the tropical rainforest in the world that, together with intense evaporation and the absorption of atmospheric carbon, makes this region a regulator of the climate worldwide (ibídem).

The Ecuadorian state has not only sought to be part of treaties such as the one mentioned above but also at the domestic level has made explicit references in the 2008 Constitution regarding the water right and also regarding the importance of the Amazon. The first article to refer to water is Article 3, paragraph 1: the primary duties of the State are "to guarantee without any discrimination the effective enjoyment of the rights established in the Constitution and international instruments, in particular education, health, food, social security and water for its inhabitants". Similarly, another Article that mentions the water right is Article 12 when it states: "The human right to water is fundamental and inalienable. Water constitutes a strategic national heritage for public use, inalienable, imprescriptible, unseizable and essential for life".

1.4.4 Escazú Agreement

The Regional Agreement on Access to Information, Public Participation and Access to Justice in Environmental Matters in Latin America and the Caribbean, also known as the

Escazú Agreement, was adopted in Escazú, Costa Rica on March 4, 2018, becoming the first regional environmental agreement in Latin America and the Caribbean; and the first in the world to include concrete provisions on the defense of human rights in environmental issues (Portal oficial del Estado argentino, 2020). It should be noted that, although the agreement is open to the 33 countries of Latin America and the Caribbean, it was signed by 24 of them on September 27, 2018, until its entry into force on April 22, 2021, with the ratification of 12 countries including Ecuador (idem).

The main objective of this Agreement, as indicated in its first article, is:

"guarantee the full and effective implementation in Latin America and the Caribbean of the rights of access to environmental information, public participation in environmental decision-making processes and access to justice in environmental matters, as well as the creation and strengthening of capacities and cooperation, contributing to the protection of the right of each person, of present and future generations, to live in a healthy environment and to sustainable development" (Comisión Económica para América Latina y el Caribe, 2018).

The possibility of carrying out a regional agreement was first raised at the United Nations Conference on Sustainable Development (Rio+20) held in 2012, whose principle 10 seeks to *"ensure that everyone has access to information, participates in decision-making and accesses justice in environmental matters, to guarantee the right to a healthy and sustainable environment of present and future generations"* (Comisión Económica para América Latina y el Caribe, 2015). This principle aims to deepen democracies and social cohesion, increase confidence in decisions, eliminate asymmetries and avoid socio-environmental conflicts (idem).

The importance of the Escazú agreement stems from the high level of risk faced by environmental defenders in the Latin American region, as well as the lack of environmental information at government levels and the limited citizen participation in decisions of this nature (Gómez, 2021). In December 2020, different authorities from the signatory countries met on the occasion of International Human Rights Day to emphasize the importance of the Escazú Agreement Escazú (Comisión Económica para América Latina y el Caribe, 2020). Among all the contributions of the event, the words of the Vice President of Costa Rica Epsy Campbell stand out,

"In Latin America, we have suffered attacks on environmental defenders, including indigenous people, rural leaders, activists of environmental organizations, leaders of Afro-descendant organizations, who in some cases have met their deaths. Having a legal tool that protects them tells us that we have a region that not only engages with the environment but also protects the lives and rights of environmental activists. This is a fundamental step" (Campbell, 2021).

In this way, the Escazú Agreement is a milestone in environmental matters for Latin America and the Caribbean, being negotiated by and for this region, in addition to having extensive public participation and the support of organizations such as ECLAC as technical secretariat (Bárcena, 2018). The Escazú Agreement extends to reach the most excluded and marginalized sectors, through strategies that eliminate the barriers that hinder its full exercise of rights, in this way, urgent problems such as climate change, natural disasters, soil erosion, or the loss of diversity, are properly addressed (idem).

In the specific case of the Amazon, this agreement plays a key role in opening up possibilities to deal with socio-environmental conflicts arising from extractive and infrastructure projects that are confronted by a network of environmental defenders, giving them the opportunity for justice and inclusion (Derecho, Ambiente y Recursos Naturales, 2018). It is also important to mention that the defenders of the Amazon are not only activists and ecologists, but those people belonging to the indigenous peoples who extend throughout this region, since in many cases they have not been taken into account within the environmental decisions that can drastically affect their lives; in addition, it is important to emphasize that many of the times they risk their lives, as they are persecuted and criminalized in their attempt to defend the environment and their territories (Coalición Regional, 2018). Ecuador was the ninth country to ratify the Escazú Agreement, also aligning itself with constitutional values that protect the right to legal certainty and the right to due process, and agreement can also be found in paragraph 2 of article 18, on the right to access to information; Article 75, on the right of access to justice; Article 95, which deals with the right of participation of citizens in matters of public interest and Article 100 on the participation of citizens at different levels of government (Cevallos et al., 2019).

1.4.5 Paris Agreement

On December 12, 2015, at the Paris Climate Summit (COP21), the parties to the United Nations Framework Convention on Climate Change reached a historic agreement by unifying the efforts of the international community to combat it, providing a framework for action in which all countries, according to their capacities, are committed to responding to an environmental challenge of such magnitude (Oficina Española de Cambio Climático, 2017). The Paris Agreement has been signed by 195 countries; this marked a before and after in the international negotiations on climate change as it was the first legally binding international treaty made in this regard; in addition, it marked a precedent by contemplating those industrialized countries are the ones that most commit to reduce their greenhouse gas emissions (idem).

According to Article 2 of the Paris Agreement, strengthening the global response to the threat of climate change must "holding the increase in the global average temperature well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change." To achieve this goal, the Agreement opens an avenue for developed nations to cooperate with developing nations in their work on climate change mitigation and adaptation, as well as creating a framework for follow-up through transparent reporting (Organización de las Naciones Unidas, 2019). In order to achieve such transparency, governments agreed to hold a meeting every five years to review collective progress towards long-term goals and to inform parties of updates and improvements arising from their participation (Unión Europea, 2021).

The Paris Agreement is also of vital importance for the fulfillment of the 2030 agenda adopted by the General Assembly of the United Nations Amazon for sustainable development, likewise, the responses to climate change and the strategies included in the Agreement to combat it, are closely linked to equitable access to sustainable development and the eradication of poverty (Cognuk et al., 2020). Similarly, Cognuck and Numer recall that the priorities of the Agreement also relate to food security and hunger, the protection of ecosystems, and diversity. In addition, they emphasize that there is no penalty if countries do not comply with their commitments, however, civil society plays a fundamental role in monitoring its implementation at the national and local levels.

The nature of the Agreement is progressive, in such a way that it contemplates the possibility of creating a model that focuses simultaneously on development, the reduction of CO₂ emissions, the role of carbon sink of ecosystems, and the urgency of strengthening social-ecological resilience (Casas, 2019). For this reason, in the case of the Amazon, this implies the strengthening of the integrated and sustainable management of forest resources, including the monitoring of forest cover, the reduction of deforestation, land-use change, and environmental degradation, as well as phenomena that increase CO₂ emissions and reduce the function of forest and soils as carbon sinks (*idem*).

In the case of Ecuador, it ratified its accession to the Paris Agreement in 2017 and presented its first nationally determined contribution in 2019 (Organización de las Naciones Unidas para la Alimentación y la Agricultura, 2020), by its constitutional precepts, especially with that which recognizes the right of the population to live in a healthy and ecologically balanced environment (Observatorio del Principio 10 en América Latina y el Caribe, 2021). Even though Ecuador is responsible for 0.15% of global greenhouse gas emissions, it has actively participated in the negotiation processes of the Agreement, collaborating in the conceptualization of certain terms such as "climate justice" and also contributing with its experience in policies for the reduction of emissions from deforestation and forest degradation, conservation policies, sustainable forest management and increased forest carbon stocks (Ministerio del Ambiente y Agua, 2016).

1.4.6 ILO Convention 169

Since 1921, the International Labour Organization, a specialized agency of the United Nations, began to deal with the situation of those referred to as "aboriginal workers" who were in the European colonies, finally adopting in 1930 the Forced Labour Convention, which, as the name suggests, prohibits all forms of forced or compulsory labour which, in this case, it particularly affected indigenous peoples (Salazar, 2016). Subsequently, according to Salazar (2016), in 1957 the Indigenous and Tribal Peoples Convention No. 107 was adopted, becoming the first binding instrument regarding the rights of indigenous peoples, however, it presented some flaws in pigeonholing these peoples as less advanced populations whose future was in the hands of those more developed (Oficina del Alto Comisionado para los Derechos Humanos, 2021).

Thus, finally in 1989, the ILO prepared the new Convention No. 169 on Indigenous and Tribal Peoples by recognizing that around the world these peoples did not have the same rights as the rest of the population and that their values and customs were being eroded (Oficina Internacional del Trabajo, 2015). The Convention contains two main premises: the right of indigenous peoples to preserve their own cultures, ways of life, and institutions, as well as their right to participate in decisions that directly affect them (ibid.). Similarly, the International Labour Office indicates that this Convention guarantees the right of indigenous and tribal peoples to set their priorities in terms of development processes, to the extent that their lives, beliefs, institutions, spiritual well-being, and the lands they occupy are involved.

The region of Latin America and the Caribbean is the one that has the largest number of ratifications of this Convention because many countries in this region are multicultural and multilingual since indigenous populations constitute a significant percentage of the population as a whole, in addition, these indigenous populations are spread throughout all the countries that make up the Amazon region (Organización Internacional del Trabajo, 2009). The International Labour Organization (2009) also states that part of the influence of Convention 169 has been its operation as a basic model for constitutional and legal reforms in the field of indigenous peoples, so that notions that arise from it such as "self-identification", "autonomy" and "traditional territories", were spreading in the constitutions and norms of these countries.

Ecuador is home to 14 indigenous nationalities, 24.1% of this indigenous population lives in the Amazon and corresponds to 10 nationalities, 7.3% of the Andean Kichwa inhabit the Sierra Sur; and the remaining 8.3% live in the Costa region and the Galapagos Islands (Grupo Internacional de Trabajo sobre Asuntos Indígenas, 2019). In the Ecuadorian case, this Convention was ratified by Congress on May 15, 1998, and entered into force on August 15, 1999, which has allowed, in theory, that indigenous peoples are consulted by the state regarding decisions that affect their subsistence, and this Convention has also served as the way for indigenous peoples to submit claims when their rights are violated (García F. , 2014).

1.4.7 United Nations Declaration on the Rights of Indigenous Peoples

At the international level, there is no definition of indigenous peoples as they have opposed being limited by the lack of flexibility of a formal definition, so the desire for self-definition prevails. However, according to studies, there is a definition that is used regularly when

considered the most practical and is the following: "They are indigenous communities, peoples, and nations that continue to have a historical continuity in the pre-invasion and pre-colonial societies that developed in their territories; they are considered different from other sectors of the societies that now prevail in those territories or part of them. They are now non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories and ethnic identity as the basis of their continued existence as a people, in accordance with their own cultural patterns, social institutions and legal systems" (Organización de las Naciones Unidas, 2004).

Regardless of what the definition may or may not be, indigenous peoples, whose communities are made up of just over 370 million people living in 90 countries, are among the most vulnerable, disadvantaged, and marginalized groups worldwide (La Oficina del Alto Comisionado de las Naciones Unidas para los Derechos Humanos, 2013). It is a fact that each indigenous people respond to its own culture, traditions, language, history, and legal system, as well as each of these people, maintains a solid bond with the environment, their territories, and lands; however, they share a common history of subjugation, land uprooting, discrimination and multiple violations of their human rights (idem). For this reason, there have been various efforts at the international level to protect and guarantee their rights, with the Declaration on the Rights of Indigenous Peoples being the result of preparations and debates that lasted for more than 20 years before being adopted by the General Assembly on September 13, 2007 (Organización de las Naciones Unidas, 2021).

The rights of indigenous peoples contained in this declaration, according to Zalaquett Daher (2008), can be grouped as follows:

1. Collective rights to self-determination or to a political status of autonomy that confers on these peoples the possibility of affirming and preserving their identity and self-governance, including the administration of justice in certain aspects, according to their ancestral customs, in addition to deciding or participating in the elaboration and execution of development strategies for their community.
2. Collective rights to land and natural resources, including fisheries and subsoil resources, as well as the protection of the environment and the biodiversity of their territories.

3. Rights relating to maintaining and developing their culture, including, among other aspects, the use, preservation, and/or dissemination of their history, languages, traditions, philosophies and religions, traditional medicine, arts, and sports.

The recognition of these rights has served as the framework for the protection of indigenous peoples whose homes extend throughout the Amazon region, taking into account that they are ancestral cultures that have developed lifestyles with specific characteristics that have historically been defined as primitive or underdeveloped. These peoples have faced and still face different threats such as extractive pressure on natural resources by national and transnational corporations, the execution of large civil works with the collaboration of international investment banks, the appropriation of traditional knowledge (Comisión Económica para América Latina y el Caribe, 2014), as well as mining activity, road construction, the development of industrial projects, the displacement of communities, the invasion of their lands, violence, and discrimination (Berraondo, 2000). In this way, indigenous peoples have achieved, at least in theory, the protection of their rights as human beings and citizens of their respective countries, which have ratified the various conventions, protocols, and declarations of human rights, providing them with protection not only in their national legislation as citizens, but also the protection created by international organizations to protect each individual from the abuses of states (ibid.).

In the particular case of Ecuador, a country in which 14 nationalities live, it contains within its constitution specific apexes on the collective rights of indigenous communities, peoples, and nationalities; in addition, it is a signatory to international treaties such as ILO Convention 169, and is one of the countries that adopted in September 2007 the United Nations Declaration on the Rights of Indigenous Peoples, in the framework of the General Assembly of the United Nations (Defensoría del Pueblo, 2021). In this way, under this framework of protection and with the declaration of Ecuador as a plurinational and intercultural state, the space is constituted to create processes of construction of a more equitable, just, and egalitarian state, that is, without discrimination (CODENPE, 2012). Likewise, the participation and autonomy of indigenous peoples and nationalities prevail, which on several occasions have opposed concessions that harm their lands and resources, pollute the environment and water sources, and deteriorate their health and food security (Organización de las Naciones Unidas, 2018).

1.5 New challenges for international environmental cooperation

Since its beginning, international cooperation has been characterized by its heterogeneity and dispersion, these, in turn, were intensified over time due to the proliferation of agencies, multilateral organizations, non-governmental organizations, civil society, and other actors that are far from the idea that states are the only ones with an important role in the international sphere when it comes to cooperation.

In this way, the contemporary scenario of international cooperation and, especially, the scenario of international environmental cooperation, have become more complex by bringing together diverse interests, discourses on development, and priorities that are simultaneously negotiated in an asymmetrical framework of international relations (Giunta et al., 2020). Likewise, the changing trends in the international community have generated that the traditional conceptions of cooperation, development, and social benefits, are questioned in new contexts and these actors currently have a greater role, it is for this reason that, Giunta and Caria (2014), also refer to a significant change in the realm of international environmental cooperation that was presented thanks to the insertion of ecological considerations in the development, which are visible in the 2030 Agenda for Sustainable Development approved in 2015 by the United Nations General Assembly. This Agenda, throughout its 17 objectives, places the environmental goals related to global warming and the loss of biodiversity, at the same level as other internationally protected goals such as the eradication of poverty.

Environmental problems such as climate change, deforestation of forests as an ecological element of great relevance, the loss of both terrestrial and marine biodiversity, excess pollution, changes in ocean temperature, soil damage, or loss of water supplies, are accelerated every day by anthropogenic factors (Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura, 2017), which make international action urgent, representing a challenge that is prolonged over time since although the fight for the environment has been achieved to a greater degree, the effects that arise from its degradation will remain for several centuries even if all polluting and destructive activities are stopped. For this reason, current policies on the environment and climate aim to address the systems and patterns of production, and consumption, that is, the roots of all environmental challenges, as well as the inclusion of actors with a relevant voice in this matter, so that these can be addressed correctly (idem).

It is due to the recognition of the challenge that the diversity and inclusion of voices in environmental matters represent, that different social organizations have modified their interests and initial agendas to move towards the formation of a civil society increasingly informed about their rights and responsibilities within sustainable development and that has put equality, environmental justice and the right to live in a healthy environment as a priority in the construction of environmental policies (de Miiguel et al, 2014). In the same way, it is considered an aspect of great complexity to deal with environmental challenges related to inequality, since mechanisms are necessary to ensure that the environmental policies and instruments that are adopted do not represent an extra burden for people who are in situations of vulnerability and that they are aimed at improving their living conditions (idem).

Environmental challenges are also reflected in the traditional characteristics of globalization, in such a way that interdependence and global externalities increase, which is why phenomena such as climate change maintain an unequal distribution of their impacts, affecting some regions more than others (Comisión Económica para América Latina y el Caribe, 2018). In a multipolar context, not only environmental problems represent a challenge, but how they are treated as well, since there is a constant clash and even a dichotomy, between interests and perspectives in this regard (idem).

CHAPTER 2

ENVIRONMENT AND CRISIS

2.1 Environment

The word environment is used to refer to the "natural" environment, that is, the space where beings develop their life; or the sum of all the living and abiotic components surrounding an organism or group of organisms (UNDP, n.d.). At the United Nations Conference on the Environment in Stockholm (1972) it was defined as the set of physical, chemical, biological, and social components capable of causing effects, either directly or indirectly. It should be emphasized that there is the natural environment, and the built environment, in which the second comprises all the elements and processes made by man (Damián, 2009). Traditionally, the Hydrosphere, the Atmosphere, the Geosphere, and the Biosphere have been considered as the four most important spheres, but a fifth sphere called the Anthroposphere has now been included, which involves all human beings and the activities related to their development and survival. This contemporary vision promotes man as part of the environment, where it is about him not only minimizing the damage to the rest of the spheres but also being able to exercise beneficial actions for the entire planet.

2.2 Environmental crisis: Description and causes of the environmental crisis

The global environmental crisis can be described as multiple situations that determine the well-being of human beings as well as the intrinsic properties of the earth, putting at risk their survival (Monares, 2017), that is, it has consisted and consists of a series of events that degrade the environment almost irreparably; it is probably not possible to determine its beginnings exactly because some factors that contribute rapidly to this degradation have always existed, both in certain phenomena of nature and the development of man with his environment from the first moment.

It is inevitable to refer today to factors such as accelerated industrialization, internationalization, hyper urbanization, technological revolutions, and an expansion of human demand and consumption. For this reason, environmental crises come to represent the impossibility of nature to regenerate and reproduce at the same time as these anthropic

interventions (Mercado et al., 2006), is this knowledge about the scarcity of resources and their impossibility of regenerating; in conjunction with the idea that nature belongs to everyone and no one, which allows the creation of a scenario of an irrational struggle for its appropriation and use.

For the philosopher Vittorio Hösle (2017), the environmental crisis is also a spiritual crisis in which several factors have intervened such as the reduction of nature to a materialistic sense in which its quantity and profit predominate; the growth of technology and science that dispel the man-nature link; the emergence of trends that inhibit environmental responsibilities; the instrumentalization of nature and man for the production of labor and capital; and the predominance of the Western capitalist system. Obviously, from this perspective, human action would even be linked to environmental destruction on an ethical-spiritual level that prioritizes the growth and evolution of man, fading any link with the natural environment.

The global environmental crisis also goes hand in hand with the great demographic growth that accentuates the limited capacity of the land and that exceeds, in turn, the productive capacities of the resources to maintain the entire population (Trejos, 2011), these extensive populations generate environmental disasters as a means to achieve greater dynamics of hegemonic production and consumption; in addition, according to the book "The environmental crisis: analysis and alternatives" by Kaplan (1998), a greater number of inhabitants means a greater number of wastes, which challenge the ability of the biosphere to disperse, degrade and assimilate them. These dynamics have not favored adequate environmental protection because it prioritizes solutions to pollution and does not stop it at its source.

In this way, throughout history, there have been several events, derived mainly from human action, which confirm Hösle's thought and among which we must mention the first industrial revolution that arose in Britain in the second half of the eighteenth century, which played an important and decisive role in triggering the environmental crisis by signifying a radical change in the way of life of man. Pre-industrial European society was submerged in agriculture carried out with poor techniques, technology was precarious and production processes were mostly artisanal (Galbiatti, n.d.).

Galbiatti also notes that social, cultural, and technological changes were tilted towards supposed improvements that were reflected in greater commercial activities; technological innovations; increased use of raw materials such as iron and steel; artisanal labor was quickly replaced by specialized machinery; the use of new energy sources was promoted with the use of coal and steam engines became popular. All of these changes had a significant impact not only on society's lifestyle but also meant new and faster sources of environmental degradation.

Likewise, other events that marked the global environmental future were the two great world wars, the first occurring between the years 1914 and 1918 confirmed the disappearance of national borders concerning the geographical scope of environmental problems. This first war had great consequences for human development through the use of chemicals such as mustard and tear gas; and poison gas phosgene, which, with a high level of toxicity in both people and animals, generated unfavorable living conditions in which biodiversity and natural and cultural heritage disappeared every day (Reynosa, 2017).

On the other hand, Reynosa also places special emphasis on the devastating effects of World War II (1939-1945) in which the detonation of atomic bombs caused an irreparable loss in the environment. The detonation of these bombs resulted in the contamination of water supplies due to radioactivity, as well as countless corpses of decomposing people and animals; and hard-to-treat waste and wastewater (Organización Mundial de la Salud, 1993). Another milestone that marked the environmental spectrum was the Chernobyl nuclear accident in 1986 when the reactor of a nuclear power plant exploded and destroyed everything in its path (Blakemore, 2019), although there is much discussion about how the explosion originated, it is clear that this event also marked the social sphere of the time generating a palpable and devastating environmental impact until today.

The ecosystems that were affected by this accident were and are still studied today, as these studies have shown that radionuclide emissions in the first days after the explosion came to pollute approximately 200,000 square kilometers of Europe (Organismo Internacional de Energía Atómica, 2005), which provided the perfect scenario for the depletion of the ozone layer and its consequent melting of the poles and climate alternation.

Today, the environmental scenario is not only determined by wars or nuclear explosions, however, the human factor remains the greatest trigger for the worst crises, since the global

economic and social structure is based on a paradigm that constantly excludes human beings from nature, in such a way that nature is considered as a means of resources that never become extinct and is, therefore, exploited (Castro, 2000). In this way, the human being has been carrying out different activities to meet their needs, mainly economic, such as deforestation, large-scale mining, the exploitation of fossil fuels, livestock activity, the use of transgenics, the generation of industrial waste, hyper urbanization, the excessive use of single-use plastics, etc.

2.3 Consequences of the environmental crisis

The consequences of environmental degradation are evident, on the one hand, it has been shown through empirical evidence that this degradation is closely related to poverty and inequality, in a sense in which there are communities that, in certain geographical spaces and under different circumstances, may have less access to natural resources necessary to survive (Sánchez, 2019). As a consequence, Sánchez mentions that these people seek to carry out activities that facilitate inorganic economic growth and execute development ideas that damage the environment; this happens, for example, when a community allows the installation of an industry that generates jobs, but at the cost of environmental degradation and their health.

Likewise, it should be borne in mind that communities in situations of vulnerability will be compromised their ability to adapt to sudden environmental changes such as accelerated climate change (Barbier, 2010) or even their ability to cope when a natural disaster occurs that radically alters their lifestyle. Similarly, the gap between different strata is also accentuated at environmental levels, within communities that on the one hand do not participate in decision-making in this regard and that on the other hand are subject to the hegemonic economic development model of the day (Stokes et al., 2011).

On the other hand, a devastating consequence of environmental degradation is the loss of biodiversity, that is, the loss of the variety and variability of different types of living beings (Melendi et al., 2008), in this way, the functionality of the ecosystems that sustain life on earth is seriously affected. It accelerates the extinction of species of animals, plants, and the habitats where they develop, giving way to the destruction of a biological heritage that will not be transmittable to future generations. Likewise, as ecosystems and the habitats within them are lost, the livelihoods of the households of communities and tribes are also threatened (Kaplan, 1998).

To this must be added the accelerated industrial growth legitimized by concepts of economic growth and development normally driven by large organizations, which generates great changes in ecosystems through the pollution of water, air, and soils; and whose magnitude puts at risk the well-being of all forms of life (Suárez et al., 2014). Industrial activities are carried out in such a way that their production processes leave remains such as garbage, synthetic substances, and toxic chemicals that pollute ecosystems ending life within them, this occurs mostly in the seas and oceans that end up being the main recipients of industrial waste either by materials such as mercury or lead and synthetic compounds such as pesticides and plastics (Madsen, 2013).

Similarly, air pollution has serious consequences for the proper development of life and human health, since most activities carried out by humans produce emissions of gases, dust, vapors, and aerosols that, when diffused in the atmosphere, are part of biogeochemical processes and cycles that determine life on earth (Gutiérrez, 2018). Although these sources of pollution can be natural such as volcanic emissions, forest fires, or dust caused by the action of the wind, the sources of pollution can also be anthropogenic, that is, derived for example from the production of urban, agricultural, domestic and industrial and genetic pollutants (Colina, 2000), however, whatever the type of pollution, the risk to life and health on earth is incalculable.

These polluting processes represent the layers of environmental degradation in an iceberg whose tip is climate change, defined as changes in climate attributed directly or indirectly to human activities whose consequence is the alteration of the global atmosphere and which is reflected in the natural variability of the climate during comparable periods (Convención Marco de las Naciones Unidas sobre el Cambio Climático, 1992). Among the causes of climate change are greenhouse gas emissions, mostly derived, again, from human activity and the energy, industry, and transport, livestock, and forestry sectors; causing long-term greenhouse gases such as CO₂, methane (CH₄), nitrous oxide (N₂O) and halocarbons (Cordero, 2012).

The most alarming thing about this event is that it happens in such a way that it seems to go unnoticed in the eyes of human beings, especially in the eyes of those who, privileged, cannot feel its effects or deny them. Likewise, the problem lies on the shoulders of a few who, immersed in the unstoppable and imminent processes of globalization and homogenization,

assume responsibility and try to adapt their lifestyles to the accelerated environmental changes, at the expense of their individuality, autonomy, and even culture, therefore, environmental degradation shows that it does not know borders and even tries to solve itself far from the places where it began.

Importantly, the environmental prospects for the future are quite discouraging, as it is clear that the hegemonic economic model will increase its predatory character in which the reconciliation between humans and nature becomes utopian. In 2012, the Organization for Economic Co-operation and Development (OECD) established a series of environmental projections for the year 2050 highlighting the accelerated population growth that will lead to a significant increase in the demand for natural resources, a demand that will be supported by changes in lifestyles that will lean towards greater consumption, similarly, 70% of the population is expected to be urban, so air pollution will increase irretrievably. Similarly, the OECD determines a growing concern regarding a more harmful climate change with an increase in the emission of greenhouse gases of up to 50%, therefore, it is estimated that the global temperature will be established between 3 ° C and 6 ° C by the end of the century.

The loss of biodiversity will also be a worrying factor, as activities related to agriculture, forestry, human settlements, and industrial development are expected to grow. Linked to this threat, the OECD also highlights a restriction on the availability of water, since, as the population increases, the demand for it will also increase, also taking into account that the water will mostly be contaminated by wastewater and its treatment will be difficult. Finally, air pollution and exposure to hazardous chemicals are expected to be one of the main risks to human health in cities.

2.4 Types of ecosystem services offered by the environment and its benefits

Interest in the knowledge and conceptualization of these services boomed with the launch of the United Nations initiative known as the "Millennium Ecosystem Assessment" or "MEA". Its main objective was to establish and evaluate the consequences of alterations in ecosystems that were decisive for human well-being, as well as to propose actions necessary for their conservation **Fuente especificada no válida..** According to the manual "The Importance of Ecosystem Services for Agriculture" (2017), ecosystem services are divided into four categories: provisioning services, regulatory services, cultural services, and support services.

1. **Supply services:** these types of services are also recognized as natural resources and are those tangible goods that are obtained from ecosystems, representing a benefit for people and whose obtaining usually requires the payment of a monetary value. Within these services the most common are:

- Food for human consumption;
- Raw material that is usually used in constructions, such as fuel and firewood;
- Medicines necessary to cure or prevent diseases in both humans and animals, and whose benefits are usually obtained from plants;
- Water supply is dependent on vegetation in ecosystems for its quantity and quality.

2. **Regulation services:** these services, as the name suggests, regulate the conditions within the spaces where life takes place as in the case of:

- The regulation of air quality, since vegetation can carry out processes of interception of polluting particles and absorption of gases, generating a kind of cleaning of the air;
- Carbon storage, as greenhouse gases are retained through vegetation that transfers carbon dioxide from the atmosphere to its biomass;
- Climate regulation through temperature-modifying trees;
- Wastewater treatment, through the action of microorganisms that undo waste in the soil, functioning as a kind of filter that allows eliminating microbes that could lead to diseases;
- Moderation of the effects of extreme events, as ecosystems can mitigate natural hazards such as flooding;
- Soil fertility and erosion prevention made possible by root fastening;
- Pollination is carried out by birds, insects, and even the wind, which together allow this essential process for the existence of seeds and fruits;
- Biological control, as ecosystems are the main regulators of pests and diseases through adjustment processes that occur through natural predators of pests.

3. **Cultural services:** cultural services are tangible or intangible services that can generate pleasant experiences of a spiritual and recreational nature. These services can be shared in the community or expressed from individuality, and are key to the development of life in society. They are found in the cases of:

- Recreation, both for physical and mental health, require green spaces;
- Tourism, as spaces conducive to leisure activities, are presented within the ecosystems and is a relevant activity for local economies;
- Spiritual experience and sense of belonging that take place within ecosystems that are sacred to some people, being even religious spaces and conducive to carry out rituals. In addition, they allow cultural identification;
- Aesthetic appreciation, allowing inspiration and admiration of the natural, cultural and artistic.

4. **Support services:** These services allow the correct development of all the above services, through natural processes as in the case of:

- The habitat of species, that is, the minimum conditions that both humans, animals, and plants need to live;
- The maintenance of genetic diversity is related to the maintenance of the variety of genes and their adaptability.

2.5 Dispute over ecosystem services

The benefits obtained from ecosystems materialize to the extent that they are demanded, enjoyed, or used by populations composed, in turn, by people who give certain values to these services **Fuente especificada no válida.** Likewise, the capacity of ecosystems to provide all these services can be modified with the accelerated intervention of man **Fuente especificada no válida.** that is, man does not access them with the sole purpose of satisfying basic needs, but seeks to have more power over them when making decisions related to their management, access, and distribution.

When talking about man's intervention in nature, it becomes necessary to use a particular term. The Royal Spanish Academy (2020), defines the anthropic as those modifications derived from human activity, and it has been precisely the predominance of this type of activities that have generated impacts, mostly negative, in ecosystems that are mainly affected by activities that lead to water pollution, loss of species and habitats, and even the loss of the resilience of these ecosystems **Fuente especificada no válida.** Similarly, the existence of social actors who seek access to these resources either for personal satisfaction or to perceive an economic benefit through them; establishes a political scenario of dispute in which conflicts are easily generated by the appropriation of ecosystem services **Fuente especificada no válida.** It should be noted that each of the actors makes a differentiated use of these services depending on the value they give to each of them, in addition, the need to access or not to certain services responds to the heterogeneity of populations that are part of different social, political, and cultural contexts.

This scenario of dispute over access to ecosystem services is the same scenario in which environmental dynamics have tilted towards the instrumentalization and commodification of mega-diverse ecosystems at the cost of their degradation. The way in which these services are accounted for and exploited has a direct effect on the economic perspective that revolves around them, they are related to a generalized idea in which without paying a cost for the human survival would not be possible, that is, the prices established reflect the vital functions of these services (Briceño et al., 2017). Ecosystem services can, on certain occasions, be provided free of charge, however, the accelerated growth of markets, globalization, and the political and legal instruments that derive from them, increasingly favor their commodification.

This monetary valuation of ecosystems generates a dynamic in which social actors, either individually or collectively, have the possibility of degrading ecosystems whenever a price is paid for it. This dynamic response to the "polluter pays" principle, which is introduced by the Organization for Economic Cooperation and Development OECD (Pérez et al., 2019) and consists of natural or legal persons who are responsible for pollution, must pay for all the necessary measures to reduce such pollution, as well as comply with environmental standards and norms (ibid.). However, this principle gives way to infinite possibilities of environmental degradation because it does not prohibit or prevent, but concentrates on a utopian repair since the environmental damages are, for the most part, irreparable.

On the other hand, this economic dimension can also produce a contrary dynamic in which natural or legal persons are economically compensated for not polluting (Aguilar et al, 2017), in such a way that environmental protection and access to ecosystem services do not revolve around the intrinsic qualities of nature, but the anthropocentric action of societies and their possibility of intervening or not in ecosystems.

2.6 Anthropocentric view of the environment

The word anthropocentrism is made up of two terms, the first is "Anthropos" of Greek origin and means "man". The second, Latin term is "centrum" which means "to center", that is, the man at the center of everything (Duarte, n.d.). The relationship between human beings and nature has always been determined, in the first instance, by the Judeo-Christian ideology that, through the narratives of the Old Testament, laid the foundations for the domination and exploitation of nature through a line of thought and instruments that affirm and legitimize the idea of a greater appreciation and veneration of that which is like God (Cristoffanini, 2017) that is, man, leaving nature only as a means to achieve ends, as an obstacle with which the human being is in his path and as an unlimited source of resources.

According to Lynn White (1967), professor of medieval history, the imposition and predominance of the Christian religion provoked three processes. In the first place, the cyclical conception of time was replaced by a linear conception of processes whose culmination is humans. Secondly, there was the de-sacralization of nature, that is, its intrinsic values were abandoned to exploit it indifferently from the life of natural beings who were no longer venerated by man and who, in addition, were replaced by angels and saints of the Western world. Thirdly, the very conception of existence ceased to have a hope of contemplation to become one of action and will, an idea that legitimized the conquering image of man. In the same way, it should be borne in mind that man from the beginning was able to take from nature what was necessary to dress, feed and even recreate (Sánchez et al., 2017). This dichotomy and antagonism between man and nature is not generated solely from the idea that both are different and irretrievably separated but reinforces the idea that man is superior and that for this reason, he can dispose of it indiscriminately.

Gradually, man has assumed his character as a conqueror and dominator of nature, driven by a desire for greater production and wealth; governed by the law of accumulation (Giraldo et al., 2017). Therefore, nature is completely detached from its intrinsic values and is defined and valued according to human standards. Man, in order to exercise his control, was devising increasingly modern ways to facilitate his access to nature, even from his initiation into agricultural and livestock practices with which he gained greater independence and separation from the environment, as well as saw it strictly necessary to adapt nature to population growth, explore and modify ecosystems and reach animal domestication and extinction (Castillo et al., 2017).

Through the growth of technology and science, the commodification of nature has been made possible, which becomes nothing more than an object of man for his survival; this idea has endured over time because the anthropocentric vision states that only human beings can be considered subjects of law, with duties, obligations, and morality, characteristics derived from their rationality (Rosales, 2009). It is considered that the origin of the instrumentalization of nature is found in the seventeenth century with René Descartes who, by moving completely away from the mystical and spiritual conception of nature, incited a modern conception of it (Aledo et al., 2001), and, by identifying it only as an object, its qualities as a creator of life disappear and its remaining qualities become assigned by man.

Other ways of relating to nature have emerged over the years, but these forms have not been dissociated from the anthropocentric vision since the scientific and technological vision of nature has great influence, which although it allows to identify and understand the gravity of the environmental crisis, caused, paradoxically, by the human being, it also gives way to visualize it as a mere object of experimentation, study, and measurement (Seminario, 2017). Likewise, the current environmental landscape is governed by the protection of nature that revolves around the ethical duty to take care of it in such a way that the survival of man is assured, again the intrinsic values of nature are put in the last plane and the human being ends up being the one who has the last word on the environmental future.

2.7 Biocentric view of the environment

In contrast to anthropocentrism arises biocentrism, a vision that responds to a notion that puts man and nature on the same level, a term whose etymological roots come from the Greek

"bios" which means "life" and from the Latin "centrum" which means life, that is, life is at the center of everything (Bellomo, 2019). In this way, biocentrism places the human being as one more member of nature that develops and lives in harmony with the rest of the members that make up a whole, in such a way that nature has a value in itself and does not respond to values assigned by the human being.

It was not until the 70s, that certain environmental groups determined the seriousness of the environmental future and proposed the rethinking of the human-nature relationship towards a deeper interrelation between the two (Bezerra, 2011), this era was quite influenced by the American ecologist and scientist Aldo Leopold, who, through his popular book *The Ethics of the Earth*, whose objective was to highlight the idea that the earth is not the object of appropriation but as a living space where each element exists in harmony (Kwiatkowska, 2018). This thought is joined by that of Arne Naess, Norwegian philosopher and founder of deep ecology who through it promoted the intrinsic value of non-human life and the recognition of the role and dependence of the human being in the cyclical processes of nature (Martínez et al., 2017); this is how he suggests that there is an equivalence between each element of the environment so that neither should be subordinated to the other.

Within this context, The Natural Contract of the French philosopher Michel Serres is also evoked, in which reconciliation between man and nature is proposed, possible only when man recognizes the earth as a being that also has life. Serres was referring to a kind of contract because man should return to the earth, reciprocally the resources he used (Marín, 2016); however, he also referred to a contract as the metaphysical recognition of each collectivity that develops its life and work in the same global space as the others (Serres, 1990). Within the thought of Serres reciprocity is the cornerstone of relations, in this case, the relationship being human-nature by which a mutual benefit is created, on the one hand, the earth benefiting from the care of man to the extent that he maintains a close bond with it, and man benefiting not precisely in a sense of exploitation of nature and its resources, but being part of it and its components. Likewise, the Andean cosmovision supports this approach since it proposes that man and nature are complementary pairs and that both are on the same plane where there is no man-nature dichotomy and both have and give life. According to Lajo (2003), the indigenous people of the Andes call "Pacha" to be part of the land, but they also refer to "being earth", that is, that man fulfills his complete life cycle being one with the earth.

In the same way, Lajo explains that man is nothing more than an element in the universe so by himself he is nothing.

From the biocentric perspective, humanity is reaffirmed as a group whose roots are found in processes that are created and preserved in possibilities of infinite interrelations of which the human being is part (Moguel, n.d.) In this way, man ceases to be the protagonist of the earth to become a part of it, it should be emphasized that when speaking of part there is no reference to a separate element that develops independently of its peers, that is, in the scene both man and any other element of nature such as animals and plants, they play a fundamental role in the harmonious sustaining of life. Biocentrism, from different perspectives, also endorses and is nourished by the sensocentrist ethical position which grants a morality to all beings capable of feeling, be it pain, cold, happiness, and even hunger, becoming a fundamental task to protect them from any discomfort (Abad, 2018). However, it is common that these characteristics are mostly attributable to animals because for man it is easier to recognize in them any feeling, but, when talking about plants and, in general, vegetation, these are seen as beings alien to a feeling and morality, however, their existence is a crucial part of life itself by intervening in the harmonious relationship with man, animals, stars, inanimate beings, etc. In addition, they are a crucial part of the Andean cosmovision that supports their healing and restorative properties, thus maintaining balance on earth and ensuring the permanence of the rest of the elements (Oñate et al., 2016).

Currently, the philosopher Mark Sagoff proposes an ethical transformation to reach environmental protection disconnected from an environmental crisis, that is, that there is no protection incentivized to protect man from his destruction, but protection stimulated by the intrinsic values of nature and the rest of the elements, totally stripping away a reductionist economic vision (Rozzi, 1997). Likewise, it is important to recognize that all these biocentric currents of thought by themselves are just that, currents of thought since both ecologists and environmentalists must generate the necessary political discussion to incorporate the new ways of determining nature, in the same way, it should be emphasized that both biocentric and anthropocentric perspectives can incorporate common elements in even complement each other because, depending on the position assumed, both criteria can be multidimensional.

CHAPTER 3

THE ENVIRONMENTAL MANAGEMENT OF THE ECUADORIAN AMAZON AND THE ROLE OF INTERNATIONAL COOPERATION

3.1 Amazon

The Amazon has an area of around 6.7 million km², its surface covers a third of South America and also constitutes the largest hydrographic system in the world. It is important to know that it provides 50% of the world's oxygen consumption. Likewise, its territory and responsibility are distributed among eight countries that are Brazil (59.17% of the biome), Peru (11.27%), Colombia (7.94%), Venezuela (6.69%), Bolivia (5.99%), Guyana (3.51%), Suriname (2.35%), Ecuador (1.75%) and French Guiana (1.33%) (WWF, 2016). According to the Economic Commission for Latin America and the Caribbean (ECLAC), it is estimated that the forests belonging to the Amazon offer the greatest biodiversity of flora and fauna on the planet, and on their surface can cohabit 50% of the total of existing living species. Currently, the Amazon has half of the biodiversity worldwide, which is why its devastation may mean that future generations cannot take advantage of or enjoy current well-being or genetic diversity, this is because the biome is rich in ecosystem services and important in the control of climate change (CEPAL, 2013). Among the ecosystem services that the Amazon can provide, which will be explained in depth later, are the elimination of pollutants in the air, maintenance of nutrients by the water cycle, conservation of wild fauna and flora, generation of soils, and climate regulation both locally and globally.

3.2 Amazonia history and transformation

Humans have inhabited the Amazon for at least 11,000 years so it is essential for indigenous peoples because they built their lives both from the river and the forest either using different resources such as wood to build houses and canoes; palm leaves for the roofs of dwellings; tree resins such as gum; fruits, fish and wild animals as food; among others. Human population and food production grew rapidly during the mid-Holocene and complex societies developed in resource-rich areas, creating domesticated landscapes that had profound impacts on local and regional ecology. Life changed drastically with the arrival of

Europeans, later with Africans and Asians because with them arose the exploitation of natural resources, slavery, and genocides (WWF, 2016).

The modern transformation of Amazon occurs with the above mentioned, due to the great demand for rubber linked to the automotive industry. In 1950, many changes began with settlements within the Amazon a rapid growth in the flow of people, and changes related to land and water use, especially in the felling of forests and construction of roads. All these changes were added to the geopolitical changes related to national security and integration that increased the construction of roads and military presence, which negatively impacted the local culture. It is important to mention that the construction of roads led to more exploration and an increase in the exploitation of resources, such as the expansion of soybean plantations in the Brazilian Amazon, and access to more gas and oil deposits through the Amazon region in Andean countries.

Indigenous peoples over the years have become of great importance within the Amazon for their worldview, ecological knowledge, and the persecution they have had to face due to the rights violated, in such a way that it becomes a priority which the visibility of indigenous territories is urgent. Radical changes at the technological and environmental levels have caused a lot of pressure on the ancient traditions of these peoples, as a society and the development of the market have led these communities to abandon their traditional practices in terms of natural resources. Finally, this change is due to the increase in the population and the problems that exist about the existing resources within this biome, which, in some way, represents a change in the indigenous communities that inhabit them (WWF, 2016).

3.3 Role of global instruments in the Amazon

The countries that make up the Amazon biome make use of several global instruments to promote protected areas, sustainable land, and water management, sustainable development, and environmental management. The same previous version of the Millennium Development Goals (MDGs) has already been a stimulus for the creation of protected areas in the Amazon so the Sustainable Development Goals (SDGs) have better integrated it. That is why they seek to establish different agreements such as:

Table 4. Global instruments in environmental management

<p>United Nations Framework Convention on Climate Change (UNFCCC):</p>	<p>The United Nations Framework Convention on Climate Change entered into force on 21 March 1994 and has been ratified by 197 countries. Its objective is to stabilize the concentrations of greenhouse gases existing in the atmosphere in addition to the prevention of anthropogenic interference in the climate system. (United Nations, 2020).</p>
<p>UN Watercourses Convention:</p>	<p>The United Nations Convention on the Law of the Non-navigational Uses of International Watercourses is the only treaty universally applicable to shared freshwater resources since 1997. The UNWC could serve as a base at the transboundary level for the management and resolution of conflicts related to the international watercourses of the Amazon, however, none of the Amazonian countries is a signatory to it. (United Nations, 2009)</p>
<p>Convention Concerning the Protection of the World Cultural and Natural Heritage:</p>	<p>Natural World Heritage sites are the most essential ecosystems in the world. In total they are considered six places in the Amazon:</p> <ul style="list-style-type: none"> ❖ Parque Nacional Canaima, Venezuela. ❖ Reserva Natural de Surinam Central. ❖ Complejo de Conservación de la Amazonía Central, Brasil. ❖ Parque Nacional Noel Kempf Mercado, Bolivia. ❖ Parque Nacional del Manu, Perú. ❖ Parque Nacional Sangay, Ecuador.
<p>Biosphere Reserves – UNESCO:</p>	<p>The International Coordinating Council of UNESCO's Man and the Biosphere Programme (MAB) added 12 new sites to the World Network of Biosphere Reserves. These biosphere reserves are sites that the program has chosen to serve as laboratories and thus experience the integrated management of</p>

	<p>biological diversity and land, marine, coastal and freshwater resources. (UNESCO, 2019).</p>
<p>Ramsar Convention:</p>	<p>This agreement aims to make rational use of wetlands, according to the Convention wetlands refers to all terrestrial areas that are saturated or flooded with water temporarily or permanently; in addition, cooperate on transboundary wetlands and designate sites to include them in the Ramsar List of Wetlands of International Importance (Ramsar, 2014).</p>
<p>Sustainable Development Goals (SDGs):</p>	<p>Several of the SDGs refer to the environment among which are:</p> <ul style="list-style-type: none"> ❖ Goal 2. End hunger, achieve food security and better nutrition and promote sustainable agriculture. ❖ Goal 6. Ensure the availability and sustainable management of water and sanitation for all. ❖ Goal 9. Develop reliable, sustainable, and resilient infrastructure, including regional and cross-border infrastructure, to support economic development and human well-being, with an emphasis on affordable and equitable access for all. ❖ Goal 13. Take urgent action to combat climate change and its impacts. ❖ Goal 15. Protect, restore and promote the sustainable use of terrestrial ecosystems, manage forests sustainably, combat desertification, halt and reverse land degradation and halt biodiversity loss (Naciones Unidas, 2020).
<p>Minamata Convention:</p>	<p>This convention was concluded to protect human health and the environment from the adverse effects of mercury. The Convention seeks to draw attention to this metal, since, although its origin is natural, it has a wide use in everyday objects and is released into the atmosphere, soil, and water from various sources. For this reason, this Convention includes the prohibition of new mercury mines, the elimination or reduction of the use of mercury in several</p>

	products and processes, the promotion of measures to control emissions to air, land, and water, and finally the regulation of artisanal and small-scale mining. (ONU, 2020).
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3.4 Regional governance and key actors in the Amazon

At the regional level there are different treaties and organizations that are responsible for ensuring the care and protection of the Amazon, however, the most relevant treaty is the Amazon Cooperation Treaty (ATT), as it focuses on different issues such as forests, health, and biodiversity; in this way, it carries out several specific activities either in the short or medium-term for the member countries. This and other relevant organizations in this region will be mentioned below:

Amazon Cooperation Treaty Organization (ACTO): The Amazon Cooperation Treaty Organization (ACTO) is an intergovernmental organization that encourages sustainable development and social inclusion at the regional level, and is made up of eight countries that are: Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela. The ACTO has a Permanent Secretariat through which it coordinates procedures of the Amazon Cooperation Treaty (ATT). It should be emphasized that the ACTO is a contemporary instrument of the ATT with a broad vision of the South-South cooperation process. Its work as such is guided by the Strategic Agenda for Amazon Cooperation (AECA) that has a horizon of 8 years to implement it, this is approved by the Ministers of Foreign Affairs (OTCA, 2020).

According to the ACTO (2021), some of the projects achieved are:

Table 5. Projects carried out by the ACTO

Executed projects	Results
<p>Integrated and sustainable management of transboundary water resources of the Amazon River basin considering variability and climate change</p>	<p>Its objective was to strengthen the planning and execution of strategic activities for the protection and sustainable management of the water resources of the Amazon basin in the face of climate change in the region.</p> <p>The results achieved were:</p> <ul style="list-style-type: none"> • Application of the principle of Integrated Water Resources Management of the Amazon basin for the optimization of water use, transboundary concerns, among others. • Incorporation of the groundwater component in the Integrated Management of Water Resources of the Amazon basin. • Inclusion of climate variability and change issues in management policies to reduce the vulnerability of populations and ecosystems to extreme weather events. • Socioeconomic benefits for Amazonian communities, through the inclusion of agro-technological systems.
<p>Monitoring Project of Forest Cover in the Amazon Region /_Monitoring of Deforestation, Forest Use and Changes in Land Use in the Pan Amazon Forest</p>	<p>Its objective was to promote the development of information on the extent, quality, and national plans for Amazonian coverage.</p> <p>The results achieved were:</p> <ul style="list-style-type: none"> • Strengthen technical capacity and institutional management in the monitoring of forests belonging to the member countries of the ACTO. • Facilitate decision-making based on the state of natural resources and the impact that the implementation of measures in the Amazon Region would have.

<p>Program Strategic framework to develop a regional agenda for the protection of indigenous peoples in voluntary isolation and initial contact</p>	<p>Its objective was to contribute to the Regional Agenda for the Protection of Indigenous Peoples in Isolation and Initial Contact (PIACI), through the definition of policies and actions between governments, peoples, indigenous organizations, and Non-Governmental Organizations (NGOs).</p> <p>The results achieved were:</p> <ul style="list-style-type: none"> ● Elaboration of two instruments: the PIACI Health Care Guidelines and the PIACI Protection Alignments, which serve as inputs for public policies of national construction and legal tools in the Member Countries, thus creating and consolidating specialized sectors for the Protection of PIACI Rights in most Member Countries.
<p>Project Institutional strengthening of ACTO Member Countries in ecologically responsible forest management and conservation of biodiversity in the managed forests of the Amazon (ITTO/CBD/ACTO)</p>	<p>The objective of this project was to strengthen and develop capacities for the sustainable management and conservation of biodiversity in the Amazon rainforest.</p> <p>The results achieved were:</p> <ul style="list-style-type: none"> ● Achieve national assessments on sustainable forest management and biodiversity conservation. ● Improve sustainable forest management and biodiversity conservation in the Amazon region. ● Design a Regional Information and Knowledge Platform to facilitate the exchange of information and experiences on opportunities and challenges of sustainable forest management and biodiversity conservation in the Amazon.
	<p>Its objective was to develop national and international initiatives to improve the health of Amazonian populations.</p>

<p style="text-align: center;">Environmental Health Surveillance System Program for the Amazon Region (EHSP)</p>	<p>The results achieved were:</p> <ul style="list-style-type: none"> ● Establish 4 pilot border work points for environmental health surveillance. ● Develop a guide for adaptation to Climate Change from the point of view of health, based on topics such as Neglected Tropical Diseases, Mercury Pollution, Disasters, and Health Surveillance Indicators in Health for the Amazon.
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Source: executed projects, 2021, ACTO.

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Coordinator of the Indigenous Organizations of the Amazon Basin (COICA): the Coordinator of Indigenous Organizations of the Amazon Basin (COICA), is an indigenous organization of international convergence that seeks the promotion, protection, and security of indigenous peoples and territories through their ways of life, principles, and values (COICA, n.d.).

Latin American Energy Organization (OLADE): OLADE is an international organization in energy matters that facilitates cooperation, coordination, and advice in this area to protect, conserve, and defend the use of energy resources (WWF, 2016).

Latin American Network for Technical Cooperation in National Parks, other Protected Areas, Wild Flora and Fauna (REDPARQUE): the directors of REDPARQUES are very active partners of the World Wide Forum for Nature (WWF), it became a very important instrument to achieve cooperation throughout the continent because they facilitate regional technical cooperation through different strategies such as technical meetings in which both workshops and seminars are located, training, exchange of experiences through case studies, and finally the exchange of specialists and technical teams (WWF, 2016).

Regional and international NGOs: at the local, national, and regional level different NGOs play an important role in the conservation and development of the region; according to the World-Wide Fund for Nature (2016), these are:

- Analysis of the Amazon Rivers, a network of NGOs from the Amazon, ARA.
- Climate and Development Knowledge Network
- Fundación Futuro Latinoamericano, FFLA.
- World Wildlife Fund (WWF).
- Wildlife Conservation Society (WCS)
- The Nature Conservancy, TNC.
- Conservation International ARA, CI.
- The International Rivers Foundation.

3.5 History and background of the Ecuadorian Amazon

In the sixteenth and seventeenth centuries, La Real Audiencia de Quito thought about Amazon as a region and place where civilization did not inhabit and there was only barbarism, so it was subject to the laws of the jungle. The region between these centuries was populated by settlers, but in it also coexisted various native peoples who were subjected to the exploitation not only of its inhabitants but also of its mineral resources such as gold, that is, there was the destruction of both its social and natural system. Due to exploitation, between the years 1550 and 1760, there was a drop of more than 80% in the indigenous population (Arcos, Amazonía bajo amenaza, 2019).

Around the nineteenth century, there were changes since in the city of Quito there was talk of independence, that is how cities of the coast and mountains emerged; however, there was none within the Amazon, so it remained subject to the jurisdiction and decisions of the capital, Quito. Within all this period, the Ecuadorian Amazon had two primary functions, the first related to the border space; and the second, related to the economy, since the jungle was seen as an area of resources to exploit. A proof that its function was related to the border space, was the interest of Peru to enter the Amazon, which over time had a considerable growth, which was worrying for Ecuador, for the same reason, the need arose to have a

railway to the East since this would allow defending the borders against advances of the neighboring country (Ibid.).

According to Arcos (2019), at the end of the 60s and early 70s in the country, there was a problem due to the strong criticism of oil exploitation, because at that time the economy depended considerably on this natural resource due to its prices it became an important buffer of the national crisis. Therefore, the Ecuadorian state based on its colonizing policy promoted since the 60s was motivated by the expansion in the Amazon rainforest accompanied by extractivist activities, either to obtain mainly oil, rubber, or wood. Within this context, there is also the entry of oil companies into the Amazon that came to change the dynamics of this region, as indigenous peoples became the most affected by abuses when they were displaced from their territories since the state considered them as wastelands.

In fact, it was not until the 1990s that the national dream of Ecuador being an Amazonian country was built or idealized. This dream of the nation was present in the presidential speeches and even materialized slightly before with the entry into the Amazon Cooperation Treaty (ATT) in 1978. So, at the beginning of the 90s, the impulse of wanting to create an environmental institutionality is resumed, however, the country lacked a Ministry of Environment that was not created until 1996. For two decades despite the oil criticism that developed in the 70s, there was still talk of the little environmental concern in the country (idem).

3.6 Importance of the Ecuadorian Amazon

The Ecuadorian Amazon has an area of 123,000 km² and is composed of tropical rainforests that house the most abundant plant and animal habitats in the world, as it has different varieties of ecosystems. The interest in the conservation of the region has made different actors manage to make the State establish the National System of Protected Areas of Ecuador (SNAP) which is nothing more than the set of natural areas that are protected and that guarantee the coverage of important ecosystems, whether terrestrial, marine and coastal marine (Ministerio del Ambiente, 2020). This has led to 26% of the Amazon territory being protected by Biosphere Reserves, National Parks, Ecological Reserves, Fauna Production Reserves, Biological Reserves, and the Binational Park on the southeastern border with Peru (Paéz, UIDE, 2016).

The weakness of existing documents and reports on the Amazon is the lack of information on the importance given to the issue of biodiversity and what it represents for the Ecuadorian state (Mantilla, 2000). The Amazon in general can be described as essential for ancestral knowledge, natural resources, and for the very fact of being considered as an intangible heritage because it offers well-being to the population. For the same reason, a relationship between society and nature is sought within the parameters of participatory governance and sustainable development (Torres et al., 2014). Emphasizing that the degree of importance of the Amazon is not only fundamental for Ecuador, but also at the global level, because as could be seen at the beginning of chapter 2, the characteristics of the region are essential, one of these was mentioned in Chapter 1, where it is specified that the Amazon has the largest hydrographic basin on the planet.

Now, according to Páez (2016), the importance of the Ecuadorian Amazon is due to the following reasons:

Water

One of the outstanding resources of the Ecuadorian Amazon is water for its functions and abundance. At a global level, the Amazon basin is one of the areas that have the least settlement, but it also has too much availability of freshwater due to the large rainfall it has at the beginning of each year since the annual rainfall in this region is 3000 mm or more (Paéz, 2016). The main rivers in the area are the Pastaza and Napo rivers.

- Pastaza River: covers approximately 40 000 km² of the eastern slope of the Andes.
- Napo River: covers the northeastern quarter of Ecuador, and its streams are born from the thaws of the snow-capped Antisana and descend a distance of 400 km to a height of 200 m on the Peruvian edge.

Soil

The interesting thing about the soils of the Ecuadorian Amazon region is that it contains dense vegetation, but despite this, most of its soils are low in nutrients, in addition, to their low capacity in the retention of calcium, potassium, and phosphorus; which has confused

many people who study the area because it is assumed or known that under a forest the soils are fertile, but in this case, it is the opposite because unlike more temperate areas the nutrients are not found in the soil but in the forest, that is, it is the Amazon forest as such, which has a high capacity to reabsorb nutrients from fallen and decomposed organic matter (Paéz, 2016). The low nutrient content of the region is the cause of high temperatures, erosion, and its geological history, as intense weathering has removed nutrients from the minerals that form the soil (ibídem).

Ethnobotany

Ethnobotany is nothing more than the study of plants and their relationship with the behavior of local communities, this aims at the knowledge and rescue of traditional knowledge (Hidalgo, 2016). Studies on this topic have become important in recent years due to the accelerated loss of traditional ancestral knowledge and the degradation of forests. In the case of the Ecuadorian Amazon, the use of plants is linked to the cultural traditions that various indigenous communities have, so ethnobotany is essential to understand the use of flora and the identity of the communities. Currently, what ethnobotanists are looking for in the Ecuadorian state is to demonstrate that it is possible to know how to take advantage of existing plant diversity in a sustainable way through local practices, respecting both scientific knowledge and traditional ancestral knowledge (Paéz, 2016).

Diversity

Ecuador is the country that has the lowest territorial proportion of the Amazon, however, the biodiversity it has is enormous compared to other spaces that are large and are located in other countries which leads Ecuador to be recognized as one of the countries with the greatest biological diversity in the world, as it can have between 150 and 312 species of trees per hectare (Arcos, 2019). Additionally, it is among the ten countries with the highest absolute number of amphibians, birds, and butterflies; with the second place to have the largest number of orchid species in the world, and finally be home to 600 species of fish. According to Paéz (2016), the high rate of species in the Amazon region is due to the following reasons:

- High precipitation rates.
- Climatic regularity with high and uniform temperatures in the year.

- Presence of the Andes.

The geological changes in the region are due to the formation of the Isthmus of Panama and the geological refuges of the Pleistocene (Paéz, 2016).

3.7 Problems in the Ecuadorian Amazon

The Ecuadorian East had a radical change over the years, this went from being a neglected and empty space to a source of raw materials, hence the problems that arise within the Ecuadorian Amazon because regardless of the type of government and its political leaders, as well as the instruments and measures that have been taken for the protection and control of the Amazon, whether these are public policies, regulations or governance models, the country's economy continues to depend on an extractivist model. Additionally, external pressures do not know of political limits, so a single central problem is caused that is based on inadequate environmental governance because public policies allow control of this in relation to its space, population, and resources (Larrea, 2019).

The Ecuadorian State made possession of a strategic zone speaking geopolitically, but as it was named it also imposed public policies that have favored threatening the Amazon area. Proof of this is the oil policy that has been given and that is based on large-scale exploitation of crude oil, it is important to mention that this extraction happens on two levels, which are micro and macro; at the micro level the extractivist model for the economy in the small-term gives different employment opportunities and more when it is booming, however, in the long term it exposes to damage to local inhabitants and the overexploitation of natural resources; at the macro level, the extractive economy model turns out to be profitable in times of boom since no company, including the state, takes into account socio-environmental costs, however, in this sense, there is also the part of the decline where this non-model is not profitable since it leads to the depletion of reserves, increases in operating costs or fall in prices by substitution (López et al, 2013).

3.8 Environmental governance in the Ecuadorian Amazon

Environmental governance in Ecuador is understood as the legal, political and regulatory framework that gives society the ability to demand compliance with policies and participation

in decision-making on environmental issues. Global environmental governance at the international level took place between 1948 and 1973; however, in Ecuador, it occurs between the 50s and mid-80s due to the strong use that was given to natural resources, especially oil; that is, it appeared during the criticism that was given to the extractivist oil era (Arcos, 2019). According to Arcos (2019), within the theme of governance there are three stages within Ecuador; which are:

- 1) **First phase:** the construction that occurs between the State and the idea of governance over natural resources, which caused to seek a relationship between the populations of the Amazon and the extractive industry. This fact led to the search for alliances with non-governmental organizations that would form an environmental movement in the country.
- 2) **Second phase:** it occurs between the 80s and 90s, and arises from international actors, especially the UN and NGOs that led to conservationist ideals with ecological visions, thus developing the concept of sustainable development. At this stage, it is important to mention that the concept of sustainable development begins to take shape in 1987 with the Brundtland report that defined development as one that meets current needs without jeopardizing that of future generations. However, the issue of development was discussed internationally in 1992 at the Rio Summit.
- 3) **Third phase:** at this stage, relevance is given and nature is protected through several articles of the 2008 constitution, so it is argued that Ecuador came to understand the importance of it. However, some events also occurred that demonstrated contrary positions, such as:
 - The first, an international position that related to progressive issues based on the environment, such as the initiative of the Yasuní ITT to combat global warming. In this sense, it appeared to show the world the conservation of biodiversity and the non-deforestation of the National Park, for both a national and international cause, thus reaching conservation considerations on environmental issues (Arcos, 2019).

- The second and opposite position is when oil exploitation was strengthened to a greater degree as the main source of financial resources to the State, in this way mega-mining developed in the south of the Amazon, and the dependence on an extractivist trajectory within the country became evident again. Thus, giving the development of a pattern of extractivist development with a predatory character on the overexploitation of natural resources (*idem*).

Adequate environmental governance can become the answer to safeguard the Ecuadorian Amazon and in this way not only protect it from external threats but also internal threats, however, for this it is necessary that the laws not only enjoy legality but also legitimacy in order not to infringe and transfer the rights only of peoples but also of nature (Arcos, 2019); that is, it is necessary to have laws that are not only written but also executed and complied with, so it could be said that good governance consists and occurs from the existing laws in the countries as long as they are complied with and complied with as they are described in their legal framework.

3.9 Environmental legislation of Ecuador

3.9.1 Buen vivir – Sumak Kawsay

In addition to the initiative described, in the government of Rafael Correa, there was also the promulgation of the new Constitution of Ecuador in 2008, which brought with it an important milestone, since it arises from a new model, which is proposed as an alternative to development, based on Buen Vivir or Sumak Kawsay. This is based on the indigenous worldview of well-being and sustainable development where the environment and nature become an essential role in the history of the country, as they become the object and subject of rights respectively. Additionally, this model sought a development based on the balance between nature, society, and the economy as public policy. For the same reason, the Ecuadorian Constitution in Title VI, Article 275 expresses development as:

- **Art. 275:** Development is the organized, sustainable, and dynamic set of the economic, political, socio-cultural, and environmental, which is guaranteed based on the ideal of Buen Vivir.

Also in Article 276, numeral 4, it is mentioned that sustainable development about the environment will have the following objective:

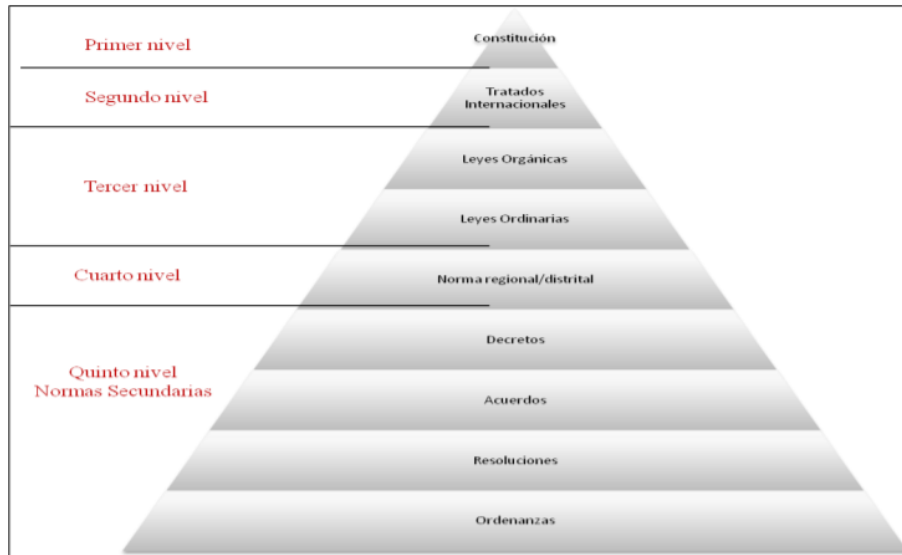
- **Art. 276, #4:** The recovery and conservation of nature are sought to maintain an environment that is healthy and sustainable, and in this way, people are guaranteed equitable, permanent, and quality access to water, air, and soil.

The Magna Carta talks about nature and resources as a key piece of development, because it is spoken of as the center of the debate because it is essential to recognize the limits of the activities carried out by human beings, which is a lifestyle achieved by an anthropocentric vision where man is seen above nature, this is due to the demand requirements of capital accumulation. Now, to have a better understanding of the environmental policies that occur within Ecuador, it is important to go to the current legal framework, which is headed by the Constitution because according to article 424 of the Constitution of the Republic of Ecuador the following is expressed:

- **Article 424:** The Constitution is considered as the supreme norm and prevails over any other legal system, so both norms and actors of public power must be based on existing constitutional provisions, otherwise they will not have legal effect.

It is based on this concept that the following image is established where the hierarchy of the norms can be observed:

Figure 1. Hierarchy of norms



Source: the environmental problems and the deterioration of natural resources in Ecuador.

A perspective from geography, by Silva, 2015, PUCE.

Produced by: authors

Just as we have the norms of the constitution of Ecuador that protect nature, there are also organic laws that reinforce it, among which, one of the primordial ones is:

3.9.2 Organic Law for the Integral Planning of the Special Amazonian Territorial Constituency

This law is based on norms established by the Constitution of Ecuador of 2008 and aims to regulate the Integral Planning of the Special Amazonian Territorial Circumscription and its territorial ordering, based on various social, cultural, environmental, and economic aspects to establish policies and regulations that guarantee human development about nature, in addition to the conservation of its ecosystems and biodiversity based on the principles of Sumak Kawsay. It is worth mentioning that this law applies to the provinces of Morona Santiago, Napo, Orellana, Pastaza, Sucumbíos, and Zamora Chinchipe including communities, peoples, and nationalities belonging to the area, that is, it applies both to public and private institutions, natural or legal persons that develop in some way activities in the Amazon Special Territorial Circumscription.

It is important to mention that the principles established by this law are fundamental for the decisions and actions that are taken on the Amazon territory, whether these are of a public

or private nature of natural and legal persons. According to the Organic Law for the Integral Planning of the Special Amazonian Territorial Constituency (2018), these are:

- **Unity:** to observe the unity of the legal order of the territory and the economy as an expression of the sovereignty of the Ecuadorian people.
- **Equality:** Amazonian residents are equal, so they will enjoy the same rights, duties, and opportunities.
- **Respect for the rights of nature:** guarantee the integrity, continuity, maintenance, balance, and conservation of the biodiversity of ecosystems and species of the Amazon, as well as their environmental functions, ecological and evolutionary processes that sustain life.
- **Rights:** Residents of the Amazon have the right to access to natural resources, employment, health, education at all levels, contracting of goods and services, and environmentally sustainable activities.
- **Right to preferential access:** residents of the Amazon will be considered preferentially for the contracting or public tender of merits.
- **Specialty:** the provisions of this law will prevail over those established in other norms of equal or lesser hierarchy.
- **Domicile of Taxation:** guarantee that the municipal Decentralized Autonomous Governments receive the taxes that correspond to them by current regulations and this Law.
- **Coordination and co-responsibility:** all levels of government in the Amazon have a responsibility to guarantee the exercise and enjoyment of citizenship rights, good living, and integral and sustainable development.
- **Sustainable Development:** a process by which the economic, social, cultural, ecological, and environmental fields are dynamically articulated to meet the needs of current and future generations.
- **Integral responsibility:** whoever promotes an activity that generates or may generate impact or damage on the environment, whether due to the use of substances, waste, toxic or hazardous materials, has shared responsibility.
- **Environmental responsibility:** whoever carries out or promotes an activity that has a negative impact on the ecosystem must incorporate into their operating costs all the necessary measures to prevent, avoid, mitigate or restore. Likewise, the injured parties

must be compensated, adopting measures to compensate the affected populations and the payment of the corresponding sanctions.

- **In dubio pro natura:** when there is a lack of information, legal vacuum, or contradiction of norms or there is doubt about the scope of the legal provisions on environmental matters, what most favors the environment and nature will be applied.
- **Systemic productivity:** sustainable productive activity, scientific research, technological innovation, and rescue of ancestral knowledge must be promoted.
- **Autonomy:** each level of government has the obligation and responsibility to develop its planning and territorial planning processes that go in conjunction with the Amazon Special Territorial Circumscription and with national planning.
- **Participation and social control:** comprehensive planning and territorial planning will take place through a participatory process of social, economic, and productive actors, public and private.
- **Interculturality and plurinationality:** under the principle of equality, promote interaction between different cultures and nationalities.
- **Participation of communes, peoples, and nationalities:** the State shall recognize and guarantee the exercise of the collective rights of communities, peoples, and nationalities, as well as their contributions to the management and conservation of biodiversity.

3.10 The Constitution of Ecuador and its relationship with the environment

One of the most important points of the 2008 Constitution is not only that it integrates nature and its resources within a new model, but it is also interesting that rights are granted to nature since all planning of a political nature must be based on environmental rights, responsibilities, and principles. Within the Constitution you can find the following articles that relate to nature and its resources based on the framework of Buen Vivir:

Chapter Two – Healthy Environment

- **Art. 14:** It is recognized that the population has the right to live in a healthy environment, which is ecologically balanced, so that in this way sustainability and Sumak Kawsay are guaranteed. In addition, it is in the public interest to preserve and

conserve the environment, ecosystems, and biodiversity through the prevention and recovery of natural spaces that have been degraded.

- **Art. 15:** Both in the public and private sectors, the state will encourage the use of clean technologies and alternative energy that has low impact and pollution on the environment. In addition, it prohibits the production, marketing and, inter alia, of chemical, biological and nuclear weapons, highly toxic persistent organic pollutants, internationally prohibited agrochemicals, and harmful experimental biological technologies and agents and genetically modified organisms that are harmful to human health or ecosystems (Constitución del Ecuador, 2008).

Chapter Seven – Rights of Nature

- **Art. 71:** Nature, where different forms of life occur, has the right to have its existence, maintenance, and regeneration of life cycles, structure, functions, and evolutionary processes respected. Therefore, every person will have the ability to demand compliance with these established rights before a public authority. Additionally, the state will promote that both natural and legal persons protect nature and all the elements that make up the ecosystem.
- **Art. 72:** Nature has the right to restoration in cases where the environmental impact has become serious or permanent, then the State will be in charge of establishing mechanisms that are effective to achieve restoration; in addition to implementing measures to eliminate or mitigate the consequences they have. It should be emphasized that this restoration differs from the obligation that both the State and individuals may have to compensate individuals who are affected by the damage caused to a sector of nature
- **Art 73:** For activities that may cause different damages such as the extinction of species, destruction of ecosystems, or permanent alteration in natural cycles, the state will be responsible for employing precautionary and restrictive measures.

- **Art 74:** The right to benefit from natural wealth belongs to all persons, communities, and peoples, as long as it is given within the framework of what is established by Buen Vivir; so environmental services are not appropriated.

Apart from the articles that are within the Constitution of Ecuador and that mention a healthy environment and the rights that nature has, also according to the Constitution of Ecuador (2008), there are some environmental principles, which are nothing more than fundamental ideas, which serve as a basis for basing legislation, that is, are those ideas that govern and guide laws, public policies and actions; which are as follows:

Table 6. Environmental principles

Principle	Constitution of Ecuador Article	Objetive
Pro natura	Art. 395, #4.	In the event that there is a doubt about a legal provision in reference to environmental issues, the one that benefits the protection of nature will be applied.
Prevention	Art. 396	The state will be in charge of taking measures that have a lower impact on the environment in the face of scientific evidence of the damage. In addition, all damage to the environment must be restored; likewise, affected individuals and communities must be compensated.
Precaution	Art. 396	The state will be in charge of taking effective and timely measures to avoid negative environmental impacts in the face of the certainty of damage due to the fact that there is no scientific evidence of it.

Active legitimation	Art. 71	Any person may demand the rights of nature; in addition, the state will encourage the protection of the same and promote the protection of any ecosystem.
Burden of proof	Art. 397, #1.	If a person is sued for damage to the environment, the same, which is the defendant, must prove that he has not caused such damage, this because nature cannot prove it as a person normally would.

Source: Constitution of the Republic of Ecuador, 2008.

Produced by: authors

3.11 Ecuador's environmental legislation and its relationship with the Amazon

The Ecuadorian Constitution has provisions that protect nature, however, it has a contradiction about its rights and the Amazon, since it continues to have the absence of a national policy that is directed in a direct way towards the development of the Amazon region and that this is given sustainably and all its norms are fully complied with. Although this region has two provisions, these are directed more to what the Amazon is and its importance as an ecosystem, such as the following articles:

- Art. 250: The territory that makes up the provinces that belong to the Amazon are part of an ecosystem that is of importance for the environmental balance, not only of Ecuador but of the planet, so a territorial ordering is guaranteed for the conservation and projection of its space based on the Sumak Kawsay.
- Art 259: To take care of the biodiversity of the Amazon, the state and decentralized autonomous governments shall adopt policies based on sustainable development (Constitución del Ecuador, 2008).

Taking into account the above, although the Constitution has these two provisions on the Amazon, not many of the times they are put into practice, causing a lack of legitimacy before

society. Likewise, it is worth mentioning that within the section on a healthy environment of the Ecuadorian Constitution where provisions of nature are given In Article 14, it is explained that it is recognized that the population has the right to live in a healthy environment, based on an anthropocentric vision despite being in an environmental issue, because as such it does not specify the right of nature but the right that human beings have to live in an environment that is stable and that offers quality of life. In the end, if the extractivist economy is not overcome, the relationship of care towards the Amazon will not change at all; however, overcoming this model would mean for Ecuador to demand productive transformation schemes as an alternative for better management that is both effective and efficient of ecosystems; in the same way, this would cause the decrease of the socio-environmental vulnerability of the Amazon to climate change.

3.12 The role of international cooperation in environmental protection in Ecuador

The emergence and application of international cooperation in environmental matters in Ecuador have been part of an evolutionary process of which it is important to emphasize certain events that have pursued the purpose of protecting nature. To this end, it is necessary to define the framework in which international environmental cooperation is developed in Ecuador to understand where its efforts are headed. For this reason, it is necessary to go back to 2008, since it was in this year when the Constitution of the Republic was distinguished by being the first to recognize nature as a subject of rights and also by proposing decentralized international cooperation through the participation of local governments and civil society (López, 2018).

The first intention is reflected in the Seventh Chapter of said Constitution, Rights of Nature Art.71: "*Nature or Pacha Mama, where life is reproduced and realized, has the right to have its existence fully respected and the maintenance and regeneration of its life cycles, structure, functions, and evolutionary processes.*" On the other hand, articles 263 numeral 8, 264 numeral 14, and 267 numeral 7 of the same Constitution, establish that the provincial, municipal and parish governments will have powers to process international cooperation in the execution of their activities (Pérez, 2014). In turn, decentralized cooperation can be defined as the group of international cooperation actions that is carried out by sub-state administrations such as autonomous governments, councils, or municipalities, in such a way

that their cooperation initiatives are decentralized through the incorporation of new actors of civil society and a more inclusive relationship with the countries of the global south (Dubois, n.d.). In this way, the advantages of its application in Ecuador reflect a greater promotion of associative networks and more participatory democracies, where civil society decides on its development (Riofrio et al., 2013).

It is necessary to emphasize that decentralization in Ecuador is regulated by the Organic Code of Territorial Organization, Autonomy and Decentralization (COOTAD), which indicates the political-administrative organization of the Ecuadorian State within the territory; the regime of the different levels of decentralized autonomous governments and the special regimes, to guarantee their political, administrative and financial autonomy (COOTAD, 2019). The different levels of government expand efforts in terms of international cooperation and all have relevant competencies in environmental management. According to the National Council of Competences of Ecuador (2015), the provincial GADs are competent in the following areas: grant environmental licenses, carry out the control and monitoring of the same before the Unified System of Environmental Management; control the conservation, use, and rational use of forest lands and native forests within their territorial constituency. Likewise, the provinces are in charge of controlling compliance with the environmental parameters of water, soil, air, and noise established by the national environmental authority. Regarding the environmental management competencies of the municipal GADs, the National Council of Competences of Ecuador (2015) indicates that they are responsible for the creation and implementation of management plans and monitoring systems, in addition to making decisions on licensing, administration, and exploitation of arid and stony materials. Finally, the Council establishes that rural parish GADs have the competence to promote activities of biodiversity preservation and environmental protection. Likewise, they are in charge of promoting and creating plans, programs, and projects for the conservation, promotion, protection, research, management, industrialization, and commercialization of forest resources, natural areas, and wildlife.

Taking this into account, under the guidelines set out in the Constitution and in accordance with the Plan Nacional del Buen Vivir, the regulations regarding international cooperation were strengthened to contribute to the defense of national interests in different areas. Along with this background, it is necessary to mention the Ecuadorian Agency for Cooperation, created then for the implementation of general strategies for international

cooperation, which was transformed into the Technical Secretariat for International Cooperation (SETECI) by Executive Decree No. 4299 on July 15, 2010, establishing new competencies for the articulation, management, and negotiation of international cooperation resources (Secretaría Técnica de Cooperación Internacional, 2015).

The emergence of SETECI should be mentioned since this Secretariat made visible the need to insert transversal approaches for the implementation of the Plan Nacional del Buen Vivir, a multisectoral state plan that was created to eradicate poverty, promote sustainable development, and the equitable redistribution of resources and wealth (La Secretaría Nacional de Planificación y Desarrollo, 2013). Similarly, the Technical Secretariat for International Cooperation (2015) refers to these cross-cutting approaches as those that must be included when carrying out any type of cooperation in Ecuador, both in reception and promotion of initiatives in each of the phases of the cooperation cycle. Likewise, the approach of these cross-cutting approaches varies depending on their influence, impact, and long-term sustainability; these being environmental sustainability, gender equity, interculturality, equitable development of territories, etc. (ibid.)

As environmental sustainability is one of the central focuses of Ecuadorian cooperation, it put as a starting point respect for Objective 7 of the Plan Nacional del Buen Vivir in its period 2013-2017, this objective refers to: "Guarantee the rights of nature and promote environmental, territorial and global sustainability" (Ministerio del Ambiente, Agua y Transición Ecológica, 2013). In the same way, this plan also indicated that one of the greatest comparative advantages of Ecuador is its biodiversity, so it should be conserved and used sustainably in all its aspects to include within its cooperation strategies the adaptation and mitigation to climate change, the use of clean technologies and the integral planning of proposals that can promote the inclusive development of Buen Vivir in harmony with nature (La Secretaría Nacional de Planificación y Desarrollo, 2013).

However, it is worth mentioning that Ecuador, the Ministry of the Environment, Water and Ecological Transition is the entity in charge of the rectory of environmental management, guaranteeing a healthy and ecologically balanced environment through the conservation and sustainable use of its biodiversity, the protection and improvement of environmental quality promoting sustainable development and social justice; and, the recognition of water, soil, and air as strategic natural (Ministerio del Ambiente, Agua y Transición Ecológica, 2021). In the

same way, it is in charge of designing, planning, and executing the different environmental policies, as well as facilitating strategies, programs, and projects for the care of the environment, the use of natural resources, and strengthening international cooperation projects in environmental matters (Pérez, 2014). In turn, this Ministry is made up of four Undersecretariats that manage aspects related to natural heritage, environmental quality, environmental change, and marine and coastal management (Ministerio del Ambiente, Agua y Transición Ecológica, 2021).

It should be noted that due to these goals proposed by the Ministry of Environment and Water, it has been possible to deploy technical and financial support for Ecuador, especially in areas such as the protection and sustainable use of biological diversity, the strengthening of the National System of Protected Areas (SNAP) and the preservation of natural heritage, the integral management of forest resources and water resources with special attention to basins, climate change, the introduction of renewable energies and energy efficiency (Pérez, 2014). To materialize the spirit of environmental protection, over time, the Ministry of the Environment, Water and Ecological Transition has carried out several emblematic projects and are the following:

3.12.1 National Program for the Integral Management of Solid Waste (PROGRAM-PNGIDS ECUADOR)

The National Program for the Integral Management of Solid Waste (PNGIDS) aims to strengthen the municipal management of solid waste in Ecuador, promoting the social inclusion of recyclers, the use of waste and promoting the application of the principle of Extended Producer Responsibility (EPR) at the level of private enterprise (Ministerio del Ambiente, Agua y Transición Ecológica, 2019). The principle of Extended Producer Responsibility (EPR) was defined by the Organization for Economic Cooperation and Development (OECD) as "an environmental policy in which the responsibility of the producer for his product is extended until the post-consumption moment at the end of the product life cycle" (Robayo, 2020)

The importance of the implementation of the program is palpable to this day because, in 2019, according to INEC, a population in Ecuador of 17,267,986 inhabitants was estimated, of which 64% belong to the urban area and the remaining 36% to the rural area, also,

according to the Population and Housing Census of INEC 2010, only 58% of existing homes had a solid waste collection service (Ministerio del Ambiente, Agua y Transición Ecológica, 2020). Therefore, at present it is estimated that the percentage of solid waste not collected, directly influences the generation of uncontrolled micro garbage dumps and garbage burning, for example, the estimated per capita generation for the year 2019 was approximately 0.86 kg/inhabitant * day, with an annual generation of 5.2 million tons (ibídem).

Article 55 item d) of the Organic Code of Territorial Organization, Autonomy and Decentralization (COOTAD), establishes that the Municipal Decentralized Autonomous Governments have the responsibility of "providing public services of drinking water, sewerage, wastewater treatment, solid waste management, environmental sanitation activities and those established by law. Under this concept, the Ministry of the Environment, Water and Ecological Transition currently promotes this program in such a way that processes are established for the integral and sustainable management of solid resources through the municipalities to strengthen recycling in the country and reduce dumps.

In the case of the Ecuadorian Amazon, the population increase and the use of territories to obtain natural resources have increased socio-environmental changes in terms of waste management, these problems are directly related to the deterioration of the natural landscape, water, air, and soil pollution; and human health risks due to the proliferation of disease-transmitting vectors (Bustos, 2009). Although the information and studies regarding the management of solid waste specifically in the Ecuadorian Amazon is somewhat scarce, the following table shows the population within the rural area, where the Amazon is included, which has benefited from the solid waste treatment carried out according to pngIDS and with the collaboration of the Municipal Decentralized Autonomous Governments.

Figure 2. Areas benefited by PNGIDS

AÑO 2019		
ÁREA URBANA	ÁREA RURAL	TOTAL
11.030.216	6.237.770	17.267.987

Source: PNGIDS 2019

Produced by: PNGIDS 2019

According to the above, it can be seen that although comprehensive waste management projects have been carried out in some municipalities, sustainable projects have not been carried out that increase the recovery and use of organic and inorganic waste, this responds to the lack of regulations that encourage the use of recycled raw material through a comprehensive and sustainable approach that reduces environmental pollution and improves the quality of life of the population (Ministerio del Ambiente, Agua y Transición Ecológica, 2019). Under these criteria, pngIDS proposes within its future strategies the technical closure of existing landfills and landfills throughout the country, as well as the addition of value in terms of the use of waste in all its stages (Ministerio del Ambiente, Agua y Transición Ecológica, 2021).

3.12.2 PRAS (Environmental and Social Reparation Program)

The Environmental and Social Reparation Program (PRAS) was born as the planning and execution mechanism that obeys, according to Meza et al. (2017), the birth in 2002, through the Organic Law of Responsibility, Stabilization and Fiscal Transparency (LOREYTF), of the "Fund for Stabilization, Social and Productive Investment and Reduction of Public Indebtedness" (FEIREP), which functioned as a mercantile trust administered by the Central Bank of Ecuador (Giraldo, 2009). Due to the amendments made to the LOREYTF, in 2005 the Cuenta Especial de Reactivación Productiva y Social del Desarrollo Científico-Tecnológico y de la Estabilización Fiscal (CEREPS), was born, which allocates 5% of the income to finance environmental repair activities caused by hydrocarbon activity (Yépez, 2011).

Within this context, the Environmental and Social Reparation Program (PRAS) was born in 2008, whose general objective is to implement mechanisms, instruments, and strategies for the integral reparation of the damage to the natural heritage and the living conditions of the affected populations, which have occurred due to the development of economic activities carried out by public and private actors integrating the Public Policy of Integral Reparation in the National Policy (Meza et al., 2017). In this way, it was sought that there were no more cases of socio-environmental damage that are neglected or incompletely attended, to reinforce the rights of nature and the right of people to live in a healthy and balanced environment (Ministerio del Ambiente, Agua y Transición Ecológica, 2021).

The PRAS has developed a management model that has varied according to the economic sectors that must be attended according to the priority in relation to the effects generated and its time of permanence in the environment, for this reason, it began its activities with the hydrocarbon and mining area, to continue gradually with the agro-industrial and industrial areas (Yépez, 2011). Similarly, Yépez (2011) indicates that three concepts should be highlighted as a significant contribution by the PRAS:

- 1) **Socio-environmental liabilities:** "liability" means environmental and social damage caused by economic activities that persist over time as unrepaired or inadequately repaired damage; as long as an adequate repair is not carried out, the costs that the responsible economic agent must assume increase. This concept focuses on the integrality of the damage, including environmental, social, cultural, and economic factors.
- 2) **Integral repair:** this concept contemplates "the reversal of the sum of the environmental and social damages that the person responsible for a given activity has produced" (Ministerio del Ambiente, Agua y Transición Ecológica, n.d.) de in this way, the PRAS has methodologies for the analysis of environmental problems that allow both study actions and social compensation to be put at the same level, that is, it takes into account each factor that intervenes in the affected area so that it can be treated in such a way that it recovers its balance.
- 3) **Social compensation:** corresponds to one of the edges of integral reparation, this intervenes when a right has been systematically violated and the damage is so severe that there is no way to correct it, these being, for example, the loss of life, irreversible damage to health or loss of cultural values. This tool is based on mechanisms that allow affected people or populations to prevent a possible repetition of the violation of the right and compensate what has been harmed.

This program under these concepts has facilitated, among other things, the emergence of initiatives by the Ministry of the Environment such as the Yasuní Technical Team, with the aim of developing the management of the necessary actions for the strengthening and maintenance of the ecological and social integrity of the Yasuní National Park and its areas

of influence (Meza et al., 2017). According to the Ministry of the Environment, Water and Ecological Transition (2020), the PRAS currently has a technical direction that is divided into the Integral Repair Unit and the Environmental Expertise Unit.

On the one hand, the Integral Repair Unit collects technical information for the characterization, diagnosis, and evaluation of environmental damages and liabilities to create statistics and socio-environmental indicators and design comprehensive repair plans. On the other hand, the Environmental Expertise Unit has the support of experts accredited to the Council of the Judiciary, to carry out assessments of environmental damage caused by anthropic activities, to prepare expert reports that are useful for justice operators who must determine the commission or not of an environmental crime, as well as economic appraisal reports of the restoration costs that arise from anthropic affectations.

It should be noted that this program has been carried out in priority areas such as the Puyango River basin, the Pucayacu River micro-basin, the Tenguel – Camilo Ponce Enríquez study area, Macuchi, Amazon District, and La Josefina (Ministerio del Ambiente, Agua y Transición Ecológica, 2021). Likewise, the Program has been of great relevance for environmental management in the Ecuadorian Amazon, since at the same time the Integral Repair Plan of the Amazon District (PRIDAM) emerged as an attempt to address the pollution caused by poorly managed socioeconomic activities, such as the poor management of hydrocarbon practices, an activity that has caused the accumulation of environmental liabilities throughout the territory known as the Amazon District, currently delimited by the jurisdiction of the provinces of Orellana and Sucumbíos (Ministerio del Ambiente, Agua y Transición Ecológica, 2017).

The National Information System of Integral Reparation (SINARI) and the Information Subsystem of the Evaluation and Planning of Integral Reparation (SIEPRI), as technical tools that reinforce the management of the State in terms of the integral reparation of environmental and social liabilities, indicate the following about the main sources that pollute the areas of the Pacayacu River, the Puyango River, the Tenguel-Camilo Ponce Enríquez River, Macuchi and the Amazon District and the number of projects that have been carried out in them.

➤ **Pacayacu River**

General Data

Figure 3. Pacayacu

Zona:	PACAYACU
Provincia(s):	Sucumbíos
Cantón(es):	Lago Agrio
Parroquia(s):	Pacayacu, Dureno y General Farfán
Superficie (hectáreas):	21435
Población beneficiaria:	11005
Actividad Económica de mayor impacto ambiental:	Actividad Hidrocarburífera
Principales contaminantes:	Hidrocarburos, HAPs, Metales Pesados (Cd, Ni, Pb, V, Ba)
Fuentes de contaminación:	Piscinas, fosas, derrames

Source: Information Subsystem of the Evaluation and Planning of the Integral Repair

Produced by: Information Subsystem of the Evaluation and Planning of the Integral Repair

Projects by Integral Repair Component

Figure 4. Integral repair component - Pacayacu

Componente	Detalle	No. De proyectos
Restauración Integral (RI)	RI: Remediación y Restauración	3
	RI: Compensación	2
Garantías de No Repetición (GNR)	GNR: Capacitación	1

Source: Information Subsystem of the Evaluation and Planning of the Integral Repair

Produced by: Information Subsystem of the Evaluation and Planning of the Integral Repair

➤ **Puyango**

General Data

Figure 5. Puyango

Zona:	PUYANGO
Provincia(s):	(2) El Oro y Loja
Cantón(es):	(18) Arenillas, Atahualpa, Balsas, Chilla, Marcabelí, Piñas, Portovelo, Zaruma, Las Iajas, Loja, Catamayo, Chaguarpamba, Paltas, Puyango, Saraguro, Zapotillo, Pindal, Olmedo.
Parroquia(s):	(66) Arenillas, Paccha, Ayapamba, Cordoncillo, Milagro, San José, Balsas, Bellamaria, Chilla, Marcabelí, El Ingenio, Piñas, Capiro (Cab. en la Capilla de Capiro)", La Bocana, Moromoro, San Roque (Ambrosio Maldonado), Saracay, Portovelo, Curtincapa, Morales, Salati, Zaruma, Arcapamba, Guanazan, Guizhaguiña, Huertas, Malvas, Muluncay Grande, Sinsao, Salvias, La Victoria, La Libertad, El Paraíso, San Isidro, El Cisne, Gualiel, Guayquichuma, San Pedro de la Bendita, Zambí, Chaguarpamba, Buenavista, El Rosario, Santa Rufina, Amarillos, Catacocha, Cangonama, Guachanama, Lauro Guerrero, Orianga, San Antonio, Alamor, Ciano, El Arenal, El Limo (Mariana de Jesús), Mercadillo, Vicentino, El Paraíso de Celen, Manu, San Pablo de Tenta, Mangahurco, Paletillas, Bolaspamba, Pindal, 12 de diciembre (Cab. en Achiotas)", Olmedo, La Tingue.
Superficie (hectáreas):	366255,1
Población beneficiaria:	182570
Actividad Económica de mayor impacto ambiental:	Actividad Minera
Principales contaminantes:	Cianuros, Hg, Pb
Fuentes de contaminación:	Relaveras, escombreras, bocaminas, canteras, infraestructura abandonada, terrazas aluviales

Source: Information Subsystem of the Evaluation and Planning of the Integral Repair

Produced by: Information Subsystem of the Evaluation and Planning of the Integral Repair

Projects by Integral Repair Component

Figure 6. Integral repair component - Puyango

Componente	Detalle	No. De proyectos
Restauración Integral (RI)	RI: Remediación y Restauración	15
	RI: Compensación	19
Garantías de No Repetición (GNR)	GNR: Capacitación	3
	GNR: Cambio de infraestructura y maquinaria	19
	GNR: Otros (Servicios, Control y Regulación, etc)	4

Source: Information Subsystem of the Evaluation and Planning of the Integral Repair

Produced by: Information Subsystem of the Evaluation and Planning of the Integral Repair

➤ **Tenguel**

General Data

Figure 7. Tenguel

Zona:	TENGUEL
Provincia(s):	(2) Guayas y Azuay
Cantón(es):	(4) Guayaquil, Camilo Ponce Enríquez, Pucará, Santa Isabel
Parroquia(s):	(3) Tenguel, Camilo Ponce Enríquez, Pucará
Superficie (hectáreas):	49826,81
Población beneficiaria:	29730
Actividad Económica de mayor impacto ambiental:	Actividad Minera, Actividades Agropecuarias

Source: Information Subsystem of the Evaluation and Planning of the Integral Repair

Produced by: Information Subsystem of the Evaluation and Planning of the Integral Repair

Projects by Integral Repair Component

Figure 8. Integral repair component - Tenguel

Componente	Detalle	No. De proyectos
Restauración Integral (RI)	RI: Remediación y Restauración	13
Garantías de No Repetición (GNR)	GNR: Cambio de Infraestructura y Maquinaria, Capacitación, Otros	1

Source: Information Subsystem of the Evaluation and Planning of the Integral Repair

Produced by: Information Subsystem of the Evaluation and Planning of the Integral Repair

➤ Machuchi

General Data

Figure 9. Machuchi

Zona:	MACUCHI
Provincia(s):	Cotopaxi
Cantón(es):	Pujilí
Parroquia(s):	El Tingo
Superficie (hectáreas):	1576
Población beneficiaria:	4051
Actividad Económica de mayor impacto ambiental:	Actividad minera (1937-1948)
Principales contaminantes:	Metales pesados: Pb, Zn, As, Cd, Cu, Fe
Fuentes de contaminación:	Relaveras, terrazas aluviales, bocaminas, y escombreras

Source: Information Subsystem of the Evaluation and Planning of the Integral Repair

Produced by: Information Subsystem of the Evaluation and Planning of the Integral Repair

Projects by Integral Repair Component

Figure 10. Integral repair component - Machuchi

Componente	Detalle	No. De proyectos
Restauración Integral (RI)	RI: Remediación y Restauración	5
	RI: Compensación	1
Garantías de No Repetición (GNR)	GNR: Capacitación	1

Source: Information Subsystem of the Evaluation and Planning of the Integral Repair

Produced by: Information Subsystem of the Evaluation and Planning of the Integral Repair

➤ Amazon District

General Data

Figure 11. Amazon District

Zona:	DISTRITO AMAZÓNICO
Provincia(s):	Orellana y Sucumbíos
Superficie (hectáreas):	204603,95
Población beneficiaria:	312868
Actividad Económica de mayor impacto ambiental:	Actividad Hidrocarburífera
Principales contaminantes:	Hidrocarburos, HAP's, Metales Pesados (Cd, Ni, Pb, V, Ba)
Fuentes de contaminación:	Piscinas, fosas, derrames

Source: Information Subsystem of the Evaluation and Planning of the Integral Repair

Produced by: Information Subsystem of the Evaluation and Planning of the Integral Repair

Projects by Integral Repair Component

Figure 12. Integral repair component - Amazon District

Componente	Detalle	No. De proyectos
Restauración Integral (RI)	RI: Remediación y Restauración	2
Garantías de No Repetición (GNR)	GNR: Capacitación	1

Source: Information Subsystem of the Evaluation and Planning of the Integral Repair

Produced by: Information Subsystem of the Evaluation and Planning of the Integral Repair

The National Information System of integral repair (SINARI) and the Information Subsystem of the Evaluation and Planning of Integral Repair (SIEPRI), do not provide more information on the results of the implementation of these projects, however, the PRAS indicates within its relevant accountability to the year 2020, that one of the goals set for the year 2021 is to update the information of SINARI concerning the year 2020, to have current information that allows prioritizing scientific research corresponding to environmental and social repair (Ministerio del Ambiente, Agua y Transición Ecológica, 2021).

3.12.3 "Guayaquil Ecological Project"

The Guayaquil Ecológico project aims to improve the quality of life of the inhabitants of the cities of Guayaquil and Durán, through the provision of green areas and public spaces, in addition, it participates in the restoration of the ecological quality of Santay Island and the Estero Salado (Ministerio del Ambiente, Agua y Transición Ecológica, 2021). This project was born due to the urgency of treating the delicate conditions inside the sections of these places, which were affected by the discharges of industrial and domestic waters with high levels of BOD (Biological Oxygen Demand), which is a parameter that measures the level of contamination of wastewater taking into account the level of oxygen that microorganisms consume at the time of degradation of the organic substances within these samples, making it a difficult biological process to treat (Induanálisis, 2019).

Among the main causes of this problem are the discharge of domestic wastewater, the mixture of rainwater with wastewater, the discharge of industrial wastewater and illicit

interconnections to the Estero Salado, the scarce technical control by the responsible personnel, the discharge of solid waste, the lack of collection coverage and the high urban growth (Ministerio de Ambiente, Agua y Transición Ecológica, 2011). On the other hand, among the consequences of this problem are the loss of biodiversity, the reduction of fishing, gastrointestinal diseases, unhealthiness, emission of bad odors, poor visual appearance, the loss of tourist attractions, and the loss of navigability (idem).

Likewise, the sludge found in these sections presented large concentrations of sulfides, mercury, and lead, as well as a large amount of solid waste that affects the quality of the water, in addition, these problems are increased because the banks of the estuaries are filled to urbanize, which decreases the channel of the estuary and increases the number of solids in suspension (Secretaría Técnica Planifica Ecuador, 2015). Among the actions adopted by the Guayaquil Ecological Project to address this problem, the relocation of families, reforestation, and environmental training and education (Ministerio de Ambiente, Agua y Transición Ecológica, n.d.) stand out. For this reason, the project has two main axes: environmental and social education; and the ecological technical issue. The axis of environmental and social education seeks to raise awareness among the population about the importance of appropriate practices against pollution so that they actively participate in the insertion of a new environmental culture, on the other hand, the axis on the ecological technical question seeks to create research criteria that allow raising the necessary information to correctly measure the levels of pollution (idem).

It is necessary to mention this project because being one of the emblematic projects of the Ministry of the Environment, Water and Ecological Transition, it has achieved favorable results for environmental management in the aforementioned areas, however, it would be convenient to prioritize areas such as the Ecuadorian Amazon region and deploy similar projects since here more than 60% of the population lives in the rural sector where the basic environmental sanitation infrastructure still represents large gaps and poor treatment of domestic effluents (Galarza, 2015). Similarly, adequate wastewater management in the Ecuadorian Amazon is strictly related to the important presence of indigenous peoples and communities in this area, whose knowledge, ancestral traditions, and community organization are well consolidated; in such a way that the processes of implementation of community sanitation systems must necessarily be born from the knowledge of these particularities and reinforce the education

especially of children and young people on appropriate environmental practices as mentioned in the axis of environmental and social education of the project (ibid.).

3.12.4 PANE (Physical Delimitation and Development of Sustainable Tourism in the Heritage of Natural Areas of the State)

Ecuador, due to its great biological diversity, has constitutionally contemplated the creation of a National System of Protected Areas (SNAP) that has not only the state subsystem, but also private, community, and local government subsystems and, in addition, with the recognition and support at the different levels of management, cooperation, and advice, in this way, has constituted the Heritage of Protected Natural Areas of Ecuador (PANE) (Ministerio del Ambiente, Agua y Transición Ecológica, 2014).

The subsystem has protected areas that extend throughout the Ecuadorian territory and represents an essential strategy to take care of ecosystems, biodiversity, and environmental services; in addition, it has conservation spaces determined in various categories such as National Parks, Biological Reserves, Fauna Production Reserves, Ecological Reserves, Natural Recreation Area and Marine Reserves (ibídem). The main threats faced by protected areas, affecting wildlife and ecosystems, are those related to anthropic pressures, including deforestation of forests, the replacement of land use with agricultural land, unsustainable hunting, the felling of timber trees and the trafficking of wildlife and plants (Romero, 2021).

For this reason, the Project of Physical Delimitation and Development of Sustainable Tourism in the Heritage of Natural Areas of the State was born as a process of creation and reinforcement of the Heritage of Natural Areas of the State (PANE), which, in the face of the deterioration of its structures, which did not have the necessary conditions to provide a quality service to those who visited them, they had to be restored and increased (Ministerio del Ambiente, Agua y Transición Ecológica, 2015). In this way, the general objective of this project is not only to improve the conditions of these areas for public or administrative use but also to delimit the boundaries of the protected areas to offer these services in the best way (idem).

In 2015, the Ministry of Environment, Water and Ecological Transition indicated that each area of the State Natural Areas Heritage (PANE) has different characteristics and functions

according to the objectives and challenges of conservation, in such a way that the actions of the project should be focused on specific protected areas so that the results are efficient. The Ministry also established that the areas to be addressed under this project would be the following:

- Parque Nacional Machalilla
- Parque Nacional Cotopaxi
- Parque Nacional Podocarpus
- Reserva Ecológica Cotacachi Cayapas
- Reserva Ecológica Cayambe Coca
- Reserva Ecológica Manglares Churute
- Reserva Ecológica Ilinizas
- Reserva Ecológica Antisana
- Reserva de Producción Faunística Cuyabeno
- Parque Nacional Yasuní
- Reserva de Producción de Fauna Chimborazo
- Reserva Geobotánica Pululahua
- Área Nacional de Recreación El Boliche
- Área Nacional de Recreación Isla Santay
- Reserva Ecológica Mache Chindul
- Galera San Francisco
- Refugio de Vida Silvestre Pasochoa
- El Ángel
- Refugio de Vida Silvestre Isla Corazón
- Parque Nacional Llanganates
- Reserva Bilógica Limoncocha
- Refugio de Vida Silvestre Manglares El Morro
- Parque Nacional Sangay

One of the strategies that have been designed to facilitate the protection of protected areas has been to solve the financial aspect of the National System of Protected Areas through an initiative of the Ministry of Environment and Water, technical assistance from the United

Nations Development Program (UNDP) and financing by the Global Environment Facility (Ministerio del Ambiente, Agua y Transición Ecológica, 2015). The main reason for placing the economic aspect as a priority is to obtain development results through a sustainable and healthy environment (ibídem). Likewise, the National System of Protected Areas has a support system called "Support Program for the National System of Protected Areas" (PASNAP), this aims to contribute to the conservation of biological diversity and the life of the population through the management and management of prioritized areas of SNAP, based on the commitments assumed by Ecuador before the Convention on Biological Diversity and the Plan Nacional del Buen Vivir 2013 - 2017 (Ministerio del Ambiente, Agua y Transición Ecológica, 2015).

3.12.5 National Forest Control System

The Forest Control System project arises due to the importance of the forest resource in Ecuador, being cataloged as one of the most diverse ecosystems in the world and which, in turn, is vulnerable to the high rate of deforestation (Ministerio del Ambiente, Agua y Transición Ecológica, 2013). In this way, the project is directed towards the conservation and sustainable management of natural resources, having as its main objective to reduce the impact of deforestation on wildlife, through an integrated forest control system located in natural forest areas, which are found throughout communities, ancestral peoples and protected areas (Ministerio del Ambiente, Agua y Transición Ecológica, 2021). According to the Ministry of Environment, Water and Ecological Transition (2013), the most outstanding actions that have harmed these areas are the following:

- Soil erosion is derived from agricultural activities.
- The felling of forests for use in agricultural activities.
- The contamination of water flows due to the excess of sediments generated by bad agricultural practices, as well as the deterioration of hydrographic basins with little flood control in rainy seasons and a decrease in water during dry periods.
- The systematic occupation of the humid tropical forest produces the loss of animals and plants, making it impossible to study them scientifically, ecologically, and economically.

- The deployment of national colonization policies that increase invasion in natural areas and the conversion of forests into grasslands and/or plantations.
- Insecurity in land tenure promotes deforestation and weakens indigenous communal property regimes that have traditionally sought the conservation of natural forests and indigenous crops.

Similarly, the Ministry of Environment, Water and Ecological Transition (2021) established that some of the activities that would be carried out to address these problems would be related to forest verification in the field and forest use programs, forest control on roads through the implementation of fixed posts and mobile forest and wildlife control units, forestry advice on the creation of plans and programs for forest use for small farmers in the Ecuadorian Amazon and northwestern Ecuador, and the afforestation and reforestation of 15,000 hectares with native species of each area for conservation and protection purposes.




On the other hand, the Ministry also indicated that those who would benefit from this project would be the Ecuadorian rural population that is located in forested areas and that depends on the use and exploitation of natural resources, the formal forestry sector linked to tasks of exploitation, transport, commercialization and transformation of forest resources, indigenous and Afro-Ecuadorian communities located in native forests throughout Ecuadorian territory; and the communities of settlers, indigenous people and the general population settled in degraded rural areas or without vegetation cover interested in the repopulation and afforestation and reforestation of their lands.

Among the strategies that have been chosen to solve these problems, has been the linking of the National Forest Control System with agencies such as the United Nations Development Program to carry out projects such as the National Forest Control System Project (PSNCF), which manage to merge the national objectives of contribution to the reduction of deforestation with the national priority agendas and policies of the sectors to reduce the origins and agents of deforestation, as well as to encourage the sustainable use of natural resources (Programa de las Naciones Unidas para el Desarrollo, n.d.). Likewise, this project was directed towards the control of the mobilization of forest products throughout the value chain, that is, from field use, mobilization, review, and commercialization in final destinations (ibid.).

Similarly, the Ministry of Environment, Water and Ecological Transition has facilitated international cooperation ties with countries such as Germany and Norway, which have transferred funds to contribute to the acquisition of vans, GPS equipment, and other material necessary to strengthen the activities of the National Forest Control System Project (El Universo, 2021). The acquisition of equipment such as these has made it possible to reinforce the strategies to control illegal logging throughout the territory, this, in turn, has allowed to have an impact on the reduction of the rate of deforestation and contribute to the use of wood of legal origin (idem).

The project does not have exact indicators of the results since its emergence in 2012, however, it was determined that in 2017 it had a partially effective implementation because in this year the review of 2,001,654 m3 of forest products was carried out in fixed control posts, mobile control and verification units to final destination centers such as industries, deposits and sawmills (Ministerio del Ambiente, Agua y Transición Ecológica, 2019). Consequently, 9,545 m3 of forest products were retained for presenting irregularities by the provisions of forest regulations. Similarly, 1,321 forest management programs approved at the national level by the technical offices of the Ministry of the Environment, Water and Ecological Transition of Ecuador were verified, of which 400 presented irregularities in both the preparation and execution (idem). The most current feedback on the implementation of the project corresponds to the year 2020, in the indicators presented by the Ministry of the Environment, Water and Ecological Transition (2020), it can be seen that its execution is still partially effective about the goals set:

Figure 13. Indicators of the flagship project national forest control system

	Indicador	Estado	Avance al Período	Meta	Resultado del Período	Fecha de Inicio	Último Período Actualizado
1	Número de programas verificados		54.41 %	272	148	01/01/2016	Marzo
2	Metros cúbicos de madera revisados por el Proyecto Sistema Nacional de Control Forestal		132.46 %	462,498.75	612,614.87	01/01/2016	Marzo
3	Número de programas aprobados por acceso al incentivo de manejo forestal		55.84 %	77	43	01/01/2016	Marzo

Source: Ministry of the Environment, Water and Ecological Transition, 2020

Produced by: Ministry of the Environment, Water and Ecological Transition, 2020

As can be seen in the table, the first indicator "Number of verified programs" in the completed state, set a target of 272 programs and obtained a result of 148 verified programs. Likewise, the second indicator "Cubic meters of wood reviewed by the National Forest Control

System Project" in execution, set a goal of 462,498.75, which managed to exceed a result of 612,614.87 cubic meters of wood reviewed. Finally, the indicator "Number of programs approved for access to the forest management incentive" in the completed state also obtained a lower result than that proposed with only 43 approved programs.

3.12.6 Socio Bosque - Conservation Project

The Socio Forest Conservation Project was born in 2008 under the fulfillment of the objective of the National Government to reduce the rate of deforestation by 50%, for this reason, the goal of this project is to achieve the conservation of native forests and moors throughout the national territory (Ministerio del Ambiente, Agua y Transición Ecológica, 2021). The project is based on the delivery of economic incentives to indigenous and peasant communities who voluntarily commit to the conservation and protection of their native forests, páramos, or other native vegetation, that is, these people receive the incentive once they comply with their commitments and the follow-ups established in the Agreement they sign with the Ministry of Environment and Water (*idem*). Similarly, according to the Ministry of Environment, Water and Ecological Transition (2021), those who are interested must comply with the delivery of certain documentation to be able to register, one of these being the title of ownership of the property, likewise, a study is made on the prioritization of areas that will end in the signing of an agreement with a duration of 20 years.

This project was carried out in the face of the urgency of protecting native forests, páramos, and other native vegetation covers, whose importance lies in the environmental services they offer, such as carbon storage, biodiversity refuge, soil protection, and freshwater reserves; in addition to representing a great economic, cultural and spiritual value (Ministerio del Ambiente, Agua y Transición Ecológica, 2013). Although Ecuador has a great wealth of forest cover, the country faces high levels of deforestation, which represents a great loss of environmental services and livelihood for those who live in the forest, in addition, high levels of CO₂ emissions (*idem*) are also produced.

The project has financing managed by the National Environmental Fund, which allows different companies, organizations, and national and international entities to contribute economically to the objective of Socio Bosque (Ministerio del Ambiente, Agua y Transición Ecológica, n.d.). However, Socio Bosque has managed to have an exclusive co-financing

through donations and international cooperation through the Socio Bosque Fund created in 2012 (idem), which is responsible for the management and administration of resources from international cooperation for the delivery of economic incentives, this, in turn, is divided into extinguishable resources and heritage resources (Fondo de Inversión Ambiental Sostenible, 2021). Extinguishable resources are those that stick directly with money; however, patrimonial resources are those that pay the incentives with the interest that is generated on the capital obtained (idem).

These types of incentives are used to generate a tool that enables the orientation of processes in which conservation directly benefits local people, for this reason, they become instruments that influence public or private behavior and that, to be effective, require support in the creation of policies, laws, regulations or public programs (García J. M., n.d.). It is thought that this type of incentive is linked to the concept of sustainability, as well as the concept of quality of life since it alters the behavior patterns of those who receive them, which, at the same time, reduces the negative effects on the environmental system (Secretaría Técnica Planifica Ecuador, 2016).

This project, in ten years, has managed to conserve 7% of the country's continental territory covered with vegetation, with thousands of beneficiaries of this economic incentive received by people who commit to the conservation of their forested spaces. In addition, the project has focused on carrying out inclusion processes as a central axis to maintain dialogue and rapprochement with communities and citizens in general (Ministerio del Ambiente, Agua y Transición Ecológica, n.d.). Currently, due to the health emergency caused by the Covid-19 virus, the Ministry of Environment and Water has been responsible for communicating to citizens that the Socio Bosque project manages collaboration with international aid workers to comply with the commitment to pay incentives to the project partners (Ministerio del Ambiente, Agua y Transición Ecológica, 2020).

3.13 Environmental governance in the Ecuadorian Amazon and international cooperation

Although the projects referred to above have a mostly national approach and application, some of them include edges in which international cooperation is possible, as could be seen in the case of the Socio Bosque Conservation Project. Likewise, the Ministry of Environment,

Water and Ecological Transition as the highest environmental authority in Ecuador since 1996 and, given the accelerated need to protect the important biodiversity present in Ecuador, has sought to follow the objectives of international cooperation that the Ministry of Environment, Water and Ecological Transition (2020) mention in its statute:

- Among the strategic objectives, Art.4 #5 establishes: "Increase environmental and water management within the framework of international cooperation".
- Within the attributions and responsibilities, paragraph m) establishes: "Establish mechanisms to identify and channel climate finance from national and international sources, to manage climate change mitigation measures in coordination with the area of international cooperation."
- The mission in the section on International Cooperation Management establishes: "To direct and coordinate the management of international affairs in environmental, climate change and water matters within the framework of international instruments ratified by the Ecuadorian State and signed by the Highest Authority; and to administer international cooperation aligned with ministerial objectives and development plans, for the efficient fulfillment of institutional attributions and responsibilities."
- Within the attributions and responsibilities of the Management of International Cooperation literal a) it is established: "Identify and coordinate with the ministerial office, the vice ministries, undersecretaries and institutions assigned the needs and national priorities environmental, water and climate change, in the field of relationship, management, and international cooperation".
- Within the attributions and responsibilities of the Management of International Cooperation literal b) it is established: "To direct the elaboration of strategies to channel financial and technical resources of international cooperation in the field of environment, water and climate change".
- Within the attributions and responsibilities of the Management of International Cooperation literal f) it is established: "To advise the authorities of the Ministry of the Environment and Water in matters of international relations, regional integration, and international cooperation".
- Within the attributions and responsibilities of the Management of International Cooperation literal h) it is established: "Act as a Focal Point around Mobilization of Resources from international cooperation, Multilateral, Bilateral, Regional

international agreements, and others on Environment and Water, in addition to all those delegated by the Highest Authority".

- Within the attributions and responsibilities of the Management of International Cooperation literal i) it is established: "To direct the participation of the Ministry of environment and water, its highest authority or its delegates to international cooperation agencies and agencies; as well as in the representations of Ecuador on issues of Environment, Water and Climate Change in the rest of the countries".
- Within the attributions and responsibilities of the Management of International Cooperation literal j) it is established: "To direct the formulation and subscription of Agreements for programs and projects in environmental, water and climate change matters financed by international cooperation".
- Within the attributions and responsibilities of the Management of International Cooperation literal k) it is established: "To direct the monitoring and evaluation of international instruments, on issues of Environment, Water and Climate Change, that have the support of international cooperation".
- Within the section of Products and Services in International Cooperation Management #1: "Develop international cooperation strategies with a methodology to channel and take advantage of opportunities for international technical and financial cooperation".
- Within the section of Products and Services in Management of International Cooperation # 6: "Prepare advisory documents to offers of international cooperation, international instruments and for acts required by the Administrative Units where the participation of the Highest Authority is required".
- Within the section of Products and Services in International Cooperation Management #7: "Develop a portfolio of Agreements of projects financed by international cooperation".
- Within the section of Products and Services in International Relations Management #5: "Report of support for monitoring and evaluation of international cooperation projects and programs of direct execution, led by the Monitoring and Evaluation Directorate".

Under these provisions, the Ministry of Environment, Water and Ecological Transition has carried out various international cooperation projects in different areas, in this sense, the relations that Ecuador maintains with certain countries or organizations that, according to the

Ministry of Foreign Affairs and Human Mobility, are those that represent a higher percentage of international cooperation will be highlighted:

3.13.1 Germany

The history of environmental cooperation between Ecuador and Germany is a history of more than forty years, that is, it is much older than the creation of the Ministry of the Environment, Water and Ecological Transition. There have been several phases and objectives of bilateral cooperation between the two countries, in which financial cooperation for the development of projects in this area has been highlighted, this financial cooperation reached 124 million euros until 2019, a figure that, in addition, increased in 2020 (Ministerio del Ambiente, Agua y Transición Ecológica, 2019) The Ministry of Environment, Water and Ecological Transition has also indicated that Germany is one of the nations that contributes most to the conservation of Ecuadorian biodiversity and that this cooperation is reflected in the progress of several projects at the internal level (*idem*).

Ecuador and Germany have prioritized cooperation focused on research on biodiversity and climate change, as well as the strengthening of national and regional projects and programs; and the definition of new forms of cooperation (Ministerio del Ambiente, Agua y Transición Ecológica, n.d.). For this reason, the Ecuadorian government has held meetings with representatives of the German government to present its policies, actions, and projects in environmental matters to reinforce projects such as the following (*ibídem*):

- **Support Program for the National System of Protected Areas-SNAP:** The Ministry of the Environment signed in 2014 a financial cooperation contract with the Government of Germany equivalent to 5.5 million euros to strengthen this program, especially to work in areas such as the Yasuní Biosphere Reserve (including the Yasuní National Park), the Cuyabeno Fauna Production Reserve and the Limoncocha Biological Reserve (Ministerio del Ambiente, Agua y Transición Ecológica, 2019). Likewise, the delivery of these funds that were given within the framework of the project "Support to the National System of Protected Areas" within the period 2011-2024, is used to improve the infrastructure, equipment, and institutional strengthening required to improve the program (*idem*).

- **Socio Forest Conservation Program (REDD Socio Bosque):** Germany invested USD 28 million to strengthen this program.
- **Forest Conservation (Socio Bosque) and REDD + (Reduction of Emissions from Deforestation and Forest Degradation):** the program seeks to achieve a decrease in the rate of deforestation in Ecuador with a contribution equivalent to 21.5 million euros.
- **Yasuní Biosphere Reserve Program (RBY):** the German Federal Government aims to contribute to the conservation, ecological, cultural integrity, and sustainable development of the RBY; while promoting community involvement.
- **Biodiversity, Climate Change and Sustainable Development Program (ProCamBío):** indigenous communities and producer organizations implement models of conservation and sustainable use of biodiversity taking into account climate change.

However, in 2014 some controversies arose between Ecuador and Germany because Ecuador indicated that German officials were meddling in the internal politics of the country, on one hand, German officials alleged, since they were contributing significantly to the Yasuní Project, that they had the right to know if the funds delivered were being used correctly and that for this reason, they had to visit the reserve (El Comercio, 2014). On the other hand, the Ecuadorian Government took this request as an offense and unilaterally ended the cooperation, also claiming that they had not received the full amount of financial cooperation that had been agreed (idem). After a period of ups and downs and tensions, in 2015 Ecuador resumed cooperation with Germany on environmental matters through intergovernmental dialogues that successfully reactivated the bilateral relationship (Ministerio del Ambiente, Agua y Transición Ecológica, 2015).

Since then, cooperation and negotiations have been carried out prioritizing the fight against climate change and the transparency of resource management, creating a space for cooperation based on mutual trust, shared values, and the will to contribute to sustainable development, beyond individual projects and programs (Embajada de Alemania Quito, 2019). In June 2020, a meeting called "Intergovernmental Exchange on Development Cooperation between Ecuador and Germany" was held, through which cooperation programs and projects for the coming years were proposed, with themes of green economic reactivation, through a financial

contribution of 10 million euros destined to the delivery of credits to SMEs (small and medium enterprises) (El Telégrafo, 2020). At this meeting, technical cooperation programs in the sector of sustainable urban development and the measures to be taken in the face of the health crisis caused by the Covid-19 virus were also approved (idem).

In the annexes section, you can find the environmental projects that have been carried out bilaterally between Ecuador and Germany in agreement with the Ministry of Foreign Affairs and Human Mobility (2021).

3.13.2 United States

The Ecuador-United States relationship has always been understood as a mostly commercial relationship, however, the United States has contributed on several occasions to the care of Ecuadorian biodiversity. Currently, the United States has been interested in collaborating with Ecuador on development aspects, which is why in 2020 the Government of Ecuador and the United States International Cooperation Agency (USAID) signed an agreement for 62.5 million dollars, which is intended to finance development projects that include projects of democratic governance and economic reactivation through the environment and energy (La República, 2020). This agreement also seeks to cover the protection and promotion of the rights of those who defend the environment and other vulnerable groups such as indigenous communities, as well as focuses on forest management, the protection of wildlife, investment in renewable energies, and the strengthening of environmental policies (idem).

USAID, within the memorandum of understanding that it maintains with Ecuador as part of its bilateral agreement, establishes that the most outstanding aspects for which it will work with Ecuador correspond to reducing the risk caused by natural disasters or other emergencies; to contribute to the social development of Ecuadorians; to promote contributions to the protection and conservation of the environment in Ecuador; to promote the sustainable management of Ecuador's natural resources and renewable energies; strengthening Ecuadorian public institutions, democratic governance, the fight against corruption, human rights and civil society; to promote education in Ecuador at all levels, including science, technology, and innovation, and contribute to the strengthening of the Ecuadorian system of care, integration, and protection of the rights of migrants and refugees (U.S Embassy et al., 2019).

Likewise, the American research center Earth Institute has signed an agreement with the Ministry of Environment and Water as a result of a common effort to operationalize technical assistance and the transfer of technology and knowledge; to achieve sustainable environmental management in areas such as biodiversity and climate change (Ministerio del Ambiente, Agua y Transición Ecológica, n.d.). Similarly, this agreement, according to the Ministry of Environment and Water, focuses on issues such as:

- Strategic advice and technical support in areas related to climate prediction, climate variability, and carbonization of economic systems in the country.
- Strategic advice and technical support in areas related to sustainable agriculture, water resources management, biodiversity conservation, waste management, ecosystem monitoring, resource quality information management, climate system modeling, and land-use changes.
- Provide policy advice in areas related to the post-2015 Goals, related to the Sustainable Development Goals, and specialized in those related to climate change, biodiversity, conservation, and environmental services.
- Joint research on research topics such as Amazonian tropical fish farming, agricultural and forestry management and pest control, breeding and production of promising wild species, monitoring of resources and exploitation rates, mechanisms of extraction of sustainable resources (oils, essential oils, dyes agents, fruits, etc.), restoration, permaculture and agroecology, ecosystem assessment, etc.
- Encourage exchange visits, research, educational programs, seminars, and conferences between the Ministry, the National Institute of Biodiversity, and the Institute.
- Train selected professors and researchers in areas related to sustainable development.

In 2021, under the presidency of Joe Biden, who has placed climate change and environmental management at the center of his national and foreign policies, USAID indicated that it will work with the Attorney General's Office on consolidating and strengthening the fight against environmental crimes in Ecuador, that is, those related to illegal wildlife trafficking, illegal fishing and illegal logging (U.S Embassy and Consulate in Ecuador, 2021). Likewise, USAID will support the development and execution of a specialized unit within the Prosecutor's Office to deal with wildlife crimes, curb the trafficking of Galapagos tortoises, stop the massive export of shark fins, and the illegal extraction of wood, among others (ibídem).

In the annexes section, you can find the environmental projects that have been carried out bilaterally between Ecuador and the United States in agreement with the Ministry of Foreign Affairs and Human Mobility (2021).

3.13.3 United Kingdom

Bilateral relations between Ecuador and the United Kingdom are based on trade cooperation, human rights, and environmental protection. To consolidate closer cooperation between the two countries in 2019, under the celebration of the 60th anniversary of the Charles Darwin Foundation, the United Kingdom agreed to support projects of the Galapagos Conservation Trust to address pollution caused by plastic (El Comercio, 2019). The UK works on various projects through the Galapagos Conservation Trust as it is a pioneering British non-profit organization that supports conservation projects for the Galapagos Islands, focusing on the restoration of natural habitats, the conservation of threatened species, and the creation of sustainable solutions (Galapagos Conservation Trust, 2021). Similarly, the United Kingdom announced that USD 7 million would be allocated to reforestation projects through the Green Climate Fund (El Comercio, 2019), a fund whose objective is to respond to climate change through investment in low-emission and climate-resilient development (Green Climate Fund, 2021).

Ecuador and the United Kingdom have not only emphasized the urgency of treating marine ecosystems due to plastic pollution but have also highlighted the support through a grant to Ecuadorian scientist Inty Gronneberg, for the realization of his innovation project to remove plastics from rivers and oceans (El Telégrafo, 2019). Likewise, the authorities of both countries have put as a priority within their talks the reduction of carbon emissions, which, both countries, under the Paris Agreement, committed reducing, in addition, the countries have stressed that the financing in environmental matters from the United Kingdom to Ecuador will focus on the prevention of deforestation and the realization of a Climate Action Plan for the city of Quito reduce its emissions and become carbon neutral by 2050 (ibídem).

Currently, Ecuador and the United Kingdom are preparing for the COP 26 Climate Change Conference, which will take place in Glasgow, United Kingdom, from November 1 to 12, 2021 to put on the table various issues of common interest, to reach negotiations on climate change

focusing on the actions that are implemented in Ecuador (Ministerio del Ambiente, Agua y Transición Ecológica, 2021). In this way, through different technical meetings, the commitment to carry out actions, programs, and projects that allow protecting ecosystems under a margin of sustainable development has been highlighted, in the same way, the situation of the Galapagos Marine Reserve and the System of Protected Areas as the main facilitators of national and international environmental care has been addressed (idem).

In the annexes section, you can find the environmental projects that have been carried out bilaterally between Ecuador and Reindo Unido in agreement with the Ministry of Foreign Affairs and Human Mobility (2021).

3.13.4 European Union

Ecuador has benefited from the relationship with the European Union for the commercial relationship they have maintained since the entry into force of their trade agreement in 2017 and which has sought to be consistent with the objective of sustainable development, in fact, Ecuador had very active participation in the negotiation of the multi-party agreement, by the principles established in the Constitution regarding environmental matters (Villagómez, n.d.). Within the framework of the signing of this agreement, the Delegation of the European Union in Ecuador signed in 2016 two direct contracts with the European Union for 1 million dollars each in order to cover the following aspects (Delegation of the European Union to Ecuador, 2017):

- 1) The improvement of the sustainable integrated management of solid waste in municipal services and the implementation of public policies on solid waste in Ecuador, to define management plans equipped with technical, administrative, and financial tools; as well as promoting inclusive and sustainable environmental management models.
- 2) The second contract was signed with the Consortium of Autonomous Provincial Governments of Ecuador (CONGOPE), to deploy actions aimed at addressing climate change.

Similarly, due to the mutual interest in issues such as environmental deterioration, it has led to the creation of projects that support Ecuador in this aspect, such as EUROCLIMA+, a

project that focuses on environmental sustainability and climate change in Latin America promoting mitigation and adaptation to climate change, resilience, and investment (EUROCLIMA+, 2021). According to EUROCLIMA+, these are some of the plans established with Ecuador at the national level in cooperation with the Ministry of the Environment, Water and Ecological Transition:

- Development of secondary regulations within the framework of the Organic Environmental Code (CODA) and strengthening of capacities to apply them properly.
- Development of regulations for the management of climate change.
- Strengthening the management of adaptation to climate change in the Water Heritage sector.
- Strengthening of the National Institute of Meteorology and Hydrology.
- Support to the formulation and planning processes of Nationally Determined Contributions.
- Support for the achievement of funds for the implementation of the "Strategic Agenda for Adaptation to Climate Change in the Andes.
- Access to climate finance for electric mobility.
- Development of a digital platform for the visualization and socialization of information on Climate Change in Ecuador.

It should also be noted that the European Union donated USD 50 million non-refundable to Ecuador during the health crisis caused by Covid-19 in order to allocate this cooperation 67% to the technical, 15% in financial aid, and 19% in humanitarian aid, focusing on various prioritized areas such as health, climate change, education, water and sanitation, migration and sustainable economic growth (El Comercio, 2020).

In the annexes section, you can find the environmental projects that have been carried out bilaterally between Ecuador and the European Union in agreement with the Ministry of Foreign Affairs and Human Mobility (2021).

3.13.5 Spain

Environmental cooperation between Ecuador and Spain has been carried out mainly through the Spanish Agency for International Development Cooperation (AECID), whose functions are concentrated in the fight against poverty and sustainable development, following key elements of Spanish Cooperation such as human rights and fundamental freedoms, the gender perspective, environmental quality and respect for cultural diversity (AECID, 2021). Cooperation between these two countries is possible thanks to the Ecuador-Spain Country Partnership Framework, whose last update was prepared for the period 2019-2022, for the achievement of objectives such as managing resources for nature conservation through programs that promote sustainable development and the defense of nature rights, also, to promote the country as a megadiverse, intercultural and multi-ethnic; develop sustainable tourism and promote bio knowledge (Ministerio de Relaciones Exteriores y Movilidad Humana; Embajada de España en Ecuador; Cooperación Española, 2019).

Similarly, as the environment is a central focus, good natural practices and the use of clean technologies are promoted, adopting measures to ensure the correct mainstreaming of environmental sustainability, for this reason, the specific actions taken correspond to the survey of diagnoses before interventions that cause unwanted environmental impacts; the development of plans for the sustainable management of waste generated from productive activities; recognition of traditional environmentally friendly production practices; the responsible use of resources and energies in production, processing, transport and marketing processes; the protection of river basins; the development of environmental assessments of strategies and programs; and environmental impact assessments in the construction or rehabilitation of infrastructure (ibid.).

The cooperation between Ecuador and Spain was raised under Ecuador's commitment to the fulfillment of the so-called National Development Plan "A Lifetime" 2017-2021, being the maximum public policy instrument for government action and whose central axes are territorial equity and environmental sustainability, it also contains elements that go hand in hand with the 2030 Agenda for Sustainable Development and that in turn are compatible with the priorities national as the fight against poverty, reduces inequality gaps and promotes economic growth within environmental sustainability (Ministerio de Asuntos Exteriores, Unión Europea y Cooperación; Secretaría de Estado de Cooperación Internacional y para Iberoamérica y el Caribe; Dirección General de Políticas de Desarrollo Sostenible, 2019).

In the annexes section, you can find the environmental projects that have been carried out bilaterally between Ecuador and Spain in agreement with the Ministry of Foreign Affairs and Human Mobility (2021).

On the other hand, Ecuador has also leaned towards South-South cooperation which is based on direct and horizontal relations between countries that are located mainly in the south of the planet, whose purpose is to face the challenges of development (Organización de las Naciones Unidas, 2019). In this way, Ecuador's international cooperation policy trends have set aside the classic concepts of "donor" and "recipient" to also move towards a discourse based on complementarity and shared responsibility between the actors of the North and the South (Calvas, n.d.), likewise, Calvas indicates that this type of cooperation takes a condition of complement and not a substitute as such of the role of the state. Although this type of cooperation represents a better percentage, it is important to know in which environmental areas it mainly works. Next, we will briefly talk about the environmental cooperation that currently exists with some of these countries:

3.13.6 Colombia

Ecuador and Colombia have developed a relationship in environmental matters within the framework of the Binational Border Integration Plan that they maintain in the face of the recognition of the mega diversity present in both countries, especially the care of the hydrographic basins and the fauna and flora (Ministerio del Ambiente, Agua y Transición Ecológica, n.d.). This Plan arises to establish the main guide for the creation of policies that allow achieving Buen Vivir and the well-being of those who are in the Ecuador-Colombia Border Integration Zone, complying with what was agreed in the Tulcán Declaration of 2012 (Secretaría Técnica Planifica Ecuador, 2014).

For this reason, one of the axes of the Binational Border Integration Plan is the axis of environmental sustainability, within which the importance of ecosystems and natural resources is recognized, in such a way that strategies have been proposed such as the creation of binational protected areas for their conservation, the creation of strict control actions around productive and extractive activities and the empowerment of the actors that develop in the management of ecosystems through awareness, training, and governance that allow resources to be conserved integrally for future generations (Secretaría Técnica Planifica Ecuador, 2014).

Today, Ecuador and Colombia affirm their commitment and joint work in environmental protection, prioritizing the goals for 2030 in terms of reducing emissions and highlighting the progress made in this area such as the Leticia Pact, a pact adopted by these two countries together with other Amazonian countries for the care of this region (Ministerio de Relaciones Exteriores Colombia, 2021).

3.13.7 Brazil

Ecuador and Brazil have created a relationship on environmental issues in which the protection of forests stands out since both countries have a large percentage of the Amazon region; in addition, they have focused on the conservation of these spaces through reforestation and the fight against fires through technical cooperation, for this reason, in 2015 the Ministry of the Environment, Water and Ecological Transition met with various Brazilian institutions to adopt environmental cooperation agreements that reduce threats in forests (Ministerio del Ambiente, Agua y Transición Ecológica, 2015).

Likewise, both countries have worked together in the "Amazon without Fire" Program implemented by the governments of Italy, Ecuador, and Brazil, which has as its main objective "reduce the incidence of forest fires, through the implementation of alternative practices to the use of fire in rural areas, helping to protect the environment and improve the living conditions of the communities " (Fondo de Inversión Ambiental Sostenible, s.f). In this way, there is a joint work between the Italian Agency for Development Cooperation (IADV), the Brazilian Agency for Cooperation (BAC), the Development Bank of Latin America (CAF), and the institutional support of the Ministry of the Environment, Water and Ecological Transition so that the "Amazonía sin Fuego" Program can carry out actions to prevent forest fires, reinforce technical capacities, build public policy, education and environmental awareness, and implement good agricultural practices as alternatives to the use of fire in the rural environment (Segura et al., 2019).

3.13.8 Chile

Environmental issues between Ecuador and Chile have been dealt with through the signing of inter-institutional agreements that have been mostly promoted by the Chilean Government

in search of learning from Ecuador about the administration of protected areas, the control of migratory species and development of environmental management instruments (Ministerio del Ambiente, Agua y Transición Ecológica, 2015). Both countries have highlighted that this type of cooperation is beneficial in a diversity of issues such as the protection of marine environments, the creation of biodiversity management models and the control of invasive alien species, the creation of environmental impact assessment systems, standards and supervision in the field of mining and aquaculture industries (idem).

In the same way, the governments of both countries have carried out, bilaterally, the exchange of experiences, technical visits and meetings with experts on the management of island national parks and marine-coastal management; the conservation of the oceans; the use of plastics and mutual interest in regulating the mining sector (NODAL, 2017). In this way in 2018, Ecuador and Chile signed several cooperation agreements related to the mining, environmental and social sectors (El Telégrafo, 2018).

3.13.9 Bolivia

The environmental cooperation relationship between Ecuador and Bolivia has been limited to cooperation agreements on protection and conservation, aimed at exchanging information and experiences related to the recovery, restoration and promotion of traditional, ancestral and local knowledge (Andean- Amazonian), regarding the protection and sustainable management of the environment (Ministerio del Ambiente, Agua y Transición Ecológica, s.f). Similarly, the two countries have sought to develop strategies and regulations regarding reforestation processes and reaffirm the gender approach in environmental care, from the worldview of ancestral peoples and nationalities (idem).

3.13.10 Mexico

Although the relationship between Ecuador and Mexico has not been mainly focused on environmental issues, since 2014 the dialogues between both countries were opened to incorporate this issue in their negotiations, in such a way that they agreed, in the first instance, to maintain a joint position to encourage the rest of the international community to implement the environmental principles contained in the main declarations (El Comercio, 2014). Likewise, Ecuador and Mexico signed in 2017 six cooperation agreements in which they

established as priorities the creation of a virtual cooperation network on climate change carried out by specialists and students, as well as technical assistance in the Pichincha and Chimborazo provinces for the conservation of volcanic soils and the generation of bio-knowledge, including the Ecuadorian agrobiodiversity of agaves, guagua and opuntias in agricultural, industrial, environmental and research processes (Sputnik Mundo, 2018).

3.14 New Challenges for environmental cooperation in Ecuador

Ecuador has made great strides in environmental matters through international cooperation as it has been seen throughout the chapter, however, environmental risks are increasing and they are more palpable every time and, as Ecuador is a mega diverse country in both its population and its natural resources, the challenges become even more urgent. According to the UN-Ecuador Sustainable Development Cooperation Framework (2019-2022), the main environmental cooperation challenges for Ecuador are related to five areas:

1. Care and conservation of the biosphere

This first area refers to the urgent status of threatened and endangered species, since around 78% of endemic plants are facing a considerable degree of threat and approximately 530 species of wildlife face some category of threats such as illegal trade, smuggling, poaching and extraction of fish or their derivatives. Similarly, the levels of deforestation and soil degradation have increased, mainly in indigenous territories and near agricultural areas. In terms of marine-coastal diversity, mangroves are poorly managed, which reduces the amount of their hectares. Finally, the situation in Galápagos is worrying since it is facing unsustainable conditions in the medium and long term.

2. Climate Change

In Ecuador there are various factors such as the increase in the emission of greenhouse gases, changes in precipitation patterns and the increase in temperature, which make the vulnerability to climate change greater. This situation of vulnerability affects each person differently and affects women to a greater extent since the adaptation capacity of each of them will depend on their economic, social

and cultural context. Likewise, inter-institutional and local coordination between the environment and development sectors; and the limited participation of the population, especially indigenous peoples, represents a challenge within environmental management.

3. Responsible and sustainable production and consumption

Although the National Development Plan promotes socially and environmentally responsible consumption, in practice there have been various challenges:

- Most rural production is stationary, with periods of overproduction and scarcity, which affects the income of the population, especially that of women.
- The productivity of the agricultural and industrial sector is limited.
- One third of food is lost or wasted, therefore, the calories and nutrients necessary for the population are lost.
- The treatment and management of waste is insufficient, since 80% of the garbage produced in the country is dumped in open dumps.
- Environmental quality is alarming due to the storage of chemical substances such as organic pollutants, obsolete pesticides, mercury and substances that affect the ozone layer, etc.

4. Energy efficiency and productivity

The country's energy matrix has managed to reach 58% of hydroelectric energy and 2% of renewable energy; nonetheless, there are barriers that do not allow it to reach its potential and increase energy efficiency, among which are the high initial investments, little involvement of key actors, lack of information, reduced access to efficient technologies, and the difficulty of quantifying and measuring the advantages derived from energy efficiency.

5. Northern border

Despite the economic performance of the extractive industries of natural resources (oil and mining), agroindustrial (palm plantations) and forestry (logging),

these activities have generated socio-environmental consequences related to the deterioration of ecosystems, the expansion of the extractive frontier, the contamination or loss of some environmental services (such as water, soil, biomass, among others), and the long-term exposure of the population to toxic components. Similarly, the governments of Ecuador and Colombia have agreed on a joint policy to confront and prevent illicit trafficking, which includes the Police, the Prosecutor's Office and border authorities, but greater efforts are needed to raise awareness among the population.

Considering the challenges mentioned above, the United Nations System has offered to assist the Ecuadorian state so that the rights of nature and of current and future generations are guaranteed. For this reason, a development model that is consistent with the proper governance of natural resources, responsible practices with the environment and the participation of men and women in decision-making has been promoted, taking into consideration the differentiated impact of climate change on the population (Naciones Unidas Ecuador, 2019). The United Nations System, in accordance with the UN - Ecuador Cooperation for Sustainable Development Framework (2019-2022), proposes the following strategies:

- 1. Integrated technical assistance for the design and implementation of public policy, with a focus on human rights and gender:** it tries to support the processes of adaptation and mitigation to climate change, the sustainable management of natural resources, the conservation of biodiversity, responsible production and consumption, sustainable and inclusive industrialization, the proper use of productive resources, energy efficiency and renewable energy, environmental quality, migration due to climate impacts, international waters and fishing resources, etc.
- 2. Strengthening of capacities in the public and private sectors, civil society, communities, peoples and nationalities:** it refers to offering technical assistance to deal with adaptation and mitigation to climate change, from a differentiated perspective between men and women that includes the sustainable management of renewable and non-renewable natural resources; the correct and sustainable management of water resources and marine products in an integrated and transboundary manner; the rational environmental management of dangerous

chemical substances, etc. The integration of formal and non-formal education for sustainable development in education and training programs will also be promoted.

- 3. Institutional strengthening for the implementation of the environmental sustainability approach in public management:** it tries to offer technical assistance and support for the generation of regulations, resilience profiles and public policy instruments for national and local agreement between the environment, development and productivity sectors. The participation of indigenous peoples, women and other historically excluded priority care groups will be promoted. In the same way, the production of perspectives and innovative solutions, sustainable in the medium and long term, such as methodologies, tools, systems and participatory intervention models for environmental management will be supported.
- 4. Generation and dissemination of knowledge and evidence:** for the sustainable management of natural resources, ancestral knowledge will be incorporated and a greater use of Information and Communication Technologies (ICT) will be promoted.
- 5. Generation of new national and international alliances:** the involvement of the population, organized civil society, private companies and academia will be promoted in the development of innovative and sustainable solutions and exchanges and strengthening of competencies in the field of renewable energy and hydroelectricity; conservation of biodiversity; adaptation and mitigation to climate change; low-carbon urban development mechanisms; improvement of air quality, sustainable consumption patterns; sustainable rural production and treatment; correct waste management; use of non-renewable natural resources; circular economy and green growth, etc.
- 6. South-South, triangular cooperation and promotion of alliances:** south-South and triangular cooperation will be promoted with public institutions from countries of the Global South; in the same way, with academia, citizen organizations, intergovernmental, subregional and binational mechanisms and with global institutes, to allow the exchange of knowledge, experiences and good practices of intersectoral strategies.

7. Territorial approach with emphasis on the northern border: a territorial approach will be used for interventions, especially, in the northern border, a comprehensive mechanism will be promoted with the following objectives:

- i) Strengthen capacities for the prevention and control of the illegal traffic of wild flora and fauna, the conservation of biodiversity and the sustainable management of fishing resources.
- ii) Foster partnerships and knowledge management for the sustainable management of forests and other resources, through a model of conservation and sustainable use of basins, which includes existing initiatives and community experiences.

These are some of the environmental challenges that Ecuador is currently facing and which will increase in the future if correct, sustainable and inclusive actions are not taken. Within these problems are all the fundamental aspects that the country must consider when seeking international alliances that contribute and facilitate environmental conservation, in addition, Ecuador no longer only faces the challenges mentioned above, but will have to adapt those challenges to the new challenges derived from the health crisis caused by Covid-19 since the pandemic, on the one hand, has put part of the accelerated and globalized development processes on hold (Ministerio del Ambiente, Agua y Transición Ecológica, 2020), but, on the other hand, it has highlighted the lack of adequate actions to face climate change and the social and economic gap that exists between men and women to face problems of such magnitude (Céspedes, 2021).

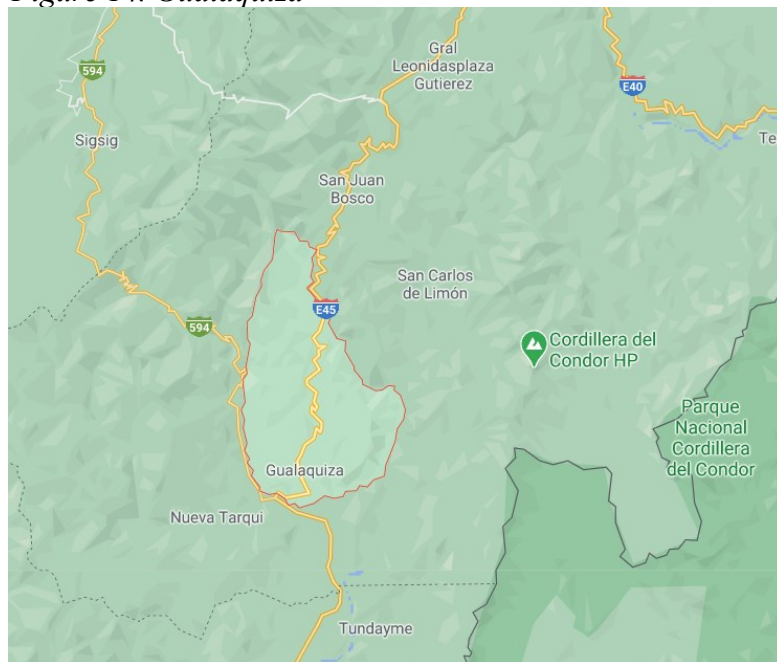
CHAPTER 4

CASE STUDY: BOSQUE MEDICINAL

4.1 Gualaquiza

The Bosque Medicinal project is located within the Gualaquiza canton, so it is important to name the canton and its specifications to understand its importance:

Figure 14. Gualaquiza



Source: Google Maps
Produced by: authors

Based on data from the Municipal GAD of Gualaquiza, this canton has an area of 2,151 km² and a population of around 15,288 inhabitants, which represents 8.94% of the total population of Morona Santiago. This canton is limited as follows:

- **North:** Canton San Juan Bosco (Morona Santiago Province)
- **South:** Canton El Panguí (Province of Zamora Chinchipe)
- **East:** Republic of Peru
- **West:** Province of Azuay

The Canton keeps many stories of people who decided to go to live there in order to improve their lives based on the exploitation of gold and use of land suitable for livestock. Its history goes back many years ago where the original inhabitants of this Canton were the Shuar natives; however, its existence with the name of Gualaquiza dates back to when the Spanish conquerors arrived and called it that. In 1815, it was founded by Father José Prieto, and from that day on, settlements were established for the planting of sugar cane and corn. As of 1944, it became known as a Canton to be part of the Morona Santiago Province, resulting in not only historical but also political and economic significance.

For these kinds of reasons, the Gualaquiza canton is defined as nature, magic and history. This definition was born due to the charm that the canton has in nature, in addition to the kindness of the people who coexist in it, which makes it a place that is full of discoveries. It is located to the south of the Province of Morona Santiago between the Eastern Cordillera and Cordillera del Cóndor, which is crucial, since its settlement not only results in the existence of a great diversity of ecosystems, but also that its basins, which originate from these areas, come to supply all the towns of the canton. The climate of the region is divided in two; the first, the humid subtropical region that oscillates between 18° and 24°; and the second, the rainy region between 12°C. and 18°C (GAD Municipal de Gualaquiza, 2018).

4.2 Bosque Medicinal

Figure 15. Bosque Medicinal



Source: @copyright

The "Bosque Medicinal" project was born in August 2016 together with Roman Kollar, Fredy Nugra and Ronal Chaca, with the aim of ensuring the Ecuadorian Amazon in the Ecological Area of Municipal Conservation "Runahurco" AECMR and the Conservation Area and Ecological Reserve "El Paraíso", located in the Morona Santiago province in the Gualaquiza canton. Through research, environmental education and local development, Bosque Medicinal seeks to conserve the area's biodiversity, responding to inclusion and equity

criteria that are consistent with the development of the area. However, it was only in 2019 that Bosque Medicinal was established as a non-profit organization, receiving funds from both volunteers and donors from different parts of the world.

This foundation develops its activities mainly in the Conservation Area and Ecological Reserve "El Paraíso" since it is there where they started, in addition, this area has an area of 588,907 hectares. The reserve is managed by the residents of Tumbes since most of the projects are carried out within this zone. For this reason, an operating house was built with the help of volunteers to be able to carry out all the activities of Bosque Medicinal, in this way, a simulation of a traditional Shuar house was carried out in the first instance. This space was built in such a way that it can be shared within it and, especially, to teach students and teachers the history of the different cultures located within the Amazon.

Likewise, the construction of an operations house has been carried out through the donation of 16.75 square meters from the Provincial Directorate of the Environment of Morona Santiago. This refuge, whose design is friendly to the environment, has a total of three thousand tables, two floors, five rooms, two full bathrooms and a kitchen. All those who have visited the refuge have contributed in some way to its maintenance, either with money, household items and even paintings that create a warm and colorful atmosphere. In the same way, a project was carried out whose objective was the installation of camera traps to be able to observe the animals that inhabit the area, this has contributed greatly to science and the study of Bosque Medicinal (Bosque Medicinal, 2020).

Figure 16. Bosque Medicinal Project



Source: @copyrighth

Mission

The mission of the Bosque Medicinal is to remind people of the healing power that nature has, in addition to creating awareness and honoring the ecosystem, especially because of how essential the biodiversity of the jungle is; thus, resulting in an interconnection between human beings and nature.

Who is Bosque Medicinal?

Bosque Medicinal represents a collective effort that seeks to create awareness about the tropical forest, which in this case is part of the Ecuadorian Amazon, because as named in chapter 3, it is one of the most diverse ecosystems in the world due to the large number of species, ecosystems and resources that it possesses. As mentioned in its mission, Bosque Medicinal takes into consideration the care of water and natural medicines, but putting in the forefront the concern for an interconnection between human beings and nature.

What does Bosque Medicinal do?

Bosque Medicinal is dedicated to the protection of the tropical forest through different strategies such as the planting of trees and the reforestation of the area. In addition, it is involved in educating both children and adults on issues of flora and fauna in relation to their importance to the ecosystem. Within this topic there are the following edges:

Support for the Conservation Area and Ecological Reserve "El Paraíso"

This support project is based on involving the general public in issues such as the protection of nature and the territory, and monitors the changes that occur within it; in addition, it analyzes the distribution of biodiversity and species. Among the main themes of this project are the following:

1. Forest protection
2. Conservation of biodiversity that includes plants and animals
3. Reforestation of areas near the "El Paraíso" project
4. Support for local communities
5. Promotion and cooperation of the Runahurco Reserve
6. Support ecotourism

Establishment of a Botanical Garden

This project is based on the collection of plants within the Amazon, which are precisely plants and trees that serve not only for traditional natural medicine but also as art, architecture and traditional crafts. What is sought within this project is that future visitors can learn about the environment in which plants grow, what their effects are, and the traditional methods of their use.

Education

In relation to education, this is given in relation to the importance of the Amazon and is not only aimed at professionals in zoology, botany, herbalism or environmental protection, but also at children and adults since the ecosystem is important and necessary for everyone. The

objective is to provide different learning alternatives about nature at the local level or in nearby areas.

4.3 Bosque Medicinal projects

According to Bosque Medicinal, these are the projects that have been carried out in terms of forest conservation, education, and ecotourism:

Table 7. Bosque Medicinal Projects

Name of the project	Objective
Bosque Medicinal Bats	As the Bosque Medicinal is a sanctuary for bats, it is necessary to study certain ecosystems and changes to which these mammals are exposed with the variation of land uses in the province of Morona Santiago.
Bosque Medicinal plans to return Cascarilla trees to "El Paraíso"	Return Cascarilla trees found in the Andes, which are known to have cured malaria and which are only found in the Podocarpus National Park.
United for the Development of the Amazon	Carry out a model based on three axes: the study of the territory, the conservation of natural resources, and research as an articulating axis for the promotion of entrepreneurship in natural areas.
Installation of camera traps for the study of land mammals	Installation of cameras for the study of mammals in four sections within the reserve, defined at a distance according to the type of study and according to the geographical characteristics of the area to be investigated.

Uniting in Service of Amazonia	Realization of a virtual day of yoga, breathing, music and discussions to reconnect with the being and remember how to take care of the jungles of the planet.
Ornithology group of the Amazon State University in “El Paraíso”	The ornithology group of the Amazonian State University, applied the different techniques to be used in samplings in order to know the diversity of species in three altitudinal gradients in a very important area of the Amazon such as the Runahurco Ecological Area of Municipal Conservation, due to its floristic composition and environmental conditions conducive to harboring a numerous species.
Bosque Medicinal is registered online as a research center in the South of Ecuador	Because the National Institute of Biodiversity (INABIO) with the support of the Cooperation Program for Application-oriented Research on Biodiversity and Climate Change performs diagnoses of scientific stations, research centers and other infrastructures that allow or facilitate the development of programs and projects in the field of research on our biodiversity, Bosque Medicinal was officially registered online as a research center.
Visit to the Gualaceo CETAD	In March 2020, Bosque Medicinal had a visit from the Specialized Center for the Treatment of People with Problematic Consumption of Alcohol and other Drugs, with the aim of carrying out activities to strengthen the physical, mental and spiritual health of patients.
Ilex guayusa	Due to the importance of the Guayusa plant, being cultivated and consumed since ancient times by Amazonian indigenous peoples as one of the main components of their rituals and ceremonies to start the day. For this reason, through the support of foreign students, volunteers and

	collaborators, Bosque Medicinal is committed to a reforestation project for this plant.
Study of the Matico plant - Piper aduncum	The Piper aduncum is a plant that contributes to the reforestation and conservation of the biodiversity and biomass of the forest, in addition, it acts as a natural barrier against erosion. Its wood is used as fuel in stakes, fences and even as part of rudimentary constructions. For this reason, Bosque Medicinal focuses on its study and protection.
Record of Tremarctos ornatus (Spectacled Bear)	The interest of Bosque Medicinal lies in the fact that this macromammal is a great indication of the recovery of the forests that have been disturbed years ago and that today are in constant natural ecological restoration. Likewise, it provides information on the distribution of the species that is possibly related to the availability of food and other biological aspects that, through research studies, allow answering the questions related to its ecological behavior, its identification, composition and distribution of the macromammals of the reserve.
Bush Dog: A species registered in Gualaquiza	Camera traps installed by Bosque Medicinal revealed a new mammalian record for science: the Speothos Venaticus, known as the bush dog. Due to the little information on this species in the Morona Santiago province, this record confirms the importance of conserving protected areas within the Gualaquiza canton to preserve endemic flora and fauna species.
Help us build a shelter in the Amazon	Bosque Medicinal opened a fundraiser for the construction of a shelter that functions as the base for student forest trips, scientific expeditions and eco-tourism.

Source: Bosque Medicinal, 2020.
Produced by: authors

Figure 17. Bush Dog



Source: @copyright

4.4 Main partners of Bosque Medicinal

Table 8. Bosque Medicinal partners

Partners	Description
Forest.Ink	<p>Forest.Ink is a global conservation community that aims to help people live in a more conscious way, leaving aside some of the established habits, so this community together with Bosque Medicinal invests in the establishment of educational programs or infrastructure to reconnect human beings with the tropical forest and thus experience ecosystems directly (Forest.Ink, 2021). In addition, this organization is dedicated to raising funds in collaboration with other projects, aside from the events and volunteer programs that they carry out for the conservation and restoration of natural areas.</p>
University of Azuay	<p>University of Azuay is considered one of the primary partners within Bosque Medicinal project as it makes available the departments of Tourism, Biology and Psychology for understanding the tropical forest and the cultures that inhabit it, in addition to offer the opportunity for university students to work with forests by strengthening the connection, awareness and understanding of culture (Bosque Medicinal, 2021).</p>

<p>Bosque Medicinal Switzerland</p>	<p>Switzerland Bosque Medicinal has a friendly relationship with Bosque Medicinal, as the purpose is simply to support it through international campaigns, in addition to fundraising efforts. On the other hand, one of its objectives is to publicize the importance of regions such as the Amazon along with its dense diversity.</p>
<p>Sklenářka</p>	<p>Sklenářka is another of the organizations that maintains a friendly relationship with Bosque Medicinal. It serves as an example since this is a forest that serves as an area for yoga, meditation, natural healing and education. (Bosque Medicinal, 2021).</p>
<p>UNIDA</p>	<p>The United Consortium for the Development of the Amazon (UNIDA) is a platform made up of universities, organizations and private companies that support non-profit organizations for the sustainable development of the Amazon (UNIDA, 2021).</p>

Source: Bosque Medicinal, 2020.

Produced by: authors.

In order to deepen the work carried out by Bosque Medicinal, interviews were conducted with two of its co-founders, Ronal Chaca and Fredy Nugra, who shared the information shown below:

4.5 The beginning of Bosque Medicinal, founders and objective of the project

The interviewee and co-founder of Bosque Medicinal Ronal Chaca, says that the beginnings of Bosque Medicinal date back to 2018, when the Czech professor Mirsolav Horák saw great potential in Ecuador in terms of issues related to ancestral medicine, being himself an anthropologist and sociologist. Thus, in the same year, the opportunity arises to sign an agreement between the interested parties in Ecuador, with Mendel University and Masaryk

University. In the same way, he says that the objective of this project, co-founded by Roman Kollar, Fredy Nugra and himself, has as a general objective “the conservation of tropical forests as a tool for the regeneration of the territory and from there try to improve the living conditions, not only of the population but also of the ecosystem around Bosque Medicinal” (Chaca, 2021). While recognizing that Bosque Medicinal has a clear objective, Chaca emphasizes that the foundation does not have the salvation to face environmental problems, but is the starting point for the beginning of a change that starts with environmental education and the elimination of the dichotomy man-nature.

4.6 Multidisciplinary team and the role of those involved

The team that makes up Bosque Medicinal, according to Chaca (2021), is a multidisciplinary team since it has the presence of people whose diverse knowledge and specialties range from ancestral medicine, biology, tourism and even psychology. Since its inception, Chaca (2021) commented that he, Fredy and Roman, had different points of view in the fields of conservation, permaculture and tourism, however, their objective was clear: to generate a new conservation model that can be applied even in other countries. During the interview, Chaca (2021) refers to one of the founders, Roman Kollar, without detracting from any of the others involved, as a great facilitator of the project since he was the one who spent approximately 12 or 15 years working with the Shuar maintaining communication with the community. Also, speaking English, Czech, Spanish, has allowed him to present the project in different places. For this reason, Chaca (2021) refers to him as a type of “modern Shaman”. In the same way, Chaca (2021) indicates that the incorporation of the psychological approach to deal with mental health issues has also resulted in the success of the foundation, since it recognizes its importance as part of “different visions but common objectives”.

Figure 18. Bosque Medicinal Team



Source: @copyright

4.7 Scope of the project and promotion / recognition of Gualaquiza at an international level

Regarding the scope of the project, Chaca (2021) indicates that the fact that the foundation is multidisciplinary and that it has various links, is what gives Bosque Medicinal a different perspective than it normally projects, since its name usually implies that it has only medicinal approaches. Similarly, Chaca (2021), expressed that the scope of the project is not only limited to what has been achieved in terms of the conservation of the Amazon, but also Gualaquiza has become known in the world. Specifically, he expresses that Gualaquiza "is being recognized for these issues of connection and research both nationally and internationally, now everyone is asking us, where is Gualaquiza and where is Bosque Medicinal, and obviously when both national and foreign volunteers arrive, they do not simply come to the forest, because we usually go to the market and make purchases, we get to know local products. They stimulate the local economy or sometimes they have to use accommodation, food, transportation, because in one way or another we help to boost the economy of Gualaquiza " (Chaca, 2021). Chaca

also commented that one of the objectives for February 2022 is to make a documentary in collaboration with a Czech television station, which will show the journey from Central Europe to the Ecuadorian Amazon, in this way, it will be possible to achieve the greatest promotion and diffusion for the Forest throughout the country and internationally. Additionally, all these links have led to the publication of three books: UNIDA 1, UNIDA 2 and UNIDA 3.

4.8 Czech market, purpose to be achieved with international cooperation and the adaptation of international concepts to Bosque Medicinal

During the interview, Ronald commented that their interest in a country like the Czech Republic arose because Ecuador is commonly linked to markets in the United States, Canada or Spain, however, there has never been such an initiative with a country in Central Europe. For this reason, Bosque Medicinal was interested in generating cooperation agreements with the Czech universities mentioned above. In addition, Chaca (2021) emphasizes that there is also a cooperation agreement with the international consortium UNIDA, which has more than 15 universities, including one of its great partners such as the University of Azuay. According to Chaca (2021), the reason why the Czech market looks for opportunities in Ecuador is because for them the conservation of the tropical forest is fundamental, in such a way that they create favorable spaces to generate volunteering. At the same time, they are articulated with a scientific tourism approach with a large flow of visitors coming from the Czech Republic.

Currently, the project is leaning towards people who have money and who want to conserve the forests, Chaca (2021) indicates the following: “we are also targeting people who have money but who want to conserve, because sometimes that has also been a conflictive issue, that if we do not invest in conservation, not a single word will serve me either and, let's face it, when it comes to investing in conservation very few take risks, so we are also looking for strong entrepreneurs like Randim who are committed to conservation and put their money ”. In this way, Chaca expressed that, in conservation issues, there is no such a concept in which the rich are bad and the poor are good because even people who have money in Ecuador are not interested in conservation issues, for this reason they seek ways of approaching investors. Similarly, Bosque points to characters who have some relevance in conservation issues, chaca (2021) states: “... possibly in January, one of the most important Czech fishermen in central Europe will come. What we are looking for is also those people, we are not going to look for film artists nor are we going to look for models, no, no, no. We are looking for people who are

important in conservation issues ... so those connections that have been made thanks to the Bosque are incredible”.

According to Chaca (2021), what is generated from this cooperation with Czech universities is also promoting local tourism ventures based on nature. “... Within the lines that we want to strengthen is that of nature in mindfulness, the only country that has done so so far has been Chile and Bosque Medicinal as a foundation. We also want to generate these projects based on forest baths, which is a technique that was born in Japan and that we are now implementing in Bosque Medicinal, and everything that is related to mental health, innovation, entrepreneurship, nature and research that is what we are now projecting strongly with this concept of nature” (Chaca, 2021). All these international cooperation links, according to the interviewee, help to generate legitimacy and also strengthen local development.

4.9 Research lines, research as a dissemination tool, material needs of Bosque Medicinal and improvements in the execution of the project

Regarding the lines of research, Chaca (2021) says that the first objective of Bosque Medicinal is conservation and, based on it, other lines of strengthening are deployed such as research, education, mental health and scientific tourism. Likewise, it emphasizes that the work in these areas began before the arrival of the Czech stakeholders, since Bosque was already working on research and reforestation programs such as the one carried out with Guayusa, all this material being the one that would be sent to the Czech Republic. “... That is, if we only waited for the tourism area, then the project would have practically died, but the interesting thing is that we mainly focused on conservation and these different lines of research emerge from this. That is why during the pandemic we continued with these regenerative processes that are very interesting to analyze and well, that was the best promotion we had during the pandemic, and that is why the boys we have now arrived, almost 12 or 13 Czechs that are now in Bosque Medicinal” indicates Chaca (2021).

Chaca (2021), says that, to carry out all the lines of research, it has been necessary to acquire certain equipment, for example, cameras to create content, also taking into consideration that, at least in his case, he has had to study about editing programs to be able to create videos of 30 seconds to 1 minute, to be later sent to different universities. “... I think that is fundamental, rather than thinking about promotion, I think that we are promoting research as a tool to

disseminate what Bosque Medicinal represents and this is obviously reaching universities, organizations, even a volunteer came from Germany and another from the Netherlands. This type of volunteers had never arrived and now it is precisely because of the dissemination of these issues” (Chaca, 2021). Nonetheless, although Bosque has successfully disseminated its scientific contributions, the interviewee Fredy Nugra comments that the material needs of Bosque Medicinal are “... a laboratory to collect samples, classify and investigate, as well as microscopes. We need dryers to dry plants, we need some materials to do research, those would be the basic things we need to be able to do science in the jungle. Agreements with southern universities are also needed to be able to review the samples that our collaborators collect”. Likewise, Fredy Nugra (2021), expresses that the space offered by Bosque Medicinal is very rustic and natural, it has no luxuries, however, he comments that people who are really interested will enjoy this space in natural conditions.

4.10 Regulation of Bosque Medicinal, financing, level of government involvement and legitimacy

Regarding the first agreement between the Medicinal Forest and the Czech Universities, both Mendel and Masaryk, Chaca (2021) comments that it was signed in 2018, that is, there are documents that support this cooperation. He states “... we established the first contract with Professor Miroslav, he is director of the culture department at Mendel University and is now director of the UNIDA project. An agreement was signed with this university where the parameters for working with the UNIDA project are indicated, which is an international conglomerate that unites several Latin American universities in search of biodiversity conservation, especially in the Amazon”.

When the interviewee Ronal Chaca was asked whether the Ecuadorian Government had anything to do with the development of this project or its financing, he was clear in explaining that it had not, arguing that they have received only limited support, since in the different visits carried out by Czech volunteers to Ecuador, the Ministry of Tourism has done nothing but offer a cordial welcome. In this way, Chaca (2021) commented: “... for example, this week approximately 12 Czechs arrived, it was incredible. The Ministry of Tourism arrived, they took them to Ingapirca, gave them souvenirs, gave them promotional campaigns, etc. However, when they arrived in Gualaquiza it was like okay, they already arrived, nice and ready, when they do not know that probably through that visit Gualaquiza is being known much more in

Europe because all Europeans are saying, well, let's go to Gualaquiza, so they first know Gualaquiza and then Ecuador, and I think they still do not have it clear, that when these types of visitors arrive, they precisely help these destinations to be promoted internationally". In this way, Chaca (2021) indicated that there is a lack of initiatives by the government on conservation issues, however, it is not essential.

On the other hand, Chaca (2021) clarified that the funding for Bosque Medicinal comes mainly from Europe, since the funds come from the Czech Republic through the Forest Ink foundation. Likewise, he commented that at the Ecuadorian level very little has been done on the subject of economic resources, although, he enthusiastically expresses, scientific tourism programs have been projected that can contribute in this regard. In the same way, he emphasizes about the government "... the truth is what they have done is to provide the facilities so that Bosque Medicinal Foundation can be there as a conservation model and, although you may not believe it, it is more than enough because working with the public sector sometimes hinders these initiatives, especially due to its very complexity of operation".

Within the financial aspect, a relevant issue arose and this is how it is linked to the legitimacy of the project, since Chanca (2021) expresses: "The issue of obtaining financial resources, for example Bosque Medicinal I feel that it is already a project that can easily compete with other projects not only at the national level but also at the international level, and there are funds at the international level that can fairly participate. But, sometimes due to ignorance or sometimes due to the fact that there is no such culture of being able to participate in projects, these resources are lost, right? So now we are also betting a lot to obtain economic resources through these international cooperation agreements". That is to say, it is considered that the places from which the resources and the agreements that support this project come from, in a certain way provide an enhancement to the image of the project in comparison with other national and international initiatives. Finally, on the issue of financing, the interviewee commented: "... just the previous week Diana García allowed me to be in a meeting where a large amount of money was given for projects that are linked to conservation, especially in the Ecuadorian Amazon. I really had no idea that there were such contests, so I felt that there is still a lack of awareness at the national level regarding these projects". Chaca (2021) recognizes the existence of different proposals in the conservation area; however, he considers that there is a lack of guidelines, clear objectives, goals and results that support these proposals. He comments "... sometimes the Ecuadorian does not like that very much, but I think that now we

are learning a lot from those issues and I believe that we are also betting on international cooperation, but above all to obtain economic resources and also to generate legitimacy."

Taking into consideration, the fact that the financing of Bosque Medicinal was consulted and to what extent the Government intervenes, a question was formulated aimed at knowing if Bosque Medicinal is regulated by any entity to which Chaca (2021) responded: "No, it is that more than regulating in this case what we have done are approaches with the municipal GAD of Gualaquiza, even these areas have been a good element especially to help protection, or so that people do not cut down the forests. So, the municipal government has given us many facilities so that we can integrate conservation issues. Even two months ago the same government helped open a new road, so they are seeing that Bosque Medicinal, apart from conservation, is also a pillar to try to regulate the hunting and poaching of forest that still tends to occur in these areas." In this regard he also added: "Let's see, Bosque Medicinal is within a buffer zone, that is it is not within the primary forest; however, it is an area where farms are located or has been developed for livestock issues. In this case, Bosque Medicinal is part of the Bosque Medicinal Foundation, but it also works jointly with the Forest Ink Foundation. So, Forest Ink and Bosque Medicinal are the institutions that regulate the concept of forest".

4.11 Participation of the indigenous community

When asking questions related to the presence and participation of the indigenous community in the project, especially about whether it easily shares its ancestral knowledge, two slightly different positions were found between the interviewees Fredy and Ronal. On the one hand, Fredy commented that it is necessary to know that the project is located in the upper area of Tumbes at 1700m above sea level and the indigenous communities are settled there, Bomboiza being the largest community. In this way, he emphasizes that they do have contact with them, "... we met some people who handle the spiritual part, with some guides and we have also done some things or donations of equipment to the Cayamas community, for example. Right now, we have a volunteer who is linked to translate the signage in English, Spanish and Shuar". After learning about this, the question arose of how easy it is for communities to share their knowledge with people outside of them, to which Fredy replied: "At the inauguration of the Shuar hut, there were two great teachers and women of culture, explaining and teaching everyone who was at this opening ceremony of the cabin. So I have not seen them basically hiding anything because the moment you enter a spiritual ceremony

there you can realize everything, there you learn everything. So, let's talk about people of spirituality, perhaps with other people who do not practice spirituality, they take care when telling their stories, their knowledge”.

On the other hand, Ronal considers that this is a somewhat controversial issue and shares the following: “working with the Shuar is not so easy and at times I have been questioned, Ronal, where is the community? and it is as if we were the large landowners and that we already had the money to develop all these issues that are binding on the community, which entails a process, however, what we have done has been to have contacts with community leaders who are linked to the issue of ancestral medicine or small tourism entrepreneurs so that they can see how the Medicinal Forest model is managed, and that they can also generate their own tourism and conservation initiatives in their communities”.

In addition, Ronal said that nowadays strategic alliances are being carried out with community leaders, but especially with children and women since this is fundamental for Bosque Medicinal, he also comments that the communities benefit from the tourism that is given thanks to the project, as they generate their own local development models. In the same way, he says that these alliances allow the development of micro-enterprises such as Guayusa, in order to rescue rituals that are being lost. However, he emphasizes the following: “Obviously the Shuar is a very discreet person, very prudent and distrustful in the good sense of the word. They do not easily trust anyone, much less if they see foreigners, I am not saying all, but obviously they associate it with gringos. What we have done in this case with Fredy, because he is from Gualaquiza and obviously he knows all the people, what we do is that with those people that we can really have the confidence to be able to establish agreements, we do it”.

Chaca (2021), was clear when commenting that not the entire community is ready to generate these alliances, however, Bosque tries to generate ecological communities and not necessarily all those who belong to the communities should be linked to conservation or tourism issues because there are other structural problems to deal with, such as alcoholism, gender equity problems, or intra-family problems in general. He shares: “So, it is not that conservation and tourism are going to directly help the communities, what we are looking for is that through education the children can see that the conservation of their territories, biodiversity and the rescue of their traditions can give them greater alternatives to generate tourism ventures, but, I am honest, with older people it is very difficult to change that

perspective that they have in front of their territory. So, it has been a difficult process, but at least a small change has already been generated, at least with young leaders”.

Finally, Ronal indicated that there is still a stereotype about the presence of foreigners in these territories for both the communities and the authorities. "People tend to associate Bosque with" gringos ", so obviously sometimes you think that because they are “gringos " Bosque Medicinal is full of money and that is a lie. So sometimes they have that impression that because Czechs arrive or "gringos" as they call them arrive, practically Bosque Medicinal does not need collaboration and sometimes I feel that the authorities have a certain type of, that is, it is not that they do not support us, they do, but they could possibly support more. Sometimes they feel that because this is a “gringo” organization it surely has money, and sometimes I think that this information further undermines cooperation between the local government, and in this case the Czechs”.

4.12 Species study

Regarding the study of species carried out by Bosque Medicinal, Nugra (2021) indicated that the territory has a baseline that allows collecting existing information regarding conservation, for this, they have carried out samplings of mammals with camera traps. These tools, according to Nugra, have yielded a great diversity of species that were not known to science in this territory. Likewise, he commented that the methodologies used to develop these processes are the standards written by the academy and those regulated by the Ministry of the Environment, Water and Ecological Transition, in addition, everything that is investigated is published in scientific articles, indexed journals or books. Regarding the study of birds, plants and water, he commented: “There are many people who do ornithology, their methodologies are standardized, with the methods of binoculars, mist nets, chants and those are basically the methodologies in birds. In plants, we use permanent plots or transects and collection of samples and taxonomy as well, there is little work done in plants. We have medicinal plants guide that we are writing, it may be published next year, but the publications are very slow, we need people. I think I am the only biologist in the forest, we need more biologists to help us write and review. Regarding water quality issues, the observation methodologies are made with aquatic insects, fish, landscapes and the vegetation cover maps and land use, we review how much vegetation cover is being lost with aerial maps”.

Finally, Fredy commented that, to carry out these studies, it is necessary to remove the species from their habitats. “We have to collect plants because we do not know what species it is, it's a lot of work. First, the trees there have a width, we would say, of more than 50 meters, about 2m round and 30/40 m high. Study and sample that plant, can you imagine the work it takes? Then it is time to take the sample of the bark, a sample of the leaves, the flowers, the fruits, collect, dry, try to identify it and see what species is. It is a very very hard work, it is one of the hardest jobs there is and with rain and insects and everything that accompanies us.

Figure 19. Flora species



Source: @copyright

Figure 20. Fauna species



Source: @copyrigh

4.13 Predominant and structured environmental discourse

For Ronal Chaca, the fact of achieving a greater scope in Bosque Medicinal can be achieved through the establishment of strategic alliances, rather than with the help of the embassies, as he points out that there is still continuity with the use of a politically structured discourse on sustainability regarding conservation. When speaking of a politically structured discourse, it refers to the fact that most of the existing discourses on nature revolve around eurocentric, anthropocentric and also north american approaches that have evolved over time, to speak today about sustainable development and sustainability. Per se, within these perspectives, nature is described as an object of conservation, study and an element of enjoyment for human beings, making the speeches present an argument either of a technical or scientific nature that defends and makes the use and appropriation of nature legitimate (Marin, 2016).

4.14 Ecuadorians regarding environmental issues

Ronal Chaca reveals that Ecuadorians are not ready to help with cooperation issues, at least on environmental issues, this because they are "romantic" on conservation issues. He comments that when the fire broke out in Brazil, part of the national population took the streets to ask the Brazilian president to leave because the jungle could end, when at the same time Morona Santiago suffered a great impact due to the expansion of the agricultural- cattle frontier by cutting down the forest, not to mention Chinese mining.

The fact of conserving nature goes further, since the important thing, and what Ronal Chaca emphasizes, is that, if you want to conserve nature, you have to generate innovative projects and limit the fallacy of the use of conservation and sustainability words, because it only causes countries like China to pay the communities to carry out projects and have national support to carry them out.

In the end, this fallacy is that people must start with themselves, that is, that they generate solutions or projects for the conservation issue and not only expect responses from the state, nor is there a lot of connection between both actors. In other words, the conservation issue must begin to be supported first by the local population and extend to the regional, national and international levels with the aim that the territories are seen as an alternative to generate a change of consciousness and coexistence between nature - human being.

4.15 The most conducive country to extend the Bosque Medicinal project

According to Chaca (2021), the interesting thing about extending the project to other Amazonian countries such as Brazil, Peru and Colombia are the factors that coexist to make it possible, for example, in the case of Brazil the important factor is the distance, since he says that if you get to the Brazilian Amazon, you hardly get out because the territory is too wide. In the case of Colombia, the main factor is security because subversive groups are still there, because although that area has already been demilitarized, there are still paramilitary groups; and with Peru, the primary factor is the excessive commercialization that exists on ancestral knowledge, such as, for example, the ayahuasca tours. Ronal mentions: "Why Ecuador? Well, it practically has many advantages in relation to distance and enjoyment of landscapes. For a better understanding, there is already an established route, the first is the visit in Ayampe for 4

days, then a visit of another 4 days in Cuenca, and finally, less than 3 hours away, is the Ecuadorian Jungle, so the advantage that Ecuador has is the use of territoriality and geographic space that is capable of capturing the attention of innovation”.

4.16 Scientific tourism and tourism

Bosque Medicinal is very critical of tourism, for example, Ronal Chaca argues that issues such as ecotourism, rural tourism, among others, are nothing more than commercial labels that are applied to both rural and natural spaces, so the project unlike the others, is committed to a scientific, spiritual and mindfulness tourism, where the interesting thing is knowledge and how people can find themselves through natural resources. For example, one of the areas in which Bosque Medicinal works is clinical psychology, where techniques such as forest baths that began in Japan since 1980 are used. Another example is that Bosque Medicinal has four waterfalls, two of which are sacred, in such a way that spaces have been created for public events; in this sense, in times of pandemic, Bosque worked with people who had addiction problems and they had the presence of clinical psychologists from the Ministry of Public Health and shamans. From this, an alternative therapy was sought that helped these people reduce levels of addiction, depression, anxiety and stress from 30% to 40%.

For a better understanding, the different types of tourism used by Bosque Medicinal will be defined:

Table 9. Types of tourism

Type of tourism	Definition
Cultural Tourism	Cultural tourism is a type of tourist activity where the main focus of attention is based on the tourist learning, discovering, experiencing and consuming intellectual, spiritual, material and emotional attractions that encompass arts, architecture, historical heritage, cultural heritage, gastronomic heritage., literature, music, creative industries and living cultures with their ways of life, value systems, beliefs and traditions.
Ecotourism	

	<p>Ecotourism is a type of tourist activity in which the visitor observes, learns, discovers, experiences and appreciates biological and cultural diversity, therefore it requires special management processes to minimize the negative impact on the ecosystem.</p>
Rural tourism	<p>Rural tourism is a tourist activity in which the visitor's experience is related to nature, agriculture, ways of life and rural cultures. This tourism to be rural has the following features:</p> <ol style="list-style-type: none"> 1. Low population density. 2. Territory where agriculture and forestry is essential. 3. Traditional ways of life.
Urban tourism	<p>Urban or city tourism is a type of activity that takes place in an urban space and is characterized by its non-agricultural economy based on administration, manufacturing, commerce and services.</p>
Spiritual tourism	<p>Spiritual tourism refers to a group of people who seek in their travels, in addition to recreational, pleasure or cultural aspects, the power to connect their minds and spirits through the practice of rituals with mystical nature aspects. (Secretaria de turismo del gobierno federal, 2009).</p>
Scientific tourism	<p>Scientific tourism aims to achieve a better understanding of nature from a scientific perspective. This type of tourism is commonly made up of students, teachers and researchers from different disciplines who travel to places with particular natural characteristics and which also have facilities for scientific research. (García et al., 2017).</p>
Mindfulness	<p>The Bosque Medicinal Foundation tries to apply mindfulness, this term means paying attention consciously to the experience of the moment with interest, curiosity and</p>

	acceptance. Mindfulness is used to refer to both a theoretical construct and a practice such as meditation, which consists of focusing attention on a certain object, for example, that object can be the breath, and based on this, it is about observing other sensations, feelings and ideas in the present (Moñivaz et al., 2012).
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Source: UNWTO Tourism Definitions, 2021, UNWTO.

Produced by: authors

Figure 21. Activities in Bosque Medicinal



Source: @copyright

4.17 Indicators and possible internationalization of the project

Since Bosque Medicinal has not developed its own indicators to measure compliance with its objectives, it has been decided to use the environmental governance indicators for Latin America and the Caribbean proposed by the Inter-American Development Bank (IDB). In the same way, the indicators proposed by the Sustainable Development Goals will be used in order to observe to what extent Bosque Medicinal, in the exercise of its functions, contributes to the fulfillment of these objectives at the national level. In addition, it will be possible to conclude if the project can, in the future, be internationalized.

4.18 Environmental governance indicators proposed by the IDB

4.18.1 Regulation and compliance

Clear and appropriate institutional mandates

Precision in jurisdiction, objectives and authority

Bosque Medicinal has a statute that was signed on February 14, 2018 and approved by the Ministry of the Environment, which establishes various issues of its structure such as objectives, purposes, financing, rights and duties of the members, etc. This document is in charge of regulating this project. It should be noted that Bosque Medicinal cannot exercise political, racial, labor, union or religious matters, and it cannot carry out credit or trade activities either. The statute of the Fundación Bosque Medicinal (2018), establishes the following objectives and purposes:

Bosque Medicinal Main goal: the main goal of the foundation is the common good that is, of society as a whole, by involving some activities such as promoting, developing, promoting, protecting and conserving nature, in addition to the sustainable management of natural resources and sustainable human development that will aim to improve the quality of life and the well-being of people.

Purposes of Bosque Medicinal: For the fulfillment of the objective of Bosque Medicinal, the following purposes are established within the statute:

- a) Develop programs and projects for conservation, environmental management, scientific research, ecotourism, training and environmental education at the local, national and regional levels.
- b) Create conditions for the development of their activities through contracts or agreements with non-profit entities, either nationally or internationally.
- c) Dissemination of environmental values through education and awareness of people, whether they are children or adults.
- d) Organize or carry out all kinds of events either inside or outside the country, as long as it helps to fulfill the project objective.
- e) Promote the conservation of flora and fauna.
- f) Support the afforestation of areas that have been deforested.

- g) Support the execution of ideas that are presented by people as long as it agrees with the objective of the foundation.
- h) Coordinate the provision and organization of expeditions in the Amazon rainforest in order to educate and inform about the importance of its biodiversity for the earth.
- i) Carry out activities for the integral development of the foundation.
- j) The foundation will celebrate all types of cooperation agreement as long as it goes hand in hand with the objective of the project, either with academic institutions, financial organizations, non-governmental, union and social organizations in general.

Coordination between institutions

Regarding the coordination of institutions, Bosque Medicinal has generated cooperation agreements with two Universities of the Czech Republic located in Brno, which are the Universities of Mendel and the Masaryk University. Hence, there is the cooperation that took place with the UNIDA consortium, which is an essential partner for Bosque Medicinal due to the fact that it brings together almost 15 universities, including the University of Azuay. In addition to these agreements or alliances generated, Bosque Medicinal has the support of its partners, which in total are 5 and are: UNIDA, Sklenářka, Swiss Medicinal Forest, University of Azuay, and Forest.Ink.

Capacity of environmental authorities

Human resource capacity

Profile of the project organizers:

Table 10. Organizers

<p>Athena Alchazidu (Czech Republic)</p>	<p>Fields of knowledge:</p> <ul style="list-style-type: none"> ● Romantic Literatures - Masaryk University ● Translator of literary texts (Spanish-English)
<p>Narcisa Ullauri Donoso</p>	

<p>(Ecuador)</p>	<p>Fields of knowledge:</p> <ul style="list-style-type: none"> ● Latin American Studies ● Social communication ● Educommunication and cultural studies
<p>Diana Alexandra García Orellana (Ecuador)</p>	<p>Fields of knowledge:</p> <ul style="list-style-type: none"> ● International Studies ● International relations, security and development ● International cooperation and local development
<p>Ronal Chaca Espinoza (Ecuador)</p>	<p>Fields of knowledge:</p> <ul style="list-style-type: none"> ● Tourism ● Tourism planning and sustainability; ancestral knowledge applied to tourism
<p>Cristina Poleth Guerrero Alvarado (Ecuador)</p>	<p>Fields of knowledge:</p> <ul style="list-style-type: none"> ● Clinical psychology ● Scientific investigation of ancestral knowledge focused on its practices and the relationship with mental health sciences
<p>Benedicta Soledad Urrutia Mellado (Peru)</p>	<p>Fields of knowledge:</p> <ul style="list-style-type: none"> ● Administration in public management and business development ● Economy and management; entrepreneurship and planning
<p>Juan Antonio Garay Montes (Peru)</p>	<p>Fields of knowledge:</p> <ul style="list-style-type: none"> ● Public Management ● Philosophy, psychology and social sciences

	<ul style="list-style-type: none"> ● Intercultural development with native peoples: Wampis and Awajún from the Condorcanqui Provinces. ● Community Tourism
Matteo Politi (Italy)	Fields of knowledge: <ul style="list-style-type: none"> ● Chemistry and technologies of bioactive substances ● Naturopathy
Uriel Josué López Legaria (Mexico)	Fields of knowledge: <ul style="list-style-type: none"> ● Psychology ● Thanatology ● Acupuncture and Massage ● Existential psychotherapist ● Integrative psychotherapy and logotherapy
Tereza Rumlerová (Czech Republic)	Fields of knowledge: <ul style="list-style-type: none"> ● Psychology ● Traditional amazonian medicine, the use of ayahuasca and the psychotherapeutic use of psychedelic substances.
Maksim Castillo Semionova (Ecuador)	Fields of knowledge: <ul style="list-style-type: none"> ● Tourism ● Audiovisual production
Cecilia Ugalde (Ecuador)	Fields of knowledge: <ul style="list-style-type: none"> ● Advertising and marketing
Miroslav Horák	

	Fields of knowledge:
	<ul style="list-style-type: none">● Languages and Cultural Studies● Anthropology and sociocultural ecology

Source: Mendel University in Brno, 2021.
Produced by: authors

The people named above are some of those who make up the Bosque Medicinal project and, as it can be seen, they all have a specialty in some branch that fits in one way or another with the project. As Ronal Chaca mentioned during the interview, it is this diversity of specialties that is interesting and what makes Bosque Medicinal stand out, since they have a megadiverse group that allows them to have different points of view on a topic. Now, apart from having a group as such in the project, Bosque has the ability to offer volunteering not only to universities in Ecuador but also internationally.

Volunteering

As it could be noted, the group that makes up Bosque Medicinal is a diverse group that knows about different topics and that not only deals with biology and tourism, so, for the same reason, their volunteering is not focused on a single area, but on different such as the study of permaculture, flora, fauna, deforestation, medicinal plants, photography, mental health, etc. It should be noted that, to volunteer in this project, one goes through a process, that is, to be accepted, the students who are interested sign up in a line of research and when they are in Bosque Medicinal, they have to develop a practical job so that in this way their work is demonstrated.

Financial capability

Based on the collected information and the Bosque Medicinal statute, are sources of income:

- a) Economic contributions of the members for ordinary fees, fines and the income of new partners.
- b) Goods and acquired means that are part of the foundation's assets.

- c) Inheritance, bequests or donations made by natural or legal persons, whether they are national or foreign.
- d) Channeling of resources from various sources through alliances with the public or private sector, civil society or local communities.
- e) The resources obtained by acts, contracts and operations allowed by the ecuadorian law, may not be understood as profits of a commercial nature or for tax purposes (Bosque Medicinal, 2018).

Technical capacity

Bosque Medicinal does not have a great technical capacity as such, it is for this reason that the project is intended to advance and grow over time in order to be able to participate in contests and be able to invest in it. For example, Chaca (2021), says that they have not invested a single dollar in promotion issues, so in his case he has invested in a great camera and in the study of an editing program, in order to create videos which were then sent to universities to publicize Bosque Medicinal.

Information and investigation

Environmental impact evaluation

According to Nugra (2021), Bosque Medicinal is not an immediate solution to the environmental impact, until now only studies have been carried out on the species, whether in flora or fauna, however, it has presented some benefits at the local (Gualaquiza), national and international level, because this has made foreigners come to follow an established route in which they invest in different cities, boosting the economy.

4.18.2 Citizen participation

Public participation

Participation in legislation and decision making

The information collected does not talk about citizen participation in the project, however, it should be noted that the Statute clarifies that any idea of a third party that supports and agrees with the objective of the foundation, can be put into execution.

4.18.3 Biodiversity

Biodiversity and planning for its conservation

Due to the fact that the mission of Bosque Medicinal is to generate awareness about the importance of the biodiversity of the forest through the interconnection with the human being, it was possible to appreciate, through the information collected, that there have indeed been several projects carried out in these areas, both in reforestation activities and in the establishment of botanical gardens and the spread of environmental education imparted by its members to the different volunteers and to the community in general. Bosque Medicinal has also contributed to the conservation of biodiversity with the joint work it has carried out with the "Runahurco" Ecological Area of Municipal Conservation, whose objectives are also focused on the protection of biological diversity.

Monitoring of protected species and habitats

Bosque Medicinal has carried out several works in terms of species monitoring, for this, it was possible to observe that the construction of an operations house functioned as the starting point for the foundation to develop its activities of conservation and study of species. As it could be seen in the timeline of the foundation's activities, there are some species of both flora and fauna that have been studied, this, through the collection of information and the use of different strategies and tools such as the use of camera traps, which have already yielded a large amount of relevant information about some species in the area that had not yet been studied by science. In this way, Bosque contributes to the fulfillment of its objective of environmental education as the cornerstone of the project, since its studies materialize in the publication of this information in articles, magazines and books. However, the foundation recognizes that some resources are still needed, especially materials, to expand its spaces and be able to plan better monitoring of species. In terms of protected habitats, the very presence of the foundation in the Runahurco area has delimited in a certain way a space for action in an area of 588,907 hectares, previously protected.

Sustainable use of economically valuable species

In the particular case of Bosque Medicinal, the foundation does not propose a sustainable use of economically valuable species, since, although these are studied by them, the purpose is not to use them in any way, but rather all efforts are directed towards their conservation. In other words, the approach that Bosque Medicinal proposes in terms of species, both flora and fauna, is one that exalts the great diversity that exists in the Amazon, where each species has intrinsic values that enrich ecosystems and maintain the vital balance of the jungle. Nevertheless, there are cases such as Guayusa where its planting and conservation benefit the community's ventures, since it has great medicinal characteristics.

4.18.4 Forests

Conservation of forest biodiversity and ecosystem health

Within this indicator, once again the fact that Bosque Medicinal has directed all its efforts to contribute to the conservation of the Amazon is emphasized, mainly through environmental education for the community and the strategic alliances established with the Czech Republic and the different partners to achieve greater outcomes. Once these strategies have been established, activities have been launched to repopulate deforested areas, since the community has been integrated into the task of conserving forests and their healing properties. Some of the plant species supported by the Medicinal Forest include matico, ayahuasca and cat's claw; as well as timber species such as laurel, balsa, cedar and the rest of the unique members of the flora and fauna within this area.

Maintenance of the productive and social functions of the forests

As mentioned in the previous indicator, Bosque Medicinal has been supporting the productive functions of the Amazon in this area, carrying out important activities in the conservation of different natural resources. However, the establishment of Bosque Medicinal has significantly enhanced one of the ecosystem services of the forest: spiritual enjoyment. As it was known in the interviews, the project has offered a great contribution in matters related

to spiritual tourism, since it has opened up great possibilities for healing through medicinal plants, waterfalls and trails, in general, it has made possible a greater contact with nature.

4.19 Sustainable development goals indicators

Objective 13 goals: Take urgent action to combat climate change and its effects (Recognizing that the United Nations Framework Convention on Climate Change is the main international intergovernmental forum for negotiating the global response to climate change)

13.3: Enhance education, awareness, and human and institutional capacity for climate change mitigation, adaptation, impact reduction, and early warning

Indicator: *1 Number of countries that have incorporated climate change mitigation, adaptation, and early warning into primary, secondary and tertiary education curricula*

Although Bosque Medicinal does not function as a state resource for the implementation of environmental education regarding climate change, it has made and continues to make great contributions both in the environmental education given to each of the volunteers and students involved in the project. Bosque Medicinal recognizes that the only way to start preservation and conservation processes is through education, for this reason, it uses the wide natural space that this area offers as an alternative way to give and receive the necessary knowledge and concepts so that it is the same community that subsequently proposes initiatives related to conservation. In addition, it should be noted that the space that Bosque Medicinal opens for students is not only aimed at students professionally related to the central areas of the project, but is open to students belonging to any branch. Ecuador, at the state level, could improve awareness of climate change mitigation and adaptation issues and, at the same time, improve compliance with the SDGs by inviting the community to join projects such as Bosque Medicinal, which offer an alternative path towards conservation.

13. b: Promote mechanisms to build capacity for effective climate change planning and management in least developed countries and small island developing States, with particular emphasis on women, youth, and local and marginalized communities

Indicator: *Number of least developed countries and small island developing States receiving specialized support, and amount of support, including financial, technological and capacity-building, for capacity development mechanisms of effective planning and management in relation to climate change, including those focused on women, youth and local and marginalized communities*

Bosque Medicinal, through links with czech Universities such as Mendel University and Masaryk University; as well as the link with czech businessmen, has been the recipient of donations, especially in the financial field, in order to increase the capacity of the project. However, Bosque has also been a recipient of human capacity, since this meeting between the project and different institutions has expanded knowledge of it at an international level, thus, more and more people are interested in learning about Gualaquiza and contributing in some way to the project. At the national level, Bosque Medicinal has managed to link its objectives with the different realities that welcome the communities present in the territory, prioritizing the role of women and indigenous communities, since it is from here that the leadership and ancestral knowledge that shape the bases of the foundation are born. Ecuador's inclination towards projects of this type could expand its capacity for action in terms of environmental protection since, as one of the interviewees mentioned, sometimes the projects that are born from the State hinder the objectives of cooperation and environmental conservation.

Objective 15 goals: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss

15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests, and substantially increase afforestation and reforestation globally

Indicator: *Advances towards sustainable forest management*

As mentioned in the previous indicators, Bosque has responded, since its birth in 2016, to its objective of conserving the biodiversity of this area of the Amazon through different activities that are aimed at the reforestation of different trees and plants. Within this period, they have developed activities mainly in the preservation of the tropical forest and its

biodiversity, carrying out a comprehensive study of the territory, monitoring its changes and analyzing the distribution of species and biodiversity. Likewise, beyond carrying out reforestation processes, Bosque Medicinal has proposed the creation of a botanical garden where it works with the collection of plants used in traditional natural medicine, in art, architecture and some crafts, that is, Bosque Medicinal not only carries out reforestation projects, but also recovers and exalts the values of ancestral medicine that is born from the forests and their communities. In this way, Bosque Medicinal has contributed and could continue contributing to the fulfillment of this objective of sustainable development, since it is precisely carrying out its activities in one of the forest areas that most require recovery worldwide.

15.5: Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both the demand and supply of illegal wildlife products

Indicator: *Proportion of specimens of wild flora and fauna in trade originating from poaching or illegal trade*

Although Bosque Medicinal has not stated as one of its objectives to help eradicate poaching and species trafficking, one of the interviewees mentioned that the physical presence of the Bosque Medicinal station and the constant flow of both the team and the volunteers has discouraged, above all, hunting in this area. For this reason, although indirectly, it can be seen that the project helps in a certain way to meet another objective of sustainable development, carrying out work both in the study of species and in the protection of their integrity.

4.20 The environmental management of Bosque Medicinal in the face of the current health crisis

The health crisis caused by Covid-19 has triggered serious consequences around the world and the effects have also spread to territories such as the Amazon, affecting not only the health of the communities present there, but also evidencing the lack of information regarding the effects of problems of this magnitude in these territories and leaving a space to rethink prevention and fight against future pandemics. In the case of Bosque Medicinal, according to Chaca (2021), the pandemic partially transformed the dynamics that were normally carried out, since the activities focused on continuing to maintain contact with Czech universities to

strengthen research-related issues and also prioritized the publication of the UNIDA book. Due to the difficulty of bringing volunteers, work was done through the dissemination of articles and publications, as well as colloquiums between universities to exchange knowledge and develop inclusive chairs. Chaca (2021), comments that he is currently collaborating in shared classes with Masaryk University, where spaces are shared between Czech students and Ecuadorian students to boost conservation issues. Likewise, he comments that the territory has been restored in Bosque Medicinal through afforestation programs of endemic species such as Sangre de Drago, Cascarilla and Guayusa. On the other hand, the link with Forest Ink allowed the promotion and dissemination of the work carried out by Bosque Medicinal and Chaca (2021) mentions that, thanks to this, a visit of about 20 Czech students and volunteers was eventually achieved and, in addition, the visit of more students from Mendel University is expected for February 2022 with whom they will work on research issues and the launch of a documentary. In this way, it can be seen that the activities carried out by Bosque Medicinal continued and continue even during the current context, in which the environmental crisis is accentuated and in which the vulnerability of ecosystems and communities is even greater. Although Bosque Medicinal still does not have exact information regarding the effects of the health crisis in that specific territory, the continuity of its activities allows research work to advance and be a starting point to deal with these kinds of problems.

4.21 Internationalization of the Bosque Medicinal project

Based on the indicators proposed and analyzed above, it can be examined whether Bosque Medicinal is a project that can be internationalized or not. From the beginning of this chapter, it is explained that the project has very well-defined objectives, purposes, and structure, in addition, the work carried out by them is demonstrated, in such a way that it can be concluded that Bosque Medicinal is a project that does have the potential to be internationalized over time, since it still has some points to strengthen in order to do so. Therefore, each aspect that could be improved or strengthened will be analyzed to give a greater scope and enhancement to the project, not only at the local level, but also at the national or international level. Some of the points to analyze are:

- **Financial capability:** Bosque Medicinal is a project that at the moment only has the investment of its members and businessmen who dare to enter and bet on nature; however, it is a project that needs to seek another form of financing

since the State does not help directly in monetary terms; therefore, a main solution would be to consolidate the project in a better way and thus be able to participate and compete with other projects at a national and international level, where not only recognition is achieved but also monetary awards, which would allow the entry of new funds. As Ronal Chaca argued in his interview, the very fact of having a multidisciplinary team is the main purpose and the strength of the project, since it could be defended in all its senses and from different points of view, that is, the project could be defended from a biological, touristic and psychological point of view, among others.

- **Technical capability:** This point goes hand in hand with financial capacity, because as it is known from the information presented, Bosque Medicinal still needs some resources, especially materials, to expand its spaces and thus be able to have better monitoring and study of species. But this point is one that can only be met through investment, which requires funds.
- **Promotion:** Within the promotional part, it is known that this project is made public through Facebook and its main page, however, the point to be analyzed here is to make Bosque Medicinal better known, , that is, that the page is structured in a better way such as, for example, establishing its general objective and its specific objectives, giving details of the projects to be executed and those that have been executed, what their achievements and results have been in all these years, how people can contribute to this project, what are the requirements for the public to volunteer, why prefer Gualaquiza as a tourist destination, etc; so that in this way the public has a better understanding of what the project is really about. Another point that should be analyzed is that the members themselves make the project known through dissemination, that is, that the project is published and that it is discussed in a section within their web pages, as is the case of the University of Azuay that could make known within its page the agreement it has with the Czech Republic to take care of nature; and thus people would be interested, either to be part or to invest in the project.
- **Cooperation networks:** There is already the establishment of partners within the project, however, as it is present in its statute, it would be important to seek

greater cooperation networks that have the same objective as Bosque Medicinal and that, as mentioned above, enhance the project and that in a certain way makes it known in other places not only nationally but also internationally, thus creating in people the desire not only to visit Ecuador for Bosque Medicinal, but also to invest and bet on ecological projects.

The important thing within this project for its future internationalization is to continue growing together with its organizers, emphasizing the scope that it is having; that the more people get to know what it is about, the more interest they will have not only in being part of it, but also in investing or helping voluntarily in other branches that can go hand in hand with issues that have already been touched on up to now, creating and enhancing the project, which will cause it to become a model that can not only be applied in other countries, but also that Ecuador and other countries that are part of the Amazon can adapt and improve.

Now, taking into consideration the Ecuadorian Amazon, is it really a solution or not? It is a really very complex question in which the project should already be more than consolidated and even so there would still be doubts as to whether it could help or not, however It should be emphasized that up to the point where it is today, the project has presented benefits not only at the local level for Gualaquiza but also at the national level, for Ecuador. The question is how has it helped? The project has helped in the following ways:

In the Amazon sector:

- Prevent, not totally but partially, poaching.
- Reforestation of deforested areas that are established within its statute.
- Study of new species within the forest.

At the national level it has contributed in the following way:

- Although it has not been at the level of the entire country, the tourist plan Ayampe-Cuenca-Gualaquiza offered by them, makes the country's economy more dynamic through the visit of foreigners.

As mentioned in chapter 4, the project does not intend to be the total solution for environmental crises, at least in the Amazonian countries, however, it is an alternative that can grow and present good outcomes that can be applied and adapted to other countries that are part of the Amazon, later, this can be extended to countries that are not Amazonian but that with the mere fact that they want to preserve it can be executed in the same way or even better.

Conclusions

After the completion of this degree work on the preservation and conservation of the Ecuadorian Amazon, case study Bosque Medicinal, it is possible to conclude that the environmental crisis marked a different course for a world that since its inception has been separated of its responsibilities towards the environment, since man, responding to his deep-rooted anthropocentric vision, has sought to satisfy his needs through the destruction and accumulation of natural resources. Under this scenario and, as could be seen in chapters I and II, several theories on the management and use of resources arose in the world. In this way, theories such as the Realist, Liberal, Marxist, Constructivist and those with a more ecological tint such as the Green theory, gave way to the appearance of several polarized positions regarding environmental care.

On the one hand, realist theory supports that man will undoubtedly seek his own benefit within his environment, turning the environment into nothing more than a means to achieve his end and that the State will be the only actor with power over resources. On the other hand, liberal theory emphasizes the search for a more peaceful world in which States cooperate to limit the accelerated negative effects on the environment, also recognizing the crucial role of new actors in the international sphere where the State ceases to be the only actor with voice and vote. In the same way, the ideas coming from a Marxist thought have proposed that the central problem of the use of resources does not respond only to a capitalist vision, rather, this vision is sustained by the production of hegemonic concepts of development that make the environmental realities of each region and each person within them invisible. Constructivist theory, on the contrary, has displayed several ideas that question the environmental information disclosed around the world, since it is from this information, often biased and linked to those in power, from where the positions that support either the accelerated use of resources to satisfy mainly vital and economic needs, or the intrinsic value of nature are born. Finally, Green theory proposes an alternative link between state policies and current environmental circumstances, where environmental sustainability is prioritized over production and consumption.

In this context, it was possible to observe that the world was adapting to different environmental issues. Especially, as mentioned above, management in this area ceased to be exclusively the work of States and became a dispersed task among the new actors. Thus, these

non-state actors, ranging from intergovernmental organizations, non-governmental organizations to transnational companies, have had an important role in the conceptualization and management of natural resources, since they have broadened the spectrum of what is understood as environment, however, they have simultaneously created a context in which the meeting of various fields of action hinders the objectives of environmental management.

Likewise, it was noted that there is no absolute definition of international cooperation, however, the theoretical framework emphasized the role that it has had since its inception after the great wars, when the world recognized that the environmental crisis concerned everyone and not a particular country. This was consolidated with several historical events that marked the birth of the main environmental movements and International Environmental Law, such as the publication of books and reports such as "Silent Spring" and "The Limits to Growth." In addition, a broad vision of the different types of international cooperation was disclosed, where it was observed that it has been south-south cooperation that has been taking center stage in recent years, since it establishes the exchange of capacities among the countries of the global south. Subsequently, it was observed that there were several milestones that laid the foundations for global environmental conservation, among them are: the Stockholm Declaration on the Human Environment of 1972, the Brundtland Report, the Rio de Janeiro Declaration on the Environment and Development of 1992, the Kyoto Protocol of 1997, and the Earth Summit of Johannesburg of 2002. Likewise, these milestones were accompanied by the creation of several international agreements and treaties that had a great impact in terms of environmental protection in specific areas, such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Biological Diversity, the Escazú Agreement, the Paris Agreement, ILO 169 Convention, the United Nations Declaration on the rights of indigenous peoples, and the different declarations on water.

Although these agreements and treaties set a precedent in environmental protection, it was possible to appreciate through the information collected, that in practice they did not always demonstrate effectiveness, because through the creation of norms and rules that were often non-binding, they revealed once again the heterogeneity and dispersion of international cooperation and the global scope of environmental problems. Similarly, it was known that the contemporary world demands consistency and compatibility when it comes to protecting nature, since environmental challenges are increasingly complex and accelerated. It has been

recognized that environmental challenges require more participatory, inclusive and organized action scenarios.

In order to understand the reason for the presence of several cooperating actors in this area, one of the concepts of "environment" was revealed, since it was also determined that there is no single concept, thus, the concept that places man as one more element within the environment was emphasized, leaving behind the exclusion and subordination of the natural environment. In the same way, a broad vision was proposed on the description and the main causes of the global environmental crisis, going from those factors related to industrialization, internationalization, hyper-urbanization, technological revolutions, accelerated production and consumption, to those related to a spiritual crisis. For this reason, it was also relevant to talk about the consequences of environmental degradation, where factors such as climate change, loss of biodiversity, effects on human health, etc., are accentuated by inequality and poverty.

In addition, information pertinent to the definition and types of ecosystem services offered by nature was presented, thanks to which it was possible to understand the benefits that human beings receive from it and that are closely linked to their well-being and proper development. In the same way, the dispute that exists around these services was discussed, since man stopped accessing them with the sole intention of satisfying his basic needs, to only seek power around their management, access and distribution. Finally, in chapter II, the two great positions that define the environmental perspective were revealed: anthropocentrism and biocentrism. It was noted that both visions are strongly supported and substantiated by different thinkers and philosophers, on the one hand, anthropocentrism was understood as that vision that puts men at the center of everything and where nature is just one more means to achieve their goals, establishing the idea that man is the conqueror and dominator of nature. On the other hand, the biocentric vision was understood, in contrast, as that vision that puts man and nature at the same level, that is, man is no longer at the center of everything but life. This position guarantees that each being is related, even at a cosmic level, in such a way that the existence of each one of the beings is important for the correct maintenance of life.

Therefore, after studying everything related to the environment in relation to its different international approaches, treaties that aim to protect and conserve nature over time and the existing environmental crises, the Amazon was studied. Based on this point, the Amazon in general and its importance for all Amazonian countries is explained, in addition to the global

instruments in the Amazon that have been established through several conventions that have helped promote protected areas, sustainable water and land management, sustainable development and environmental management; hand in hand at the international level, there are several organizations that deal with its governance, among which one of the main ones is the Amazon Cooperation Treaty Organization (ACTO), which is an intergovernmental organization that encourages sustainable development and inclusion at the regional level and that broadens the vision of South-South cooperation.

Taking into consideration and understanding the Amazon at an international level, it was understood at a national level where its history and antecedents are known within the Ecuadorian thought, and in this way, according to their trajectory, emphasize their importance at the national level; so a very important milestone occurs from the 2008 Constitution where some articles that protect and defend nature are implemented for the first time, coming to consider it as a subject of rights. Up to this point, the principles established in the Organic Law for the comprehensive planning of the Amazon spatial territorial constituency, which like the constitution protects the rights of nature, are also taken into consideration.

To understand the environmental management that Ecuador has had, the role that international cooperation has had within the environmental issue is exposed, starting again with the 2008 Constitution, which proposes a decentralized international environmental cooperation through the participation of local governments and the civil society, being one of its main protagonists the Ministry of the Environment and Water, since it, as mentioned in chapter 3, has made possible the protection and sustainable use of biological diversity, the strengthening of the National System of Protected Areas (SNAP), the preservation of the natural heritage, the management of forest and water resources, etc. Some of the emblematic projects carried out by this Ministry were the National Program for the Comprehensive Management of Solid Waste, the Environmental and Social Reparation Program (PRAS), the Guayaquil Ecological Project, the National Forestry Control System, and others that were relevant as they aimed to conserve, protect or prevent negative impacts on nature.

Finally, chapter 4 discusses the analysis of the Bosque Medicinal case study; in which, to better understand it, it begins by talking about the Gualaquiza canton, a place belonging to the Amazon and that contains this project within it. Specifying and making known in this way, What is Medicinal Forest?, which is nothing more than a project established for the common

good through the protection and conservation of nature, differentiating itself from other projects by having the vision of dispelling the dichotomy between human beings and nature; to delve deeper into the case study, in chapter 4, it is also revealed who is part of Bosque Medicinal, its objective, its goals, its partners and other points that are essential for its institutional structure. With data on the institutional structure of the project obtained through Ronal Chaca and Fredy Nugra, co-founders, the information was analyzed through ATLAS. Ti in order to study and develop certain indicators of environmental governance based on the IDB and the Sustainable Development Goals, in order to know if it is possible or not to internationalize Bosque Medicinal as a model of conservation and protection for nature. It was concluded that Bosque Medicinal is a project that can be internationalized over time as explained in chapter 4, because despite the weak points that must be strengthened, it already has a defined institutional structure, with a set goal. In addition, it has already established connections with some universities and environmental organizations, in addition to the fact that it has a vision of being able to expand over time to other countries that have similar qualities to the Ecuadorian Amazon in relation to landscapes, distance and other factors, that is, it would go from being a project to being a model for other Amazonian countries, not as a specific and non-flexible model, but as a base model that can be adapted to the different cases existing in each Amazonian country.

Annexes

Environmental governance in the Ecuadorian Amazon and international cooperation

Germany

Name of the project	Phase	Main goal	Geographical scope	Cooperating entity
Hybrid system Isabela- Galápagos Project n°200166744	In progress	Support sustainable development in Ecuador, reducing CO2 emissions related to electricity generation through the introduction of photovoltaic, wind and biofuel energies (pure vegetable oil of pinion) as substitutes for fossil fuel (mainly diesel) used in electricity generation, in the Galápagos Archipelago.	Galápagos (Isabela, Santa Cruz)	Kreditanstalt für Wiederaufbau – KFW
REM Ecuador Program: Redd for Aerly Movers.	In progress	Reduce emissions from deforestation in Ecuador.	Ecuador	Kreditanstalt für Wiederaufbau – KFW
Program to support the National System of Protected Areas.	In progress	Strengthen the functionality of the SNAP through prioritized areas with co-responsible participation of national, regional and local actors.	Ecuador	Kreditanstalt für Wiederaufbau – KFW
Forest Conservation	In progress	Expand and consolidate the “Forest Conservation Incentives	Ecuador	Kreditanstalt für

Program (Socio Bosque) REDD+		Program (Socio Bosque) as part of REDD+ actions at the national level to preserve forest resources and avoid deforestation”.		Wiederaufbau – KFW
Increased resilience to climate change through the protection and sustainable use of fragile ecosystems – Procambio II.	In progress	Increase the resilience of the vulnerable population against climatic and ecological risks.	Ecuador	Deutsche Gesellschaft für Internationale Zusammenarbeit Giz
Program for the conservation and sustainable use of natural heritage – Bioeconomy.	In progress	Improve the conditions for the conservation and sustainable use of biodiversity and natural heritage in Ecuador.	Ecuador	Deutsche Gesellschaft für Internationale Zusammenarbeit – giz
Cooperation between Ecuador and Germany for application-oriented research on biodiversity and climate change – Cocibío.	In progress	Improve the conditions for the creation and development of innovations that can be used in practice.	Ecuador	Deutsche Gesellschaft Für Internationale Zusammenarbeit Giz
Strengthening protected areas and marine and coastal	In progress	Increase the coverage of marine areas under effective management and conservation in order to maintain ecosystem	El Oro (Machala, Santa Rosa)	World Wildlife Fund – WWF Germany

<p>conservation corridors to protect key marine megafauna and ensure sustainable livelihoods.</p>		<p>services and preserve conservation corridors for migratory species.</p>	<p>Manabí (Manta, Jipijapa) Santa Elena (La Libertad, Salinas, Santa Elena)</p>	<p>World Wildlife Fund INC (United States of America) Federal Ministry for Economic Cooperation and Development – BMZ</p>
<p>Food sovereignty and income generation in the Ecuador-Colombia border region.</p>	<p>In progress</p>	<p>Contribution to the strengthening of sustainable rural development, food sovereignty and income generation in the province of Sucumbíos, Ecuador.</p>	<p>Sucumbíos</p>	<p>Federal Ministry for Economic Cooperation and Development – BMZ Johanniter Unfall Hilfe E.V</p>
<p>Permanent supply of drinking water for 1,953 families from 20 indigenous communities in the north Andean</p>	<p>Finished</p>	<p>Improve the living conditions of the inhabitants of indigenous communities in the Andean region of Ecuador.</p>	<p>Ecuador</p>	<p>Federal Ministry for Economic Cooperation and Development – BMZ</p>

region of Ecuador.				Johanniter Unfall Hilfe E.V
Fishing for a prosperous future: making the eastern tropical pacific marine protected area network a driver for local community sustainable development.	In progress	Ensure sustainable local development by implementing community-driven fisheries recovery projects that address the most critical barriers that stand between the current unsustainable status and the sustainability of fisheries. This recovery project will help target species not to be overfished, recover to allow higher yields without exceeding sustainable catch levels, and improve the ability of fishing associations to add value to products, and enable fishing communities to have safer jobs and better incomes.	Ecuador	Blue Action Fund
Participatory and sustainable rural development and promotion of food sovereignty of small indigenous producers of the Andean region in Ecuador and Colombia.	In progress	Contribution to the promotion of sustainable agriculture and food sovereignty of the peasant families of the andean north of Ecuador and the andean south of Colombia.	Ecuador	Federal Ministry for Economic Cooperation and Development – BMZ Johanniter Unfall Hilfe E.V

Compatible practices in the production of socially and environmentally friendly bananas (focus: conventional crops) in Colombia and Ecuador.	In progress	Improve the environmental and social practices of selected farms in Ecuador, in order to reduce the social and ecological risks of conventional banana cultivation at a broad level.	Guayas	World Wildlife Fund – WWF (United States of America) World Wildlife Fund – WWF (Germany)
Conservation and sustainable use of natural resources in Ecuador.	In progress	The national bioeconomy policy is applied in two priority areas.	Santa Elena, Manabí, El Oro	Deutsche Gesellschaft für Internationale Zusammenarbeit – Giz
Putumayo	Finished	Improvement of the productive systems of indigenous communities of the Cuyabeno Reserve and reduction of forest degradation.	Napo, Sucumbíos, Pastaza	World Wildlife Fund – WWF (Germany)
Fund for immediate actions defense program for defenders of COICA (Coordinator of Indigenous Organizations of the Amazon basin)	In progress	Consolidate a mechanism for the prevention and protection of the rights of amazonian indigenous defenders, grouped, mainly, in the bases of COICA and whose main pillar is the collective rights of indigenous peoples.	Sucumbíos, Napo, Pastaza, Morona Santiago, Zamora Chinchipe, Orellana	World Wide Fund for Nature (Germany)

CIM Integrated Expert Consultant	In progress	Strengthen institutional capacities for green financing (raising resources, relationship and strategic alliances, survey of processes - manuals, creation of financing lines).	Ecuador	Deutsche Gesellschaft für Internationale Zusammenarbeit -Giz
Northern Amazon Alliance: population monitoring of Inia Geoffrensis (pink dolphin) and manatee (Trichechus Inunguis) in the Ramsar complex: Cuyabeno-Lagartococha-Yasuní.	Finished	Know the status and population distribution of the pink dolphin (Inia Geoffrensis) and manatee (Trichechus Inunguis) in the Ramsar Cuyabeno – Lagartococha – Yasuní wetland complex.	Orellana, Sucumbíos	World Wildlife Fund – WWF (Germany)
Support for the emerging control and management of forest resources in the Achuar community of Copataza and its area of influence.	In progress	Strengthen the capacities of the Achuar community of Copataza, for the control and sustainable management of the forest resource and its territory.	Ecuador	World Wide Fund for Nature (Germany)
Education and participation to strengthen the management of	In progress	Promote knowledge, develop skills, values and attitudes in the local population (children, youth and adults) towards the	Manabí, Pastaza, Morona Santiago,	Deutsche Gesellschaft für Internationale

protected areas and the sustainable use of natural resources in two landscapes of Ecuador.		conservation and sustainable use of natural resources in two landscapes of Ecuador.	Tungurahua	Zusammenarbeit – Giz
Páramo, base of life II: build local capacities for the sustainable management of high andean areas as a contribution to climate protection and the adaptation of peasant family production systems to climate change.	Finished	Sustainable management of resources, climate protection, adaptation to climate change and improvement of living conditions in the indigenous communities of the highlands of northern Ecuador and southern Colombia.	Cotopaxi (Salcedo)	Federal Ministry for Economic Cooperation and Development - BMZ Johanniter Unfall Hilfe E.V
Investigation of negative effects of mining in communities.	In progress	Determine the negative effects of mining on the crops of the communities for decision making.	Zamora Chinchipe	Wilhelm Oberle Foundation
Cooperation for training and technical assistance COAGRO.	In progress	Promote the development of productive activities and the commercialization of our products, managing to consolidate a sustainable and sustainable development.	Ecuador	Wilhelm Oberle Foundation
Isabela hybrid system	Finished	Construction of a hybrid solar-thermal system through the implementation of a 1.15mwp	Galápagos (Isabela)	Kreditanstalt für

		<p>photovoltaic park, a 1.2mw dual thermal power plant (diesel-pine oil) and energy storage in 3.3mwh batteries, electrical substation, control system.</p> <p>Reduction of the consumption of diesel used for electricity generation / renewal and adaptation of the electrical system / creation of local capacities in the management and operation of renewable energy systems.</p>		<p>Wiederaufbau - KFW</p>
<p>Forest Conservation Program (Socio Bosque) and REDD+</p>	<p>In progress</p>	<p>The REDD mechanism (reduction of emissions from deforestation and forest degradation), which is based on the idea that rich countries pay nations in tropical regions to help them avoid the destruction of their forests and thereby preserve the environment.</p>	<p>Napo, Esmeraldas, Orellana, Santa Elena, Zamora Chinchi</p>	<p>Kreditanstalt für Wiederaufbau - KFW</p> <p>Norwegian Ministry of Climate and Environment</p>
<p>Sustainable Intermediate Cities-SIC</p>	<p>In progress</p>	<p>The main objective of the program is to put sustainable urban development into practice, in accordance with the 2030 Agenda, the new urban agenda and the Paris Agreement on climate change.</p>	<p>Loja (Loja)</p> <p>Azuay (Cuenca)</p> <p>Sucumbíos (Lago Agrio)</p> <p>Manabí (Portoviejo)</p>	<p>Deutsche Gesellschaft für Internationale Zusammenarb eit - Giz</p>

			Tungurahua (Ambato)	
Conservation of sea turtles in the coast of Ecuador.	In progress	Protect and conserve sea turtles and their habitats through the implementation of the national plan for the conservation of sea turtles.	Esmeraldas, Manabí, Santa Elena	Agencia de Cooperación para el Desarrollo Internacional (Estados Unidos de América)

Source: Ministry of Foreign Affairs and Human Mobility 2021

Produced by: authors; <http://app.cancilleria.gob.ec/mapa/#>

United States

Name of the project	Phase	Main goal	Geographical scope	Cooperating entity
Galápagos ecology program for local and international students.	In progress	Inspire and improve conservation and applied scientific education in young people through experiences of experiential education in the field, which promote environmental sustainability in Ecuador.	Napo Galápagos (Santa Cruz)	Ecology Project International
Activities to restore populations of	Finished	Restoration of giant tortoises.	Galápagos	Galápagos Conservancy

giant tortoises in Galápagos.				
Conservation of amazon landscapes.	Finished	Consolidate the governance mechanisms, the implementation of the adaptive management approach in the management of natural resources, the strengthening of territorial management and the technical capacities of key actors in the Yasuní landscape.	Orellana	Gordon and Betty Moore Foundation
Leveraging the power of sustainable local production for the conservation of biodiversity in Galápagos.	Finished	Facilitate the reengineering of land use in Galápagos and fisheries, take the corresponding analysis, both from economic and natural science, to support the formulation of policies by the authorities on land use and fisheries to improve local food production, and at the same time contribute to reducing the introduction and spread of invasive species and production practices that directly affect terrestrial and marine environments, as a consequence of overfishing and harmful land use.	Galápagos	Leona M & Harry Helmsley
Program for sustainability in Galápagos.	Finished	Improve education for the 7,500 elementary and high school students in Galápagos , by strengthening the teaching skills of each teacher in each	Galápagos	Galápagos Conservancy

		educational center in the Galápagos Islands.		
Reducing deforestation in protected areas and mosaics of indigenous territory in Colombia and Ecuador.	Finished	Contribute to the sustainable management of the western zone of the Yasuní biosphere reserve, by improving the natural resource management capacities of local development organizations and provincial governments.	Pastaza (Arajuno, Pastaza) Napo-Tena	Gordon and Betty Moore Foundation
Meeting the needs of humans and nature in the Galápagos Islands phase 2.	Finished	Strengthen the institutional and technical capacity of the DGNP (Galápagos National Park Directorate) for the management of marine and terrestrial areas; improve the management of tourism in the islands and improve environmental management.	Galápagos	World Wildlife Fund – WWF Leona M & Harry B Helmsley Foundation
Strengthening the surveillance and management of fisheries and tourism in marine protected areas of continental Ecuador.	In progress	Strengthen the integrated management of marine and coastal spaces with emphasis on protected marine areas and mangrove concessions.	Manabí, El Oro, Esmeraldas, Santa Elena, Guayas	Wildaid Inc.
Local food systems and sustainable agriculture program.	In progress	Support the improvement of life strategies and food sovereignty of rural communities through the promotion of agroecology in a development process to achieve more sustainable	Imbabura (Ibarra, Pimampiro)	The vibrant village foundation

		production and food systems in the northern highlands of Ecuador.		
Strengthening of the management and surveillance of the Galápagos National Park and Marine Reserve.	In progress	Strengthen the management and management of the Galápagos National Park for the conservation of biodiversity and island ecosystems.	Galápagos	Wildaid Inc.
Strengthen Ecuador's protected area system by focusing on increasing the consolidation of the Yasuní – Pastaza mosaic.	In progress	Strengthen the system of protected areas in Ecuador, focusing on increasing the consolidation of the Yasuní – Pastaza mosaic.	Orellana, Pastaza	Gordon and Betty Moore Foundation
Phase III coastal cleanup initiative in the Galápagos Islands and key marine protected areas of continental Ecuador.	Finished	Create awareness in the population about the need to adopt good environmental practices to reduce marine litter and protect marine and coastal biodiversity.	Santa Elena, Esmeraldas, Manabí, Galápagos, Guayas	The Cocacola Foundation
Conservation of aquatic biodiversity with local communities.	Finished	Conserve freshwater biodiversity in critical sites in the Napo and Paute basins with the participation of local communities.	Sigsig, El Chaco	The Nature Conservancy - TNC
Education knowledge	Finished	Transform school education in the Galápagos Islands in such a	Galápagos	Galápagos conservancy

management activities for sustainability.		way that formal education prepares young people who come to lead long-term efforts to create a sustainable society in Galápagos.		
Strategic action plan for the conservation of land birds in the Galápagos Islands and the control of <i>Philornis Downsi</i> .	Finished	Bird conservation, control and prevention of invasive species.	Galápagos	Galápagos Conservancy
DPNG-gc 2019 Agreement.	Finished	Strengthen key conservation activities of the GNPD (Galápagos National Park Directorate).	Galápagos	Galápagos Conservancy
Facilities for scientific research on monitoring biodiversity and climate change.	Finished	Provide the facilities of infrastructure, logistics and research areas, which allows knowing and understanding the functioning and potential sustainable use of the main ecosystems of southern Ecuador.	Southern Ecuador	International Nature and Culture German Foundation for Research
Development of associative ventures for the sustainable use of biodiversity, in support of changing the productive matrix	Finished	Sustainable use of local biodiversity, as an alternative for income generation for the communities neighboring the conservation areas.	Unspecified	International Nature and Culture

of Ecuador (innovation).				
Promoting the conservation of amphibians in the tropical Andes of Ecuador.	Finished	Develop the action plan for the in situ and ex situ conservation of the Harlequin Snout Frog <i>Atelopus Longirostris</i> .	Unspecified	Critical Ecosystem Partnership Fund
Prevention, early detection and rapid response of invasive marine species in the Galápagos Marine Reserve and the tropical eastern Pacific.	Finished	Control and prevention of invasive species.	Galápagos	Galápagos Conservancy
Identification and control of invasive plants and invertebrates.	Finished	Control and prevention of invasive species.	Galápagos	Galápagos Conservancy
Automatic identification system (ais)- Galápagos National Park Directorate and Ecuador navy.	In progress	Provide the Galápagos National Park Directorate with an additional tool for the control of vessels that navigate within the Galápagos Marine Reserve, in order to improve the control and surveillance of the activities carried out within this protected natural area; as well as to provide safety to people at sea.	Galápagos (San Cristóbal, Santa Cruz, Isabela)	Sea Shepherd Conservation Society World Wildlife Fund - WWF
Galápagos Marine	Finished	Strengthen local capacities for the conservation of Galápagos.	Galápagos	World Wildlife Fund - WWF

Biodiversity Fund.				
Strengthening the capacities and commitments to combat illegal wildlife trafficking in Latin America.	In progress	<ol style="list-style-type: none"> 1. Improve legislative and regulatory frameworks related to wildlife. 2. Build capacity for civil authorities in the judicial and justice sector to prevent, investigate, and prosecute poaching and trafficking. 3. Improve cooperation in countries of origin, transit, and destination to detect, investigate, and prosecute criminal organizations involved in wildlife trafficking. 	Ecuador	International Narcotics and Law Enforcement Affairs (INL)
Conservation of aquatic biodiversity with local communities in the Napo River basin.	In progress	Conserve freshwater biodiversity with local communities in the Napo River basin.	Sucumbíos, Napo	The Nature Conservancy – TNC
The strengthening of the biosafety laboratory for Galápagos 'Biogal'.	Finished	Control and prevention of invasive species.	Galápagos	Galápagos Conservancy
Maintaining 12 years of progress in the tropical	In progress	Secure the progress made over the past 12 years to make marine protected areas a haven for globally important marine	Guayas (Guayaquil)	Walton Family Foundation

eastern Pacific seascape.		biodiversity and a driver of local sustainable development by 2025.	Santa Elena (Salinas) Manabí (Jipijapa, Puerto López, Manta)	
Technical and logistical support for the identification of ordering and regulation measures for the pole and line tuna fishery in Ecuador.	In progress	Set the ordering for the tuna rod fishery.	Manabí	Global Environmental Facility - GEF
Support for key conservation activities in the Galápagos National Park.	Finished	Strengthen GNP key conservation activities.	Galápagos (San Cristóbal, Santa Cruz)	Galapagos Conservancy
Capacity building of local governments and indigenous organizations in the Yasuní – Pastaza mosaic.	Finished	Generate information, develop analyzes and support processes that allow strengthening the capacities of local governments and indigenous organizations in the Yasuní-Pastaza mosaic and generate technical inputs for comprehensive territorial management.	Napo Pastaza	The Nature Conservancy – TNC

From ecology to neurobiology, spatial cognition in rainforest frogs.	In progress	Elaboration of the encyclopedia of amphibians in Ecuador.	Ecuador	Leland Stanford Junior University
Subtidal ecological monitoring: continuity of subtidal ecological monitoring in the Galápagos Marine Reserve.	In progress	Evaluate the biodiversity of the subtidal communities of the GMR (Galápagos Marine Reserve), as well as environmental parameters, at different temporal and spatial scales, to generate diagnostic indicators on their status, the effectiveness of management measures and their adaptation to climate variability.	Galápagos	International Community Foundation Conservation International British Embassy
Implementation of community natural resource management in three priority Amazon basins.	In progress	Maintain the health of ecosystems and promote social well-being through the sustainable management of the natural resources of the communities in three hydrographic basins of the Amazon: Marañón, Santiago / Pastaza and Madidi / Llanos de Mojos.	Pastaza, Morona Santiago	Margaret A. Cargill Foundation
Coastal ecosystems for the future.	In progress	Support improving the quality of life and conservation of ecosystems in three mangrove concessions in the Gulf of Guayaquil.	Guayaquil	Angell Foudation

Pest risk analysis for updating or establishing import requirements for products or by-products to the Galápagos Islands.	Finished	Pest analysis and prevention.	Galápagos (San Cristóbal, Santa Cruz)	Galápagos Conservancy
Landbird conservation through effective monitoring and management with a special focus on control of the parasitic fly <i>Philornis Downsi</i> .	Finished	Ensure the long-term conservation of small land birds in Galápagos, providing strategies to the GNPD to reverse their decline based on scientific understanding of underlying causes and factors.	Galápagos (San Cristóbal, Santa Cruz)	Galapagos conservancy
Strengthening of biosafety controls.	Finished	Prevent the entry of invasive species to Galápagos.	Galápagos	Wildaid Inc
Strategic action plan for the prevention, early detection, and rapid response for marine invasive species.	Finished	Ensure the long-term conservation of the ecosystems and species of the Galápagos Marine Reserve.	Galápagos (Santa Cruz, San Cristóbal)	Galapagos conservancy
Building a regional strategy to integrate environmental and social	Finished	Support the authorities responsible for the management of biodiversity and protected areas at the regional level (in Bolivia, Colombia, Ecuador and	Imbabura, Esmeraldas, Zamora Chinchipe, Pichincha	Critical Ecosystem Partnership Fund

safeguards into mining practices in the tropical Andes hotspot.		Perú), in strengthening themselves with information, work spaces and exchange of experiences and technical and advocacy capacities, to improve the attention to the mining issue and the reduction of its real and potential impacts on the ABCs, corridors and protected areas or in their external influence zones, to reduce the impacts generated by mining and that have direct effects on the conservation of key biodiversity areas , corridors and protected areas.		
Conservation of vulnerable species in Galápagos through effective management of invasive plants and invertebrates.	Finished	Provide effective and environmentally friendly techniques to restore Galápagos ecosystems through an integrated scientific approach.	Galápagos (Santa Cruz, San Cristóbal)	Galápagos Conservancy
Amazon waters: development of a roadmap for conservation implementation.	Finished	The purpose of the project is to develop a comprehensive and feasible implementation plan to advance integrated basin management in key parts of the Amazon River and four priority sub-basins within the Amazon River.	Unspecified	Margaret A. Cargill Foundation
Ethnobotanical study of crop	In progress	Ethnobotanical exploration of the interactions between the	Napo	Tulane University

domestication and crop diversification among Mondayacu Runa.		Runa Kichwa of the Mondayacu community on plant crops and their wild relatives.		
Biodiversity conservation and sustainable management of two priority landscapes in the Amazon region.	In progress	Develop a complete proposal to improve ecological connectivity, forest and biodiversity conservation, and forest-friendly activities with an integrated management approach, in the landscapes of Aguarico-Putumayo (north) and Palora-Pastaza (south) of the ecuadorian Amazon.	Morona Santiago (Taisha, Pablo VI, Palora, Morona , Huamboya) Orellana (Orellana, Aguarico)	Global Environmental Facility - GEF
Strengthening of the animal health surveillance area.	In progress	Strengthen the institutional management of the biosafety and quarantine control and regulation agency for Galápagos on Isabela Island.	Galápagos: Isabela	Intercultural Outreach Initiative
Proposal for the implementation of the sterile insect technique for the control of ceratitis capitana in Galápagos.	Finished	Acquire and import sterile males of ceratitis capitata for release in the Galápagos Islands.	Galápagos	Galápagos Conservancy
Coastal cleanup initiative - phase IV in the Galápagos Islands and key	In progress	Create awareness of the need to adopt good environmental practices to reduce marine litter and protect marine and coastal biodiversity.	Galápagos, Guayas	The Cocacola Foundation

marine protected areas of continental Ecuador.				
Millennium Innovation Laboratory phase 2.	In progress	The project will contribute to the thousandth mission of developing and testing innovative approaches to address the public and environmental health effects caused by the dumping of more than 2.2 tons of garbage per week in polluting landfills in the Galápagos National Park. It will demonstrate how innovations in science and on-farm post-harvest processing can be harnessed to create organic fertilizer from fish waste.	Unspecified	National Philanthropic Trust
Protect primary species in Ecuador's Yasuní National Park from the increased illegal trade in bushmeat and pets.	Finished	Protect the most vulnerable species of primates in the Yasuní National Park from illegal trade. 1: Assess the impacts of the bushmeat and pet trade on primate species in the catchment area 2: Raise awareness of the negative impacts of bushmeat and pet trades with relevant stakeholders, and provide relevant information to	Unspecified	Margot Marsh Biodiversity Foundation

		authorities to increase and improve law enforcement.		
Consultancy for pest risk analysis for the update or establishment of requirements for importing products to the Galápagos Islands.	In progress	Prepare risk analysis studies for the update of product requirements.	Galápagos	The International Galápagos Tour Operator Association
Conservation of tropical forests.	In progress	Support and training for the management of private reserves, restoration and reforestation, and for research, education and volunteering related to conservation.	Manabí	Ceiba Foundation for tropical conservation
Environmental education.	Finished	Support the inter-institutional environmental committee, coordinated by the Ministry of the Environment and other institutions, in the implementation of awareness processes, to achieve citizen commitment to care for the environment.	Loja	International Nature and Culture
Water for the future.	In progress	Conserve or restore 1,095 hectares through financial mechanisms known as water funds.	Unspecified	The Nature Conservancy – TNC
Project GEF 9282 "safeguard the biodiversity of	In progress	Component 1: Promote the development of a state-of-the-art system for biosafety.	Galápagos	Island Conservation

the Galápagos Islands by promoting the improvement of biosecurity and the creation of an environment conducive to the restoration of the ecosystems of the Galápagos Islands."		<p>Component 2: solidify the social path for the protection and recovery of the ecosystems of Floreana Island.</p> <p>Component 3: promote the recovery of island ecosystems after the eradication of invasive species through the establishment of key species (giant tortoises).</p>		
Environmental and scientific education of the rural communities of the Jama Canton.	In progress	Increase the level of education in rural areas, and improve the knowledge of biological sciences in students of the country to promote the conservation of the biodiversity of the area.	Manabí	Ceiba Foundation for tropical conservation

Source: Ministry of Foreign Affairs and Human Mobility 2021

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United Kingdom

Name of the project	Phase	Main goal	Geographical scope	Cooperating entity
Create awareness in the population about the need to adopt good environmental practices to reduce marine litter and protect marine and coastal biodiversity.	Finished	Create awareness in the population about the need to adopt good environmental practices to reduce marine litter and protect marine and coastal biodiversity.	Galápagos	Galápagos Conservation Trust GCT (Reino Unido)

Source: Ministry of Foreign Affairs and Human Mobility Humana 2021

European Union

Name of the project	Phase	Main goal	Geographical scope	Cooperating entity
Rural organizations and associative production and marketing mechanisms - A comprehensive development model for ecuadorian agriculture.	In progress	Strengthened and disseminated models of inclusive, participatory and associative value chains, within the framework of public policies in Ecuador, adequate in terms of environmental and institutional sustainability and generators of economic income.	Chimborazo, Napo, Manabí, Sucumbios, Orellana	European Commission (European Union) Cefa Onlus - Italy (Italy)
Promotion of productive development in the demonstration territory of Cangahua (Pichincha) with a focus on rights, environmental sustainability and gender equality.	In progress	Improve the income of small and medium-sized producers in the Cangahua demonstration territory by promoting productive development.	Pichincha (Cayambe)	European Union
Alliances, dialogue and good practices between the civil society, the business sector and local governments in the ecuadorian Amazon, to achieve the SDG goals	In progress	Contribute to the achievement of the SDGs in two provinces of the ecuadorian Amazon.	Pastaza Orellana	European Commission (European Union) Codespa Foundation (España)

linked to sustainable tourism.				
Improvement of the municipal service for the comprehensive sustainable management of solid waste and implementation of its public policies in Ecuador.	Finished	Contribute to strengthening the comprehensive management of solid waste in Ecuador, in according to objective 7 of the National Development Plan 2013-2017, with the participation of the municipal GADs, the association of ecuadorian municipalities (AEM), the ministry of the environment and organizations of civil society.	Ecuador	European Commission (European Union) Acra (Italy)
Increased enforcement and cooperation capacity to combat wildlife and timber trafficking in the Andes-Amazon region - env/2018/401-256	In progress	<ol style="list-style-type: none"> 1. Understand the dynamics of illegal wildlife and timber trafficking in the Andes-Amazon region. 2. Develop collaborative mechanisms between civil society and government agencies to improve law enforcement and control and surveillance systems to deal with illegal wildlife and timber trafficking. 3. Inform and engage civil society allies in supporting the actions of authorities to combat illegal acts of wildlife and timber trade. 	Napo, Morona Santiago, Zamora Chinchipe, Orellana, Sucumbíos, Pastaza	European Union

<p>Strengthening civil society after the earthquake: towards inclusive and participatory social and economic development.</p>	<p>Finished</p>	<p>Contribute to strengthening the role of civil society as an actor in governance, and promote sustainable and inclusive growth.</p>	<p>Ecuador</p>	<p>European Commission (European Union) Avsi Foundation (Italy) Cesal (Spain)</p>
<p>Strengthening of women and men human rights defenders in the Andean region.</p>	<p>In progress</p>	<p>Contribute to the comprehensive protection of the rights of women and men defenders of territorial and environmental human rights in the Andean region who defend the rights of rural communities affected by extractivist activities in Bolivia, Peru, Ecuador and Colombia.</p>	<p>Ecuador</p>	<p>European Commission (European Union)</p>
<p>BIOFIN</p>	<p>In progress</p>	<p>Develop financing instruments and mechanisms to support conservation, mitigation and adaptation to climate change and sustainable development.</p>	<p>Ecuador</p>	<p>European Union United Nations Development Program – UNDP (United Nations - UN)</p>

Promotion of productive development in the Píllaro Ramal Norte demonstration territory (Tungurahua) with a focus on rights, environmental sustainability and gender equality.	In progress	Improve the income of small and medium-sized producers in the Píllaro Ramal Norte territory, through productive promotion based on the rational and climate-smart use and management of natural resources, contributing to their well-being.	Tungurahua	European Commission (European Union)
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Source: Ministry of Foreign Affairs and Human Mobility 2021

Produced by: Authors; <http://app.cancilleria.gob.ec/mapa/#>

Spain

Name of the project	Phase	Main goal	Geographical scope	Cooperating entity
Strengthening of national and regional systems for monitoring and managing risks of drought and floods in a context of climate change and desertification in the Andean countries.	In progress	Reduce the social and economic impacts associated with floods and droughts by strengthening capacities and articulating national and local regional institutions involved in managing the risk of droughts and floods in the countries of South America.	Manabí, Guayas, Azuay, Loja, El Oro, Santa Elena	Spanish Agency for Development Cooperation - AECID
Productive promotion and comprehensive rural development in La Paquita demonstration territory and	In progress	Improve the income of small and medium-sized producers of La Paquita property and surrounding sectors through productive promotion	Guayas (Naranjito, Coronel Marcelino Maridueña)	Spanish Agency for Development Cooperation – AECID

surrounding areas (Guayas province).		based on the rational and climate-smart use and management of natural resources.		
Organic production, fair trade and responsible consumption, Ecuador, Code 18-CO1.0928.	In progress	Contribute to a model and sustainable local development with a gender approach through agro-food systems and fair relations between the countryside-city, producers-consumers within the framework of fair trade and the SSE (Social and Solidarity Economy) in Ecuador.	Chimborazo (Riobamba) Pichincha (Puerto Quito) Manabí (Portoviejo) Esmeraldas (Eloy Alfaro)	Spanish Agency for Development Cooperation – AECID Manos Unidas
Truth, justice and reparation, a process towards the defense and enforceability of women, peoples and nature rights.	In progress	Contribute to the full exercise of women, indigenous peoples, nationalities and nature rights from the leadership of women, for the consolidation of good living.	Ecuador	Basque Agency for Development Cooperation
Generate sustainable development opportunities for 30 community organizations in Ecuador through the innovation of agri-food products and their	In progress	Contribute to the improvement of the social and economic conditions of families in Ecuador by generating opportunities for sustainable and equitable development in the agricultural sector and	Chimborazo, Loja, Cotopaxi, Los Ríos, Manabí, Pichincha, Imbabura, Guayas	Trade Foundation for Development

internationalization in alternative channels.		the internationalization of its products.		
Development of productive alternatives and business opportunities in a dry forest environment, Cerezal-Bellavista demonstration territory (Santa Elena Province).	In progress	Improve the income of small and medium-sized producers in the Cerezal - Bellavista territory, through productive promotion based on the rational and climate-smart use and management of natural resources, and thus contribute to their well-being.	Santa Elena	Spanish Agency for Development Cooperation – AECID
Promote the sustainability of forestry enterprises of small producers in Manabí and Esmeraldas to improve their family income.	In progress	Improve the resilience of the rural populations of Manabí and Esmeraldas.	Manabí Esmeraldas (Eloy Alfaro, San Lorenzo)	Spanish Agency for Development Cooperation – AECID
Strengthening of local and community leadership for the enforceability of the human right to water in 4 cantons in Orellana and Sucumbíos provinces, Ecuador.	Finished	Promote citizen participation for sustainable water management from a territorial and governance approach.	Orellana, Sucumbíos	Manos Unidas Lugo Town Hall Oviedo Town Hall Tarragona Town Hall San Fernando Town Hall

				Murcia Town Hall
Empowerment of communities and water boards for inclusive decision-making around water management in a context of climate change in Orellana (Ecuador).	Finished	The communities, water boards and local institutions of the Orellana province carry out community and inclusive water management in a context of climate change.	Orellana	Barcelona Provincial Council Tarragona Town Hall Reus Town Hall Rubi Town Hall Cambrils Town Hall
Development of potato germplasm with resistance to late blight, cyst nematode and with quality for fresh and processed consumption to improve the productivity using biotechnological tools.	In progress	Develop potato germplasm with resistance/tolerance to late blight, cyst nematode and quality using the genetic diversity available in the ecuadorian potato collection, assisted with the use of molecular markers.	Carchi	Spanish Agency for Development Cooperation – AECID
The Project "Sustainability and Sustainability of women's associations of craft production and related in the San Vicente Canton".	Finished	Promote entrepreneurship with natural resources in the area.	Manabí (San Vicente)	Cooperates Youth for International Development Cooperation

<p>Innovation in the use of the organic fraction of domestic waste aimed at agroecological production in the Pastaza Canton, code 2016/acde/002427.</p>	<p>Finished</p>	<p>Contribution to the sustainable development of the inhabitants of the Pastaza canton, using the organic fraction of solid waste directed to agroecological production.</p>	<p>Pastaza</p>	<p>Spanish Agency for Development Cooperation - AECID</p>
<p>Strengthening the sustainability of groups of women producing healthy and sovereign food in the rural communities of the Cotacachi Canton, Imbabura, Ecuador.</p>	<p>Finished</p>	<p>Contribute to the improvement of the socio-economic conditions of women from organized popular sectors in the northern region of Ecuador.</p>	<p>Imbabura (Cotacachi)</p>	<p>Burgos Town Hall</p>
<p>Support for sustainable construction through the Manabí workshop school and the strengthening of the bamboo construction production chain.</p>	<p>In progress</p>	<p>Contribute to the consolidation of the social housing policy in Ecuador with environmental sustainability and local development criteria.</p>	<p>Manabí</p>	<p>Spanish Agency for Development Cooperation - AECID</p>
<p>Acquisition of equipment to strengthen the research laboratories of the Santa Catalina Tropical Pichilingue experimental station of INIAP (National Institute of Agricultural Research).</p>	<p>In progress</p>	<p>Strengthen INIAP's lines of research (genetic improvement, integrated management of natural resources, and agroindustry), through the acquisition of equipment for the laboratories of the research departments of the Santa Catalina and</p>	<p>Pichincha, Los Ríos</p>	<p>Spain Embassy in Ecuador</p>

		Tropical Pichilingue experimental stations.		
Rural Sanitation and Water Infrastructure Program.	Finished	Incrementar la cobertura de los servicios de agua potable y saneamiento en localidades rurales y así disminuir las brechas de cobertura existentes entre regiones, enfocándose hacia las comunidades más pobres del país.	Ecuador	Spanish Cooperation Fund for water and sanitation in Latin America and the Caribbean

Source: Ministry of Foreign Affairs and Human Mobility 2021

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INTERVIEWS

GRADUATION PROJECT PRIOR OBTAINING A BACHELOR'S DEGREE IN INTERNATIONAL STUDIES, BILINGUAL MENTION IN FOREIGN TRADE.

INTERVIEW GUIDE:

Interview's objective:

- Get to know the Bosque Medicinal Foundation in depth, as well as its creators and participants, so that we can collect the necessary information about their experiences, expectations and criteria that contribute to the development of our titling project.

Interviewee's general information:

- Names and surnames
- Age
- Gender
- Profession

QUESTIONARY

BOSQUE MEDICINAL

- How has the experience of carrying out the project been?
- What environmental problems does Bosque Medicinal solve?
- What future plans do you have for linking with other organizations, universities, international projects?

CANTONAL PERSPECTIVE

- How did the Gualaquiza community react to the project? Did they accept easily or was there a bit of resistance?
- Do you maintain contact with the indigenous community? Do Bosque Medicinal projects/practices respond to ancestral practices? Do you count on the presence and collaboration of the indigenous community?
- What are the most evident changes/benefits in Gualaquiza since Bosque Medicinal began?

INTERNATIONAL REGULATIONS

- Do you think it is possible to use Bosque Medicinal as an environmental management model for other Amazonian countries?
- What international strategies can be applied in Ecuador to improve Bosque Medicinal?

ENVIRONMENT

- How is research carried out on the different species existing in the environment, whether in fauna or flora?

Name: Freddy Nugra Salazar

Profession: biologist, master's degree in tropical and Andean agroecology, researcher, consultant, professor. He currently works in municipal protected areas in southern Ecuador.

Age: 45

Date: August 24, 2021

BOSQUE MEDICINAL

Daniela Quintanilla: How has the experience of carrying out the project been?

Freddy Nugra: The experience of Bosque Medicinal being the founder and creator, is for a biologist like opening a new space for people who do science, who do culture, who do tourism, also communication, new spaces in the south of Ecuador and that is pleasant for us, it fills us with satisfaction to contribute to the academy, to the local and scientific community, and also to the teachers who teach their classes from the territory. And I believe that we are barely two years old and we already have enormous results, we would say, we have expanded the protected areas, we have built a refuge. We have agreements with international universities as well as local ones and several of our researchers from the universities to which I belong, biology, psychology, tourism, law, and communication, are joining our project.

María José León: What environmental problems does the Bosque Medicinal solve?

Freddy Nugra: Well, the project is not going to provide salvation, everyone is responsible for what they do. An example, if a student who did not have the opportunity to have a practice in the jungle on how to understand nature, ecology, the ecological quantity of forests, there we are preparing people, scientists and students, contributing not only to the territory. Another contribution would be in the territory that people already feel committed to having a scientific station and that it links the community in all matters and also having foreign visitors, it is like rain. Why the rain? Because we link the entire territory to the market, taxis, shopping centers, and all other basic services that need to be invested in order to generate or operate our projects with the foreign volunteers and scientists who arrive.

Daniela Quintanilla: What future plans do you have for linking with other organizations, universities, international projects?

Freddy Nugra: Yes, well as already answered in the first question, it's the publications, not the link with the academy. Right now, we have scientists who come to study the forestry part, to have permanent plots and to measure its functional diversity, its vegetation cover, its land use, its medicinal plants and also some new species for science that our studies reveal, along with teachers from the Czech Republic.

CANTONAL PERSPECTIVE

María José León: How did the Gualaquiza community react to the project? Did they accept easily or was there a bit of resistance?

Freddy Nugra: Well, I really don't have any indicators, studies on whether the community accepts it or not, but conversations with the authorities, with the vice prefect who came one day to the inauguration of a cabin project, the canton's mayor has done some environmentally friendly engineering works towards the municipal refuge and is also committed to continue conserving the protected area that is now municipal of more than 87,000 hectares that will be uploaded to the national system of protected areas.

Daniela Quintanilla: Do you maintain contact with the indigenous community? Do Bosque Medicinal projects/practices respond to ancestral practices? Do you count on the presence and collaboration of the indigenous community?

Freddy Nugra: Yes, the project is located in the upper zone of Tumbes at 1,700m above sea level, so the indigenous communities are settled there, there is the largest community, which is Bomboiza, so we do have contact with them, with some people who manage the spiritual part with some guides and we have also made some things or donated equipment to the Cayamas community, for example. Right now, we have a volunteer who is linked to translate the signage in English, Spanish and Shuar. We have also managed to engage in writing academic books such as the new book that is going to come out of the territory, it is the Sangay National Park book in three languages: English, Spanish and Shuar. We have looked for translators from the area obviously linking the University of Azuay, Bosque Medicinal, people who work in the GAD. Also, when we have visitors from Cuenca, in my case, I always look for people from the Shuar culture to do their spiritual work with the people who need to heal when Roman is not there.

María José León: When you interact with the indigenous communities, do they open up easily with the other people who come? Or do they put up a little resistance?

Freddy Nugra: In what sense?

María José León: For example, in terms of practices, because there are times when it is said that they are not easily open to teaching what they traditionally know.

Freddy Nugra: I think that in our sense they have been some, for example, at the inauguration of the Shuar or Molaca hut, there were two great teachers and culture women explaining and teaching everyone who was at this inauguration ceremony of the cabin. So, I haven't seen them basically hiding anything because the moment you enter a spiritual ceremony there you can realize everything, there you learn everything, so let's talk about people of spirituality, maybe with other people who don't practice spirituality they are careful in telling their stories, their knowledge. For example, some knowledge of some fungus, of some plant, they take care of it a bit, but also as a researcher you already know what they are talking about, so there is a kind of balance. If one asks about *Cinchona officinalis*, they are the ones who do not know. They don't know many things that biologists or tourism specialists know, so there is a balance, it's not that they know everything, even though they have lived, they know it, but they don't know what some things are for, because they are in the lower Amazon. They are at 800m above sea level and the highlands are between 1,700 and 3,000m, so it is another tradition, another diversity. We have the Andean culture along the path of the Qhapaq Ñan.

María José León: What are the most evident changes/benefits in Gualaquiza since Bosque Medicinal began?

Freddy Nugra: As I said, there are no studies that reveal what changes there are, but I can appreciate it from my point of view in my territory, an area that is already well known. We are the model example of local development on how to work the land, how to build, how to eat, we are already a focal point for the Gualaquiza area and the surrounding community.

INTERNATIONAL REGULATIONS

Daniela Quintanilla: Do you think it is possible to use Bosque Medicinal as an environmental management model for other Amazonian countries?

Freddy Nugra: Of course, right now we are participating in several projects called the Amazon Basin Treaty Organization, and the focal point in Morona Santiago in Gualaquiza is Bosque

Medicinal. Although it is true that Bosque Medicinal seems to be only about medicine, it is the project's name, but the project has several links and that is what we are doing, expanding to the international territory. We must also remember that UNIDA and all the international projects and consortiums were developed with the people from Bosque Medicinal, some of us are part of Bosque Medicinal and UNIDA consortium. We are also like the example of tourism entrepreneurship projects, tourism, but scientific and that has already drawn the attention not only to the south, to the ministries. Galápagos being a world natural heritage, they also want to apply scientific tourism, although it is true that there is Charles Darwin, but they do not do scientific tourism but only science. There are tourism guides who take tourists, who explain its diversity, its flora and fauna, but scientific tourism is specialized.

María José León: What international strategies can be applied in Ecuador to improve Bosque Medicinal?

Freddy Nugra: Well, since we are new, perhaps we need the territory to be a little broader, it is already too small, let's talk about infrastructure for many people who want to come. Bosque Medicinal is very rustic natural, it does not have technology, luxury rooms, but there will be people who really want to come and be in natural conditions, but with some things, let's not talk about luxury rooms but for example a laboratory. We need a laboratory to collect the samples, classify, investigate, microscopes. We need some dryers to dry the plants, we need some materials to investigate, that would be one of the basic things we need to be able to do science in the jungle or agreements with the universities in the south to be able to review the samples that our collaborators collect.

ENVIRONMENT

Daniela Quintanilla: How is research carried out on the different species that exist in the environment, whether in fauna or flora?

Freddy Nugra: For example, the territory must have a baseline and one of the baselines is to collect all the existing information to talk about conservation. Now we have only sampled mammals with camera traps and it yields a great diversity and some species were not known to science in that territory to the south, this contribution is very good for the country and for Morona Santiago and also internationally. The methodologies they use are the ones that exist,

the standards written by the academy and regulated by the Ministry of the Environment, everything we find or record, we publish in scientific articles, indexed journals or books everything that has been worked on. On the subject of birds, there are many people who do ornithology, their methodologies are standardized, with the methods of binoculars, mist nets, chants and those are basically the methodologies in birds. In plants, we use permanent plots or transects and sample collection and taxonomy, little work is done in plants. We have a guide to medicinal plants that we are writing, possibly it will be published next year, but the publications are very slow, we need people. I think I am the only biologist in the forest, we need more biologists to help us write and revise. In terms of water quality, there are observation methodologies with aquatic insects, fish, and the landscape, and maps of plant cover and land use. We review how much plant cover is being lost with aerial maps.

María José León: But everything that refers to flora and fauna is never taken out of the habitat? Does it occur in the same area?

Freddy Nugra: Yes, they are removed. For example, a group of Mexicans just arrived, they collected samples and took them to museums, we have to collect plants because we don't know what species it is, it's a lot of work. First, the trees there have a width of more than 50 or let's talk in meters, about 2m, round and 30/40m tall, study and take a sample of that plant, can you imagine the work that is? Then you must take a sample of the bark, a sample of the leaves, flowers, fruits, collect, dry, try to identify it and see what species it is. It is a very, very hard job, it is one of the hardest jobs there is, and with rain and with insects and with everything that accompanies us.

GRADUATION PROJECT PRIOR OBTAINING A BACHELOR'S DEGREE IN INTERNATIONAL STUDIES, BILINGUAL MENTION IN FOREIGN TRADE.

TITLE:

“THE ROLE OF INTERNATIONAL COOPERATION IN THE PRESERVATION AND CONSERVATION OF THE ECUADORIAN AMAZON. CASE STUDY BOSQUE MEDICINAL”

INFORMED CONSENT FOR INTERVIEWS

Interview's objective:

- Get to know the Bosque Medicinal Foundation in depth, as well as its creators and participants, so that we can collect the necessary information about their experiences, expectations and criteria that contribute to the development of our titling project.

Commitment:

- All information obtained in the interview will be solely and exclusively used for academic research purposes.

Interview's Acceptance

I, Freddy Nugra Salazar, voluntarily agree to participate in this research, conducted by the students María Daniela Quintanilla Llor and María José León Cevallos. I have been informed of the purpose of the investigation and the purpose of the interview.

I have been informed that the interview will consist of answering semi-open questions, which will be recorded.

Signature: Freddy Nugra Salazar

Cuenca, August 24, 2021

**GRADUATION PROJECT PRIOR OBTAINING A BACHELOR'S DEGREE IN
INTERNATIONAL STUDIES, BILINGUAL MENTION IN FOREIGN TRADE.**

INTERVIEW GUIDE:**Interview's objective:**

- Get to know the Bosque Medicinal Foundation in depth, as well as its creators and participants, so that we can collect the necessary information about their experiences, expectations and criteria that contribute to the development of our titling project.

Interviewee's general information:

- Names and surnames
- Age
- Gender
- Profession

QUESTIONARY

BOSQUE MEDICINAL

- What is Bosque's Medicinal main goal?
- How was the proposal or the idea of establishing Bosque Medicinal born? What prompted you? How was the experience of carrying out the project?
- What environmental problems does Bosque Medicinal solve?
- Do you have links with international organizations? How is the relationship? What future plans do you have for linking with other organizations, universities, international projects?

CANTONAL PERSPECTIVE

- How did the Gualaquiza community react to the project? Did they accept easily or was there a bit of resistance?
- Do you maintain contact with the indigenous community? Do Bosque Medicinal projects/practices respond to ancestral practices? Do you count on the presence and collaboration of the indigenous community?

LEGAL AREA

- How was the agreement between the Czech Republic and Ecuador established to achieve cooperation between the two countries? Is there any document that supports the project?
- What institution regulates Bosque Medicinal?

FINANCE

- How is Bosque Medicinal maintained financially? Does the Municipal GAD of Gualaquiza or the state help the project in any financial way?

Name: Ronal Chaca Espinoza

Age: 38 years

Profession: Professor at the University of Azuay at the school of tourism.

Date: September 21, 2021

Daniela Quintanilla: What is Bosque's Medicinal main goal?

Ronal Chaca: The main goal is the conservation of tropical forests as a tool for the regeneration of the territory and from this, try to improve the living conditions, not only of the population but also of the ecosystem that is around Bosque Medicinal.

María José León: How was the proposal or the idea of establishing Bosque Medicinal born? What prompted you? How was the experience of carrying out the project?

Ronal Chaca: I think that first with Freddy Nugra and Roman Collar we saw an element more than an element, sorry, a scenario where a new conservation model can be promoted, although it is true, the three of us had different points of view regarding the conservation, permaculture and the tourism part, but we had a clear objective, which in this case was to generate a new conservation model so that it can even be applied in other parts of the country.

Daniela Quintanilla: What environmental problems does Bosque Medicinal solve?

Ronal: Well, I think that first a change of awareness and the issue of coexistence with regard to the relationship between human beings and nature, I think that is the fundamental

thing since Ecuador, despite having more than 18% of territory that is considered protected, there are no initiatives that can come close to that reality, so above all what we seek is that people are the ones who first seek to conserve and not wait for the Ecuadorian state to do so, which we know is not good enough in terms of conservation issues, but first conservation must be supported by the local population itself or even if there is no local population, then by external actors, so they can see in these territories an alternative to generate a change of consciousness and also of coexistence between what is nature and the human being.

CANTONAL PERSPECTIVE

María José León: Do you maintain contact with the indigenous community? Do Bosque Medicinal projects/practices respond to ancestral practices? Do you count on the presence and collaboration of the indigenous community?

Ronal Chaca: Well, I think that has always been a somewhat controversial issue because working with the Shuar is not that easy and sometimes, I have always been questioned, Ronal, where is the community? And it is as if we were the big landowners and that we already had the money for us to develop all these issues that are binding with the community, which entails a process, however, what we have done has been to have contacts with community leaders who are linked to ancestral medicine or small tourism entrepreneurs so that they can see a little how the Bosque Medicinal model is managed and that they can also generate their own tourism and conservation initiatives in their communities. Working with the communities is not easy, however, what we have done has been to create strategic alliances with community leaders and especially with young people and also with women, right? That has also been fundamental and through these approaches they can see how through the conservation of the forest they can generate tourist flows and also generate their own models of local development.

María José León: Do the leaders you work with help you easily or put-up resistance?

Ronal Chaca: No, obviously the Shuar is a very discreet person, very prudent and distrustful in the good sense of the word, they don't easily trust anyone, much less if they see foreigners, I'm not saying all of them, but obviously they associate them with gringos.

What we have done in this case with Freddy because he is from Gualaquiza and obviously he knows all the people and what we do is that with those people that we can really have the confidence to be able to establish agreements, we do it, and in this case there is Freddy Shiriap, Adrian Shiriap, but they always collaborate with Bosque when it comes to Shuar language, ancestral practices, but not the entire community is ready for it, so that is what the Bosque is, it tries to generate these ecological communities, that is to say, not the entire community should necessarily be linked, especially in conservation and tourism issues, because there are other structural problems such as the issue of alcoholism, gender equity problems, intra-family problems. So it is not that conservation and tourism are going to directly help the communities, what we are looking for is that through education the children can see that the conservation of their territory, biodiversity and the rescue of their traditions in the future can give them greater alternatives to generate tourism ventures, but I am honest, with people who are a little older it is very difficult to change that perspective that they have regarding their territory, so it has been a tough process but at least a small change has already been generated, at least with young leaders.

LEGAL AREA

Daniela Quintanilla: How was the agreement between the Czech Republic and Ecuador established to achieve cooperation between the two countries? Is there any document that supports the project?

Ronal Chaca: Yes, I remember in 2018 we established the first contact with Professor Miroslav, he is director of the culture department at Mendel University and now he is the UNIDA's project director. An agreement was signed with this university where it is indicated the parameters to work with the UNIDA project, which is an international conglomerate that unites several latin american universities in search of the conservation of biodiversity, especially in the Amazon. So, in 2018 we already have an agreement with Mendel University, also with Masaryk University, and additionally we are part of this consortium called UNIDA, so that is a bit of the bonding issue we have. We do have documents signed with these institutions.

María José León: What institution regulates Bosque Medicinal?

Ronal: Let's see, Bosque Medicinal is within a buffer zone, that is, it is not within the primary forest, however it is an area where farms are located or it has been developed for livestock issues. In this case, Bosque Medicinal is part of the Bosque Medicinal foundation, but it also works jointly with the Forest Ink foundation, so Forest Ink and Bosque Medicinal are the institutions that regulate the concept of Bosque.

María José León: So there is no state institution that regulates you?

Ronal: No, because more than regulating in this case what we have done are approaches with the municipal GAD of Gualaquiza, even these areas have been a good element to help protect against poachers or also so that people do not cut down the forests, then the municipal government has given us many facilities so that we can also integrate conservation issues. Two months ago the same government helped open a new road, so they are seeing that apart from conservation, Bosque is also a pillar for poaching and illegal felling regulation, which still tends to occur in these spaces.

FINANCE

Daniela Quintanilla: How is Bosque Medicinal maintained financially? Does the Municipal GAD of Gualaquiza or the state help the project in any financial way?

Ronal Chaca: No, no, the truth is that what they have done is provide the facilities so that the Bosque Medicinal Foundation can be there as a conservation model, and believe it or not, it is more than enough because working with the public sector sometimes hinders these initiatives, because of its very complexity of operation. And in this case, most of the funds come from Europe, in this case from the Czech Republic through the Forest Ink foundation, which is like saying, Bosque's Medicinal older brother. At the level of Ecuador, very little has been given to the issue of growth due to the issue of economic resources, however, we have projected from scientific tourism programs with Mendel's universities. For example, a month ago, 10 czech students came to work on scientific tourism research, and they, in a certain way, because of their economic remuneration, help strengthen the financial concept as well as volunteering aspect. And apart from that, at the level of the Czech Republic and a little bit of Germany, everything that is economic compensation for conservation, that is really the strong point of Bosque Medicinal.

Daniela Quintanilla: When it comes to volunteering, how can one be linked?

Ronal Chaca: Well, we have lines of research, for example, permaculture issues, study of spices of both flora and fauna, deforestation of medicinal plants, photography, mental health and psychology, art, between 7 or 8 lines of research, so From this, the student who is interested in Bosque Medicinal signs up for one of these lines and when he comes to Bosque he must develop a practical work, actually what we are targeting the most is scientific tourism to obtain information to generate legitimacy before other projects.

GRADUATION PROJECT PRIOR OBTAINING A BACHELOR'S DEGREE IN INTERNATIONAL STUDIES, BILINGUAL MENTION IN FOREIGN TRADE.

INTERVIEW GUIDE:

Interview's objective:

- Get to know the Bosque Medicinal Foundation in depth, as well as its creators and participants, so that we can collect the necessary information about their experiences, expectations and criteria that contribute to the development of our titling project.

Interviewee's general information:

- Names and surnames
- Age
- Gender
- Profession

QUESTIONARY

BOSQUE MEDICINAL

- How has the experience of carrying out the project been?
- Do you have links with international organizations? How is the relationship? What future plans do you have for linking with other organizations, universities, international projects?

CANTONAL PERSPECTIVE

- How did the Gualaquiza community react to the project? Did they accept easily or was there a little resistance?
- What are the most evident changes/benefits in Gualaquiza since the medicinal forest began?

INTERNATIONAL REGULATIONS

- Do you think it is possible to use Bosque Medicinal as an environmental management model for other Amazonian countries? Are you thinking about expanding?
- What international strategies can be applied in Ecuador to improve Bosque Medicinal?
- Do you think that cooperation in environmental management has given results over the years?

TOURISM

- How is ecotourism implemented within the project?

Name: Ronal Chaca Espinoza

Age: 38 years

Profession: Professor at the University of Azuay at the school of tourism.

Date: September 21, 2021

Daniela Quintanilla: How has the experience of carrying out the project been?

Ronal Chaca: This experience began four years ago when we met with Freddy Nugra (Biologist) and Roman Collar (Czech Republic), and precisely by coincidence we were able to share that forest space with our students and from them we generated this cooperation. In 2018 the Bosque Medicinal Foundation begins. And how have the experiences been? Well, I think that in general they are positive, although they have been a bit complex because capturing a Czech market, I think it is the first scenario in the country where we work with these Czech organizations, as a forest we have the Bosque Medicinal foundation that is established in Ecuador, but we also work with Forest Ink, which is this Czech organization, so between the two organizations we work together on the issue of collaboration. What has been interesting? Knowing a market that was possibly not being

exploited at the national level, unfortunately many of the markets are more linked to the United States, possibly Canada, Spain, but with the Czech Republic there has been practically no such initiative and with Bosque we have generated cooperation agreements first in research with two Universities that are Mendel University and Masaryk University located in Brno, Czech Republic. Secondly, we have cooperation agreements with the UNIDA consortium, which is an international consortium that brings together almost 15 universities, including the University of Azuay, but we are more closely related to these Czech universities. Third, we have been able to understand a little about this Czech market and what they are looking for in our country, in this case the conservation of the tropical forest has been fundamental for them, basically they seek these spaces first to generate volunteers, but we are articulating scientific tourism and that this has helped us to generate greater flows of visitors in the case of the Czech Republic. Last point, it has helped us to understand a lot about these issues of international cooperation and how important they are, why do I say this? Because two years ago, let's be honest, the Ecuadorian is not ready to help with these cooperation issues, we are quite romantic in relation to the conservation issue because when the fire happened in Brazil I remember we all went out to the streets to get Bolsonaro out so that our jungle does not end, when Morona Santiago is less than 3 hours away and it is one of the provinces that has had the greatest impact with the expansion of the agricultural-livestock frontier with the issue of forest felling and not to mention the presence of Chinese mining companies, but ,when we talk to an Ecuadorian, it is very difficult for them to want to help conserve and that has also been good because that has helped us, because if we don't have support at the level of Ecuador, then we look for support elsewhere, and that support has helped us greatly strengthen this issue of international cooperation. So the interesting thing is to see how conservation, if it can be an example of innovation, can be an example with which agreements can be generated with other countries.

The most satisfying experience has been being able to generate these territorial networks between the Czech Republic and Ecuador and continue working on these cooperation agreements, and the most beautiful thing was that 4 years ago Fredy Nugra, Román Collar and myself were there, and now we have Ana María in environmental issues, it is incredible, we never thought that Ana María could be integrated into the team and Diana García is also involved in international cooperation issues and forming this multidisciplinary team. I think that at the national level it is one of the strongest teams because we have the biology part,

the international cooperation part with Román, Erick from the Czech Republic, the scientific tourism area with me, the environmental issue with Ana María and now the issue of cooperation with Diana García, because I believe that even for any type of debate on the issue of conservation, it would be very difficult for someone or another group to beat us. Even at a political level and I think that the fact that more people are joining means that the project is advancing and not to mention that we also indirectly have the support of two psychologists, Juan Sebastián Herrera and Fernanda Coello, who we are working with on the issue of mental health, then, you can imagine, I think it is a multidisciplinary group and I think that has been the success factor of Bosque Medicinal, the different but objective common visions.

María José León: Do you have links with international organizations? How is the relationship? What future plans do you have for linking with other organizations, universities, international projects?

Ronal Chaca: Well here comes the issue, I think that the context of trust, believe it or not, here Román Kollar and Randim have a fundamental role; Román Kollar, what would be the word to define Román? Could be Modern Shaman, I don't know, Román is a master when it comes to indigenous ancestral wisdom, especially because he spent 12 or 15 years working with the Shuar and here, he comes the interesting thing about communication, Román speaks English, Czech, Spanish and well, when he travels to Europe he has the opportunity to present the project to these universities. I remember that at the end of 2018, I had the opportunity to have contact with Professor Miroslav Horak, who had previously met Román in the Czech Republic and, well, from there, Professor Miroslav saw a potential here in Ecuador to be able to work on these topics, especially on issues related to the recovery of medicinal plants, Professor Miroslav is a specialist in everything that is related to Ancestral Medicine, he is an Anthropologist, sociologist, a number of titles related to this issue. As of the end of 2018, the opportunity was given to sign an agreement with Mendel University and additionally an agreement with Masaryk University in which it is represented by Professor Tella and from that we have published three books, UNIDA 1, UNIDA 2 and at the end of September we are going to release UNIDA 3.

In particular, it has helped me a lot because research is not easy in Ecuador, that is, I speak personally, especially when one is in a process of understanding a lot of methodologies, of

understanding problem processes, understanding processes of instruments or techniques, and working with these multidisciplinary teams because it is incredible how one begins to like research and especially with Professor Miroslav we have focused on the issue of the benefits of, for example, guayusa, which is a very important plant at the level of the Shuar people, and what we are looking for with these investigations is that they not only be reflected in a book but that the first impact is to generate new products based on guayusa and that at some point they can be exported to the Czech Republic.

As a curiosity, there is already a company that is dedicated to the guayusa trade, but they extract the raw lie from the puyo, now we want this company to reach Gualaquiza or Morona Santiago, and from there we can generate this Guayusa processing, then I think that it is fundamental here because what the impact of a research represents changes a lot for me, I remember Professor Miroslav telling me, well, you first worry about the impact that we can generate through entrepreneurship, that is, the research, not only that It remains for a high-impact publication, no, no, the first impact has to be for the community and also applied to our ventures. As a curiosity, we decided in 2020 to bet on new ventures because all these investigations that we have done we had a large amount of information and we decided to also bet on a venture in scientific tourism and well, long story short, we won Ikiam Anglers by the Ministry of Tourism in the year 2020 as the best project at the national level, so what we are generating through this cooperation with the universities is to promote new tourism ventures based on nature. Within the lines that we want to strengthen is that of nature in mindfulness that the only countries that have done it so far have been Chile and Bosque Medicinal.

We also want to generate these projects based on forest bathing, which is a technique that was born in Japan and that we are now implementing in Bosque Medicinal and everything that is related to mental health, innovation, entrepreneurship, nature and research, that is what we are now projecting strongly with this concept of nature. This would be the main contribution in the research that we are doing, publications that not only remain in books, but that generate an impact in the territory and that also serve other people for entrepreneurship and such.

CANTONAL PERSPECTIVE

Daniela Quintanilla: How did the Gualaquiza community react to the project? Did they accept easily or was there a little resistance?

Ronal Chaca: I think that at the beginning we have always generated linkage projects with Gualaquiza but sometimes you have the impression that, for example, they see them as Czechs and think “gringos”, so obviously sometimes they think that because they are gringos Bosque Medicinal is full of money and that's a lie, so sometimes you get the impression that because Czechs arrive or gringos arrive as they call them, Bosque Medicinal practically doesn't need collaboration and sometimes I feel that the authorities have a certain type of, I mean It's not that they don't support us, they do, but they could possibly support more, but sometimes they feel that because we are a gringo organization we have money, and sometimes I think that this information further undermines cooperation between the local government, and in this case the Czechs. Now, we have always wondered with Freddy, what will happen if the Czechs leave? Well, I think that we are also thinking of a plan for the future, a plan B, a plan C, but we are already generating, for example, at the level of Ecuador, this strengthening from the local level, and well, many people have joined, from different areas, which is strengthening much more that local vision.

Now with the government, well, there has been support, I'm not saying there hasn't, but I think there could be much more support because, for example, this week approximately 12 Czechs arrived, well, it was incredible, the Ministry of Tourism arrived, they took them to Ingapirca, they gave them souvenirs, they gave them promotional campaigns, etc. Nevertheless, when they arrived in Gualaquiza it's like, well, they came, when they don't know that Gualaquiza is probably being known in Europe through that visit because all europeans are saying, well let's go to Gualaquiza. First they get to know Gualaquiza and then Ecuador, and I think that they are still not clear that when this type of visitor arrives they help these destinations to be promoted internationally, but well, I think it is a process that we are generating little by little, I think that the authorities lack initiative to take advantage of that visit that they have because every 3 or 4 months Czech volunteers arrive.

María José León: What are the most evident changes/benefits in Gualaquiza since the medicinal forest began?

Ronal Chaca: Well, first of all, I think that Gualaquiza has no more than 10,000 inhabitants, it really is a small town, however, within the context of the Ecuadorian Amazon in the south, it is practically being recognized for these connection and research issues both at a national and international level, now everyone is asking us where Gualaquiza is and where Bosque Medicinal is, and obviously when both national and foreign volunteers arrive, it is not that they simply arrive at the forest because we usually go to the market and make purchases, we know local products, they boost the local economy or sometimes when they come they already have to use accommodation, food, transportation, because in one way or another we help boost the economy of Gualaquiza. Second, we make them integrate into the local reality of Gualaquiza, what many of the volunteers are looking for is to know that local reality and that way that people have to live daily in Gualaquiza and especially with that natural environment, so for the moment we are generating approaches with indigenous communities so that they can generate their own micro-enterprises, especially with guayusa. There have already been some approaches, rescuing the rituals, one of which we are trying to rescue is the guayusa ritual, which is practically disappearing. It has also been integrated with shamans from the community to rescue knowledge about all the use of master or traditional plants, so we are more linked in that area.

INTERNATIONAL REGULATIONS

Daniela Quintanilla: Do you think it is possible to use Bosque Medicinal as an environmental management model for other Amazonian countries? Are you thinking about expanding?

Ronal Chaca: In other Amazonian countries, that is, Brazil, Peru, Colombia, let's see, here comes the interesting part, I think that is advantage of Bosque Medicinal, when I spoke to Professor Miroslav, with Román and Randim; Randim, for example, is a very important businessman from the Czech Republic and it was like talking to Álvaro Noboa more or less, however, one of the issues that they saw in Brazil was first the distance, if you get to the Brazilian Amazon, you practically enter and you don't get out, it's that simple, then the issue of distance may be an option, but how much are we going to integrate into the Brazilian Amazon? With Colombia, security, the furthest from the Colombian jungle to the capital, has to be a minimum of 8 hours of travel and second due to the issue of insecurity that is still maintained by subversive groups, although that area has already been demilitarized there are small paramilitary groups that are still in the Colombian jungle, so

in terms of security and in the case of Peru, the excessive commercialization of ancestral knowledge, there are even ayahuasca tours. So, in the long run they are spaces or are factors that have precisely moved away from this market while In Ecuador there are opportunities such as: First, we changed the route, they stayed in Ayampe, which they love, they stayed about 4 days, then they went to Cuenca, they stayed 4 days and then in less than 3 hours they were already in the Jungle, so that concept of territoriality, that concept of space geographical is what has attracted most of the attention. Perhaps in the future if conditions improve, perhaps I believe that Colombia would possibly be the most propitious scenario, if at some point Bosque Medicinal expands, they are looking for a country for it, but for the moment they have decided to stay in Ecuador.

María José León: What international strategies can be applied in Ecuador to improve Bosque Medicinal?

Ronal Chaca: By the way, I forgot, I still don't know if we can call ourselves a model because with the pandemic I think the interesting thing about Bosque is that it was not a model, what do I mean by this, that we were able to easily adapt to the pandemic, that is to say, our first objective is that of conservation, from conservation other lines of strengthening are being exercised such as research, education, mental health and scientific tourism. However, fact that the Czechs did not come did not mean that we were not working during that period of time, for example with publications, with research, even as we are generating afforestation programs with guayusa and all that material we sent precisely to the Czech Republic, that is, if we had only waited for their tourism, the project would have practically died, but the interesting thing is that we focused on conservation and these different lines of research that emerged from them. That is why during the pandemic we continued with these regenerative processes, which is very interesting for you to analyze, and well, that was the best promotion we had during the pandemic, and that is why the boys we have now arrived, almost 12 or 13 Czechs who are now in Bosque Medicinal.

Regarding the improvement of strategies, I believe that now we must bet on scientific tourism, we have practically not invested a single dollar in promotion issues and what the Czechs always tell us, well, if you are really conserving, show it, well, that's the great challenge, and for example we are very careful to talk about a sustainable tourism development model because in the long run I don't think it exists. Show me that it is

sustainable and those are always the questions that they ask us from there, show us that you are really doing something and I think that has been fundamental. We, for example, need a good camera for good content and that's it, well, how much does it cost us?, well, I spent on the camera and began to study a lot about a good editing program, videos from 30 seconds to one minute and that was sent to universities and I think that is fundamental, rather than thinking about promotion. I think that we are promoting more research as a tool for disseminating what Bosque Medicinal represents and this is obviously reaching universities, organizations, now volunteers from Germany and the Netherlands arrived, this type of volunteers had not arrived before and now it is precisely because of the dissemination of these issues.

Second, I think it's very important to create strategic alliances, but I think we shouldn't just wait for the state either. Sometimes, I'm honest, I don't know how much the ambassadors can help, and even more so if they don't know the reality of conservation, or even more so if they manage a political discourse that says that we should only bet on sustainability in conservation. When I listen to that speech, they don't tell me beyond a structured and armed political speech to look good, however I think that if we are betting on other links that precisely help us on the issue of promotion, such as the Czech television station in Prague. Among the objectives that we already have set, is that in February this Czech television station arrives with Professor Miroslav, a Czech television station has never arrived in the country, which is like talking about one of the most important television stations in all of Central Europe, and what we are going to do is a documentary about the entire journey from Central Europe to Ecuador, and then to the Ecuadorian Amazon, this came thanks to the contacts we have with universities and also businessmen, not ambassadors. So, I think that is what is interesting about the project, that we are also aiming at people who have money but who want to conserve because sometimes that has also been a controversial issue, that if we do not invest in conservation, only words will not help, and let's be honest, here to invest in conservation very few people take risks so we are also looking for strong entrepreneurs like Randim who are committed to conservation and put their money.

So, that concept that the poor are good and the rich are bad in terms of conservation does not exist either because here in Ecuador, even with people who have money, they do not want to do it, so we are looking for other ways of approaching the issue of investors and well, thanks to one of these investors like Randim and Miroslav, this Czech television

station is going to make the documentary and for us that is going to be the best promotion we have been able to do because practically the project is going to be spread and we are going to help Ecuador in terms of tourism because this is going to spread the presence of the coast, Cuenca and obviously the Amazon. Even the Ministry of Tourism was very happy about it because they could not have made those contacts and they are precisely going to collaborate with them in the month of February with all the logistics on this issue and well, that's where we are. We are looking for characters who have some relevance within conservation issues, possibly for the month of January one of the most important Czech fishermen from central Europe will come. What we are looking for are those people, we are not going to look for film artists nor are we going to look for models, no, no, no, we are looking for people who are important in conservation issues and one of them is, for example, Freddy, thanks to Clau, who is another Czech woman who has a lot to do with the guayusa exportation, so those connections that have been made thanks to Bosque are incredible.

Daniela Quintanilla: Do you think that cooperation in environmental management has given results over the years?

Ronal Chaca: Well, you know that within international cooperation, in particular, I learned with Bosque, but I think that surely there will be much more to be strengthened and that is why Diana García joined because she works a lot on these issues with other countries and also to obtain economic resources, which for example Bosque Medicinal I feel is already a project that can easily compete with other projects not only at the national level, but also at the international level, and there are funds at the international level that can be fairly participated, but sometimes due to ignorance or sometimes due to the fact that there is no such culture of being able to participate in the projects, these resources are lost, right? So now, we are also betting a lot to obtain economic resources through these international cooperation agreements, just the previous week Diana García allowed me to be at a meeting where a large amount of money was given for projects that are linked to conservation, especially in the Ecuadorian Amazon and I really didn't know that there were these types of contests, so I feel that there is still a lack of knowledge at the national level regarding these projects, but let's also be honest, I don't know what other projects could also be offered, because there must be certain guidelines, clear objectives, meet goals and results, and sometimes the Ecuadorian does not like that very much. But I think that now we are

learning a lot about these issues and I think that we are also betting on international cooperation, but above all to obtain economic resources and also to generate legitimacy.

I can say that the area of Runahurco thanks to Bosque Medicinal is possibly going to be upgraded to a national park and that was thanks to Bosque, and that also helped to stop the presence of Chinese mining companies that were practically taking over the entire area because of the metals that are found there, then Bosque has also served as a form of political pressure because on the one hand we say, we do have to conserve nature but we do nothing to generate innovative projects, so I think it's also a form of strong social criticism because these environmentalists sometimes come out and say we have to conserve this but they don't present projects or proposals either. So it's also about limiting that fallacy of using conservation, sustainability, resource conservation and not presenting projects, that's why the chinese laugh at us, because they obviously reach the communities, pay the Shuar and obviously already have the support but it is not that strong projects are presented at the national level and in that case I believe that international cooperation is going to help generate legitimacy and above all it helps to generate the strengthening of local development.

TOURISM

María José León: How is ecotourism implemented within the project?

Ronal Chaca: Well then, here comes the interesting part, in particular, we are also very critical of that, because for example, topics such as ecotourism, sustainable tourism, rural tourism, sometimes I feel that they are commercial labels that are put on rural spaces or natural spaces, that on the contrary we are now betting on spiritual tourism, that even in September we are going to publish this article with Professor Miroslav about how people can find themselves within natural resources. Within tourism we also work with mindfulness, which is the concentration with natural resources and this from the area of clinical psychology and also forest baths that are used from the Japanese technique that emerged in the years 1980-1982 and which is about how the person can relate to nature through the senses, so we are experiencing these new ways of understanding nature and

moving away a little from these classic types of tourism that in the long run do not tell us anything and that are always the same.

And here we are very careful with the sacred concept, there in the forest we have 4 waterfalls of which two are sacred and there we are generating that connection and we are experimenting with new audiences. Before the pandemic, we worked with people who had addiction problems and it was very interesting because there were representatives of the Ministry of Public Health, there were shamans and there were clinical psychologists, and from this an alternative therapy was generated to reduce these levels of addiction in people; and we also worked with psychologists on how nature helps improve mental health and in this case one of the results we were able to obtain was that the levels of addiction, anxiety, depression and stress decreased between 30 to 40%. So, what better way than to know that nature helps us improve mental health scientifically speaking, separating us from those commercial labels of sustainability that in the end do not give us added value. We are experimenting with these ways of understanding nature and tourism, now what label do we put on it? Well, we are going to see that at the end, but we are working from areas of clinical psychology, conservation, research and obviously scientific tourism, which is the greatest motivation for the young people who come to our country.

TRABAJO DE GRADUACIÓN PREVIO A LA OBTENCIÓN DE TÍTULO DE LICENCIADOS/AS EN
ESTUDIOS INTERNACIONALES CON MENCIÓN BILINGÜE AL COMERCIO EXTERIOR

TÍTULO:

"EL ROL DE LA COOPERACIÓN INTERNACIONAL EN LA PRESERVACIÓN Y CONSERVACIÓN DE LA
AMAZONÍA. CASO DE ESTUDIO BOSQUE MEDICINAL"

CONSENTIMIENTO INFORMADO PARA ENTREVISTAS

Objetivo de la entrevista:

- Conocer a profundidad la Fundación Bosque Medicinal, así como a sus creadores y participantes, de tal manera que podamos recolectar la información necesaria acerca de sus experiencias, expectativas y criterios que aporten al desarrollo de nuestro trabajo de titulación.

Compromiso:

- Toda información obtenida en la entrevista será única y exclusivamente utilizada para fines de investigación académica.

Aceptación de la entrevista:

Yo, Ronal Chaca Espinoza, acepto participar voluntariamente en esta investigación, conducida por las estudiantes María Daniela Quintanilla Llor y María José León Cevallos. He sido informado (a) del propósito de la investigación y fines de la entrevista.

Se me ha puesto en conocimiento que la entrevista consistirá en responder preguntas semiabiertas, la cual será grabada.

Firma:  RONAL EDISON
CHACA
ESPINOZA

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Cuenca, 19 agosto de 2021

Bibliography

- Abad, C. A. (2018, August 4). *Scielo*. Retrieved November 24, 2020, from <http://scielo.sld.cu/pdf/uh/n287/0253-9276-uh-287-363.pdf>
- AECID. (2021). *AECID*. Retrieved April 29, 2021, from <https://www.aecid.es/ES/la-aecid>
- Alto Comisionado de las Naciones Unidas para los Derechos Humanos. (2007). *Organización de las Naciones Unidas*. Retrieved February 18, 2021, from https://www.un.org/spanish/waterforlifedecade/pdf/human_right_to_water_and_sanitation_milestones_spa.pdf
- Arcos, C. D. (2019). *UASB*. Retrieved from UASB: <https://repositorio.uasb.edu.ec/bitstream/10644/6649/4/T2876-MCCSD-Ordo%C3%B1ez-Amazonia.pdf>
- Asamblea General de las Naciones Unidas. (1999). *Iagua*. Retrieved February 18, 2021, from <https://www.iagua.es/2011/06/hitos-en-la-evolucion-del-derecho-humano-al-agua-y-al-saneamiento>
- Asamblea General de las Naciones Unidas. (2010, July). *Iagua*. Retrieved February 18, 2021, from <https://www.iagua.es/noticias/onu/13/12/09/el-derecho-humano-al-agua-41658>
- Barbier, E. (2010, October 5). *Green Growth Knowledge*. Retrieved November 22, 2020, from [https://www.greengrowthknowledge.org/sites/default/files/Barbier,%20Edward%20Poverty,%20development%20and%20environment%20\(2010\).pdf](https://www.greengrowthknowledge.org/sites/default/files/Barbier,%20Edward%20Poverty,%20development%20and%20environment%20(2010).pdf)
- Bárcena, A. (2018, September 26). *Comisión Económica para América Latina y el Caribe*. Retrieved February 20, 2021, from <https://www.cepal.org/es/articulos/2018-acuerdo-escazu-un-hito-ambiental-america-latina-caribe>
- Barrett, S. (2016, September 29). *PNAS*. Retrieved December 5, 2020, from <https://www.pnas.org/content/pnas/113/51/14515.full.pdf>
- Bellomo, S. T. (2019). Modulaciones del antropocentrismo y el biocentrismo: orientaciones filosóficas para la educación ambiental. *Revista Latinoamericana de Filosofía de la Educación*, 6, 80. Retrieved November 23, 2020, from <https://dialnet.unirioja.es/servlet/articulo?codigo=7004482>

- Benitez, L. (2020). *HolaLuz*. Retrieved February 10, 2021, from <https://blog.holaluz.com/informe-brundtland-origen-ods-agenda-2030/>
- Berraondo, M. (2000). *FLACSO ANDES*. Recuperado el 1 de marzo de 2021, de <https://biblio.flacsoandes.edu.ec/libros/111871-opac>
- Bezerra, S. (2011). *Riubu*. Retrieved November 23, 2020, from <https://riubu.ubu.es/handle/10259.1/123>
- Blakemore, E. (2019, May 21). *National Geographic*. Retrieved November 21, 2020, from <https://www.nationalgeographic.es/historia/2019/05/el-desastre-de-chernobil-que-ocurrio-y-sus-consecuencias-largo-plazo#:~:text=El%2025%20y%20el%2026,historia%20de%20la%20energ%C3%ADa%20nuclear.>
- Bosque Medicinal. (2018, February 14). Retrieved august 23, 2021
- Bosque Medicinal. (2020, november 24). *Bosque Medicinal*. Retrieved may 7, 2021, from <https://www.bosquemedicinal.com/post/bosque-medicinal-un-mundo-por-descubrir>
- Bosque Medicinal. (2021). *Partners*. Retrieved may 8, 2021, from <https://www.bosquemedicinal.com/partners>
- Bueno, M. d. (2011). *IRI*. Retrieved from https://www.iri.edu.ar/publicaciones_iri/anuario/cd_anuario_2011/Mayd/La%20cuesti%F3n%20ambiental%20y%20el%20desarrollo%20desde.pdf
- Bustos, C. (2009, January 27). *Biblat*. Retrieved February 5, 2021, from <https://biblat.unam.mx/es/revista/economia-merida/articulo/la-problematica-de-los-desechos-solidos>
- Calvas, G. (n.d.). *Secretaría Técnica de Planificación*. Retrieved January 30, 2021, from <https://www.planificacion.gob.ec/ecuador-posiciona-lineamientos-de-cooperacion-sur-sur-frente-a-retos-del-desarrollo-regional/>
- Campbell, E. (2021). *CEPAL*. Retrieved July 12, 2021, from <https://www.cepal.org/es/comunicados/autoridades-expertas-destacan-importancia-acuerdo-escazu-garantizar-derechos-humanos>

- Casas, C. A. (2019). El bioma amazónico y el Acuerdo de París: cooperación y gobernanza. *Revista de estudios brasileños*, 6(11), 155-167. Retrieved February 24, 2021, from <https://revistas.usal.es/index.php/2386-4540/article/view/reb2019611155167>
- Castro, G. (2000, abril 24). La crisis ambiental y las tareas de la historia en América Latina. *Papeles de Población*, 47. Retrieved November 21, 2020, from <https://www.redalyc.org/articulo.oa?id=11202403>
- CEPAL. (2013, June). *CEPAL*. Retrieved from https://www.cepal.org/sites/default/files/news/files/amazonia_posible_y_sostenible.pdf
- Céspedes, X. N. (2021, march 5). *Cooperativas de las Américas*. Retrieved may 5, 2021, from <https://www.aciamericas.coop/Mujeres-por-una-recuperacion-inclusiva-y-sostenible>
- Chaca, R. (2021, august 24). (M. J. León, & D. Quintanilla, Interviewers) Cuenca, Azuay, Ecuador. Retrieved august 24, 2021
- CITES. (2021, February). *CITES*. Retrieved February 15, 2021, from <https://cites.org/esp/disc/what.php>
- Coalición Regional. (2018, October 24). *Coalición Regional*. Retrieved February 20, 2021, from <https://www.coalicionregional.net/acuerdo-de-escazu-debe-proteger-a-pueblos-indigenas-y-defensores-del-ambiente/>
- CODENPE. (2012). *Consejo Nacional para la Igualdad de Pueblos y Nacionalidades*. Retrieved March 1, 2021, from <http://www.pueblosynacionalidades.gob.ec/wp-content/uploads/2019/04/dialogo/legislacion.pdf>
- COICA. (n.d.). *COICA*. Retrieved from <https://coica.org.ec/que-es-la-coica/>
- Colina, J. V. (2000). *Dialnet*. Retrieved November 22, 2020, from <https://dokumen.site/download/dialnet-tiposdecontaminacionsusfuentesyefectosenelestuario-206316-a5b39ef9c5850a>
- Comisión Económica para América Latina y el Caribe. (2002, August 26). *CEPAL*. Retrieved February 10, 2021, from <https://www.cepal.org/cgi-bin/getProd.asp?xml=/prensa/noticias/comunicados/0/10900/P10900.xml&xsl=/prensa/tpl/p6f.xsl&base=/prensa/tpl/top-bottom.xsl>

- Comisión Económica para América Latina y el Caribe. (2014). *Comisión Económica para América Latina y el Caribe*. Recuperado el 1 de marzo de 2021, de https://repositorio.cepal.org/bitstream/handle/11362/37222/S1420521_es.pdf
- Comisión Económica para América Latina y el Caribe. (2015). *Comisión Económica para América Latina y el Caribe*. Retrieved February 20, 2021, from https://www.cepal.org/sites/default/files/infographic/files/principio_10.pdf
- Comisión Económica para América Latina y el Caribe. (2018, October). Retrieved March 11, 2021, from <https://www.cepal.org/es/publicaciones/44121-nuevos-desafios-paradigmas-perspectivas-la-cooperacion-internacional-desarrollo>
- Comisión Económica para América Latina y el Caribe. (2018). *Comisión Económica para América Latina y el Caribe*. Retrieved February 20, 2021, from https://repositorio.cepal.org/bitstream/handle/11362/43595/1/S1800429_es.pdf
- Comisión Económica para América Latina y el Caribe. (2020, December 10). *Comisión Económica para América Latina y el Caribe*. Retrieved February 20, 2021, from <https://www.cepal.org/es/comunicados/autoridades-expertas-destacan-importancia-acuerdo-escazu-garantizar-derechos-humanos>
- Comité de Derechos Económicos, Sociales y Culturales de las Naciones Unidas. (2003, January 20). *Alto Comisionado de las Naciones Unidas para los Refugiados*. Retrieved February 18, 2021, from <https://www.acnur.org/fileadmin/Documentos/BDL/2012/8789.pdf>
- Conferencia de las Naciones Unidas sobre el Agua. (1977). *Organización de las Naciones Unidas*. Retrieved February 18, 2021, from https://www.un.org/spanish/waterforlifedecade/pdf/human_right_to_water_and_sanitation_milestones_spa.pdf
- Conferencia Internacional de las Naciones Unidas sobre la Población y el Desarrollo. (1994). *Organización de las Naciones Unidas*. Retrieved February 18, 2021, from https://www.un.org/en/development/desa/population/publications/ICPD_programme_of_action_es.pdf

- Conferencia Internacional sobre Agua y Desarrollo Sostenible. (1992). *Organización Meteorológica Mundial*. Retrieved February 18, 2021, from <https://www.wmo.int/pages/prog/hwrrp/documents/espanol/icwedecs.html#p4>
- Consejo de Derechos Humanos. (2006). *Oficina del Alto Comisionado de las Naciones Unidas para*. Retrieved February 18, 2021, from https://www2.ohchr.org/english/issues/water/docs/HRC_decision2-104_sp.pdf
- Consejo de Derechos Humanos. (2008, March). *Oficina del Alto Comisionado para los Derechos Humanos*. Retrieved February 18, 2021, from https://ap.ohchr.org/documents/S/HRC/resolutions/A_HRC_RES_7_22.pdf
- Consejo de Derechos Humanos. (2009). *Oficina del Alto Comisionado para los Derechos Humanos*. Retrieved February 18, 2021, from https://ap.ohchr.org/documents/sdpage_e.aspx?b=10&se=100&t=11
- Consejo de Derechos Humanos. (2010). *Organización de las Naciones Unidas*. Retrieved February 18, 2021, from https://www.un.org/spanish/waterforlifedecade/pdf/human_right_to_water_and_sanitation_milestones_sp.pdf
- Constitución del Ecuador. (2008). *WIPO*. Retrieved from <https://www.wipo.int/edocs/lexdocs/laws/es/ec/ec030es.pdf>
- Constitución del Ecuador. (2008). *WIPO*. Retrieved from <https://www.wipo.int/edocs/lexdocs/laws/es/ec/ec030es.pdf>
- Convención Internacional sobre los Derechos de las Personas con Discapacidad. (2007). *Organización de las Naciones Unidas*. Retrieved February 18, 2021, from <https://www.un.org/esa/socdev/enable/documents/tccconvs.pdf>
- Convención Marco de las Naciones Unidas sobre el Cambio Climático. (1992). *United Nations Climate Change*. Recuperado el 22 de November de 2020, de <https://unfccc.int/resource/docs/convkp/convsp.pdf>
- Convención sobre la eliminación de todas las formas de discriminación. (1979). *Organización de los Estados Americanos*. Retrieved February 18, 2021, from http://www.oas.org/dil/esp/convencion_sobre_todas_las_formas_de_discriminacion_contra_la_mujer.pdf

- Convenio sobre la Diversidad Biológica. (2011). *Convenio sobre la Diversidad Biológica*. Retrieved February 17, 2021, from <https://www.cbd.int/undb/media/factsheets/undb-factsheets-es-web.pdf>
- COOTAD. (2019). *Observatorio Regional de Planificación para el Desarrollo*. Retrieved September 6, 2021, from <https://observatorioplanificacion.cepal.org/es/marcos-regulatorios/codigo-organico-de-organizacion-territorial-autonomia-y-descentralizacion-de>
- Cordero, G. D. (2012, June). El cambio climático. *Sistema de Información Científica Red de Revistas Científicas de América Latina, el Caribe, España y Portugal*, 231. Retrieved November 22, 2020, from <https://www.redalyc.org/pdf/870/87024179004.pdf>
- Cristoffanini, P. (2017, October 25). Cristianismo y naturaleza: de ideología legitimadora a evangelios verdes. *Sociedad y Discurso*, 2. Retrieved November 23, 2020, from <https://discurso.aau.dk/index.php/sd/article/view/2011>
- Cumbre Mundial sobre el Desarrollo Sostenible. (2002). Retrieved February 18, 2021, from https://www.un.org/esa/sustdev/documents/WSSD_POI_PD/Spanish/WSSDsp_PD.htm
- Damián, M. (2009, March). *UNLP*. Retrieved from http://sedici.unlp.edu.ar/bitstream/handle/10915/2744/I_-_Introducci%C3%B3n_general.pdf?sequence=5
- Defensoría del Pueblo. (2021). *Defensoría del Pueblo*. Retrieved March 1, 2021, from <https://www.dpe.gob.ec/wp-content/dpecomunicacion/Implementacion-Declaracion-NNUU-Derechos-Pueblos-Indigenas.pdf>
- Delegation of the European Union to Ecuador. (2017, July 20). *Delegation of the European Union to Ecuador*. Retrieved April 28, 2021, from https://eeas.europa.eu/delegations/ecuador/30444/node/30444_uz
- Departamento de Información Pública de las Naciones Unidas. (2002, April). *Organización de las Naciones Unidas*. Retrieved February 10, 2021, from https://www.un.org/spanish/conferences/wssd/cumbre_ni.htm#:~:text=El%20principa,l%20objetivo%20de%20la,en%20aras%20del%20desarrollo%20sostenible.

- Derecho, Ambiente y Recursos Naturales. (2018, August 17). *Derecho, Ambiente y Recursos Naturales (DAR)*. Retrieved February 20, 2021, from <https://dar.org.pe/beneficios-de-firmar-y-ratificar-el-acuerdo-de-escazu/>
- Duarte, G. A. (n.d.). Antropocentrismo ¿Un concepto equívoco? *Entretextos*. Retrieved November 23, 2020, from <http://entretextos.leon.uia.mx/num/17/PDF/ENT17-1.pdf>
- Dubois, A. (n.d.). *Diccionario de Acción Humanitaria y Cooperación al Desarrollo*. Retrieved September 6, 2021, from <https://www.dicc.hegoa.ehu.eus/listar/mostrar/42>
- Dyer, H. (2018, January 7). *E-International Relations*. Retrieved from <https://www.e-ir.info/2018/01/07/green-theory-in-international-relations/>
- El Comercio. (2014, December 19). Ecuador da por terminada la cooperación alemana en temas ambientales. *El Comercio*. Retrieved February 20, 2021, from <https://www.elcomercio.com/actualidad/politica/ecuador-termina-cooperacion-alemania-ambiente.html>
- El Comercio. (2014, march 10). Ecuador y México dialogarán sobre 4 ejes de cooperación. *El Comercio*. Retrieved may 2, 2021, from <https://www.elcomercio.com/actualidad/negocios/ecuador-y-mexico-dialogaran-ejes.html>
- El Comercio. (2019, July 15). Ecuador y Reino Unido fortalecen cooperación comercial, medioambiental y de DD.HH. *El Comercio*. Retrieved April 26, 2021, from <https://www.elcomercio.com/actualidad/politica/alan-duncan-reino-unido-cooperacion.html>
- El Comercio. (2020, December 9). La Unión Europea apoyó a Ecuador con USD 50 millones en la pandemia. *El Comercio*. Retrieved April 28, 2021, from <https://www.elcomercio.com/actualidad/politica/union-europea-apoyo-ecuador-pandemia.html>
- El Telégrafo. (2018, august 31). Ecuador y Chile firman acuerdos en temas ambientales, mineros y sociales. *El Telégrafo*. Retrieved may 2, 2021, from <https://www.eltelegrafo.com.ec/noticias/economia/4/ecuador-y-chile-firman-acuerdos-en-temas-ambientales-mineros-y-sociales>

- El Telégrafo. (2019, July 15). Ecuador y Reino Unido fortalecen cooperación en comercio, educación y medio ambiente. *El Telégrafo*. Retrieved April 26, 2021, from <https://www.eltelegrafo.com.ec/noticias/politica/3/ecuador-reinounido-acuerdos>
- El Telégrafo. (2020, July 1). Ecuador recibirá más financiamiento de Alemania para proyectos de cooperación al desarrollo. *El Telégrafo*. Retrieved February 20, 2021, from <https://www.eltelegrafo.com.ec/noticias/sociedad/6/ecuador-alemania-desarrollo>
- El Universo. (2021, January 15). Ministerio del Ambiente de Ecuador recibe recursos para adquisición de equipos y control de incendios forestales. *El Universo*. Retrieved February 15, 2021, from <https://www.eluniverso.com/noticias/2021/01/15/nota/9589735/ministerio-ambiente-ecuador-recibe-recursos-adquisicion-equipos/>
- Embajada de Alemania Quito. (2019, October 24). *Embajada de Alemania Quito*. Retrieved February 20, 2021, from <https://quito.diplo.de/ec-es/-/2260124>
- Enuka, C. (2016). Challenges of International Environmental Cooperation. *Global Journal of Human-Social Science*, 18, 1-2. Retrieved February 10, 2021, from https://globaljournals.org/GJHSS_Volume18/2-Challenges-of-International.pdf
- Eschenhagen, M. (2007). *Oasis*(12), 39-76. Retrieved February 10, 2021, from https://www.researchgate.net/publication/46564123_Las_cumbres_ambientales_internacionales_y_la_educacion_ambiental
- EUROCLIMA+. (2021). *EUROCLIMA+*. Retrieved April 28, 2021, from <https://euroclimaplus.org/inicio-es/quienes-somos>
- Ferreiro, R. (2004). *Nova Southeastern University*. Retrieved from <https://maestrias.clavijero.edu.mx/cursos/MPPGEET1IEDL/modulo4/documentos/website-magister-articulo6.pdf>
- Ferrero, J. J. (2012). Contribución de Graells a la posición de España en el primer convenio internacional para la protección de ciertas especies de la fauna silvestre (1902). *Graellsia*, 68(2), 347-352. Retrieved February 10, 2021, from <https://dialnet.unirioja.es/servlet/articulo?codigo=4389784>

- Fondo de Inversión Ambiental Sostenible. (2021). *Fondo de Inversión Ambiental Sostenible*. Retrieved February 18, 2021, from <http://www.fias.org.ec/portafolio/item/fondo-socio-bosque>
- Fondo de Inversión Ambiental Sostenible. (s.f). *Fondo de Inversión Ambiental Sostenible*. Retrieved may 2, 2021, from <http://www.fias.org.ec/portafolio/item/programa-amazonia-sin-fuego>
- Fondo de las Naciones Unidas para la Infancia. (2006, June). *Organización de las Naciones Unidas*. Retrieved February 18, 2021, from <https://www.un.org/es/events/childrenday/pdf/derechos.pdf>
- Fondo Mundial para la Naturaleza. (2016, December 7). *Fondo Mundial para la Naturaleza*. Retrieved February 17, 2021, from <https://www.wwf.org.ec/?287310/Pases-Amaznicos-se-unen-para-proteger-el-bosque-tropical-ms-grande-del-mundo>
- Fondo Mundial para la Naturaleza. (n.d). *Centro de Extensión Universitaria e Divulgación Ambiental de Galicia*. Retrieved February 10, 2021, from <http://www.ceida.org/prestige/Documentacion/Protocolo%20Kioto.pdf>
- Forest.Ink. (2021). *FOREST.INK*. Retrieved may 8, 2021, from <https://forestink.net/>
- Fundación MAPFRE. (2020). Retrieved February 10, 2021, from <https://app.mapfre.com/ccm/content/documentos/fundacion/prev-ma/revista-seguridad/n105-especial-art11.pdf>
- GAD Municipal de Gualaquiza. (2018). *GAdGualaquiza*. Retrieved may 7, 2021, from <https://gadgualaquiza.gob.ec/web/category/ambiente/>
- Galapagos Conservation Trust. (2021). *Galapagos Conservation Trust*. Retrieved April 26, 2021, from <https://galapagosconservation.org.uk/about-us/>
- Galarza, K. A. (2015, October). *Repositorio Institucional de la Universidad de Cuenca*. Retrieved September 13, 2021, from <http://dspace.ucuenca.edu.ec/bitstream/123456789/23115/1/tesis.pdf>
- Galbiatti, M. (n.d.). *Atlantic International University*. Recuperado el 21 de November de 2020, de <https://www.aiu.edu/resources/Proceso%20Administrativo/6.pdf>

- García, F. (2014, June). *Scielo*. Retrieved February 15, 2021, from http://www.scielo.org.pe/scielo.php?script=sci_arttext&pid=S0254-92122014000100004
- García, J. M. (n.d.). *USFQ Press*. Retrieved February 18, 2021, from <https://revistas.usfq.edu.ec/index.php/polemika/article/view/406>
- Giraldo, C. R. (2009, March). *FLACSO Andes*. Retrieved February 7, 2021, from https://flacsoandes.edu.ec/web/imagesFTP/9431.WP_018_CGiraldo_01.pdf
- Glowka, L. (1996). *Guía del Convenio sobre la Diversidad Biológica*. Retrieved February 17, 2021, from <https://portals.iucn.org/library/sites/library/files/documents/EPLP-030-Es.pdf>
- Gómez, S. (2021, January 13). *Universidad del Medio Ambiente*. Retrieved February 20, 2021, from <https://umamexico.com/la-importancia-del-acuerdo-de-escazu/#:~:text=El%20Acuerdo%20de%20Escaz%C3%BA%2C%20busca,de%20decisi%C3%B3n%20sobre%20el%20desarrollo.>
- Green Climate Fund. (2021). *Green Climate Fund*. Retrieved April 26, 2021, from <https://www.greenclimate.fund/>
- GREENPEACE. (2021). *Greenpeace*. Retrieved from <https://es.greenpeace.org/es/quienes-somos/>
- Grupo Internacional de Trabajo sobre Asuntos Indígenas. (2019, April 24). Retrieved February 15, 2021, from <https://www.iwgia.org/es/ecuador/3396-mi2019-ecuador.html#:~:text=En%20el%20pa%C3%ADs%20habitan%2014,la%20regi%C3%B3n%20Costa%20y%20las>
- Guevara, D. (2015). Retrieved febrero 10, 2021, from <https://dialnet.unirioja.es/servlet/tesis?codigo=95555>
- Guevara, D. (2015). Retrieved February 10, 2021, from <https://dialnet.unirioja.es/servlet/tesis?codigo=95555>
- Gutiérrez, J. M. (2018). *ResearchGate*. Retrieved November 22, 2020, from https://www.researchgate.net/publication/332230061_Contaminacion_atmosferica

- Hallock, S. (1993). *Virginia Tech*. Retrieved February 10, 2021, from https://vtechworks.lib.vt.edu/bitstream/handle/10919/46301/LD5655.V855_1993.H354.pdf?sequence=1&isAllowed=y
- Handl, G. (2012). *United Nations Office of Legal Affairs*. Retrieved February 10, 2021, from https://legal.un.org/avl/pdf/ha/dunche/dunche_s.pdf
- Hernández, O. (2005). *UDLAP*. Retrieved from http://catarina.udlap.mx/u_dl_a/tales/documentos/lri/oliver_h_ri/capitulo3.pdf
- Hidalgo, P. C. (2016). *UDistral*. Retrieved from <https://repository.udistral.edu.co/bitstream/handle/11349/3523/Carre%F1oHidalgoPabloCesar2016.pdf;jsessionid=D046A2435F8030481E2F978F6DB2573F?sequence=1>
- Induanálisis. (2019, June 4). Retrieved February 10, 2021, from https://www.induanalisis.com/publicacion/detalle/dbo_y_dqo_31
- Jackson, P. (2021). *Organización de las Naciones Unidas*. Retrieved February 10, 2021, from <https://www.un.org/es/chronicle/article/de-estocolmo-kyotobreve-historia-del-cambio-climatico#:~:text=La%20Conferencia%20Cient%C3%ADfica%20de%20las%20Naciones%20Unidas%20tambi%C3%A9n%20conocida%20como,acci%C3%B3n%20que%20conten%C3%ADa%20recomendaciones%20>
- Kaplan, M. (1998). *La crisis ambiental: análisis y alternativas*. Retrieved November 21, 2020, from <https://archivos.juridicas.unam.mx/www/bjv/libros/1/141/4.pdf>
- Kwiatkowska, T. (2018, February). *ResearchGate*. Retrieved November 23, 2020, from https://www.researchgate.net/publication/332335751_Aldo_Leopold_y_la_Etica_de_la_Tierra
- La Oficina del Alto Comisionado de las Naciones Unidas para los Derechos Humanos. (2013). *Oficina del Alto Comisionado de las Naciones Unidas para los Derechos Humanos*. Retrieved March 1, 2021, from https://www.ohchr.org/documents/publications/undripmanualfornhris_sp.pdf
- La República. (2020, September 30). Ecuador firma acuerdo de 62,5 millones con la USAID para objetivos de desarrollo. *La República*. Retrieved March 20, 2021, from

<https://www.larepublica.ec/blog/2020/09/30/ecuador-y-eeuu-firman-acuerdo-por-625-millones-para-objetivos-de-desarrollo/>

La Secretaría Nacional de Planificación y Desarrollo. (2013). *Organización de las Naciones Unidas para la Alimentación y la Agricultura*. Retrieved September 6, 2021, from <http://extwprlegs1.fao.org/docs/pdf/ecu139396.pdf>

La Secretaría Nacional de Planificación y Desarrollo. (2013). *Organización de las Naciones Unidas para la Alimentación y la Agricultura*. Retrieved September 6, 2021, from <http://extwprlegs1.fao.org/docs/pdf/ecu139396.pdf>

Larrea, F. (2019). *UASB*. Retrieved from <https://repositorio.uasb.edu.ec/bitstream/10644/6649/4/T2876-MCCSD-Ordo%C3%B1ez-Azonía.pdf>

Leal, R. (2008, December). La organización de las naciones unidas y el desarrollo del derecho internacional ambiental. *Terra Nueva Etapa*, 14(36), 187-2002. Retrieved February 10, 2021, from http://190.169.94.12/ojs/index.php/rev_terr/article/view/1257

León, T. R. (2019, August 27). Retrieved from <https://lalineadefuego.info/2019/08/27/el-pensamiento-ecologico-en-el-marxismo-y-el-fascismo-por-tomas-rodriguez-leon/#:~:text=Marx%20y%20Engels%20ven%20necesaria,una%20relaci%C3%B3n%20feliz%20hombre%20naturaleza.>

López, S. O. (2018). *Repositorio Digital IAEN*. Retrieved September 6, 2021, from <https://repositorio.iaen.edu.ec/bitstream/24000/4839/1/TESINA%20L%C3%B3pez%20Ramos%20Santiago%20Oswaldo.pdf>

Lucatello, S. (2014, December). *Researchgate*. Retrieved from https://www.researchgate.net/publication/315998966_Cooperacion_Internacional_y_medio_ambiente_tendencias_y_desafios_para_Latinoamerica

Madsen, M. (2013, September). *Organismo Internacional de Energía Atómica*. Retrieved November 22, 2020, from https://www.iaea.org/sites/default/files/publications/magazines/bulletin/bull154-3/54305612425_es.pdf

- Mallén, C. (2012, November). Rachel Carson, 50 años de romper en silencio. *Revista Mexicana de Ciencias Forestales*, 3(14), 1-2. Retrieved February 10, 2021, from <https://www.redalyc.org/pdf/634/63439002001.pdf>
- Mantilla, L. R. (2000). *FLACSO*. Retrieved from <https://biblio.flacsoandes.edu.ec/libros/10440-opac>
- Marín, M. E. (2016). *Repositorio Institucional UPB*. Retrieved November 24, 2020, from <https://repository.upb.edu.co/bitstream/handle/20.500.11912/3391/La%20%20C3%A9tica%20ecol%C3%B3gica%20en%20la%20perspectiva%20de%20Michel%20Serres.pdf?sequence=4&isAllowed=y>
- Marin, M. P. (2016, February 12). *Dialnet*. Retrieved August 16, 2021, from <https://dialnet.unirioja.es/descarga/articulo/5792032.pdf>
- Marulanda, M. (2019). *Universidad Militar Nueva Granada*. Retrieved February 10, 2021, from <https://repository.unimilitar.edu.co/handle/10654/35920>
- Ministerio de Ambiente, Agua y Transición Ecológica. (2011, March). *ESPOL*. Retrieved February 10, 2021, from <https://www.dspace.espol.edu.ec/bitstream/123456789/15806/1/BLGO.%20GUSTAVO%20ITURRALDE%20-%20MAE.pdf>
- Ministerio de Ambiente, Agua y Transición Ecológica. (n.d.). *Ministerio de Ambiente y Agua*. Retrieved February 10, 2021, from <https://www.ambiente.gob.ec/el-objetivo-guayaquil-ecologico-es-entregar-a-la-ciudad-un-estero-salado-restaurado-con-areas-naturales-para-que-la-poblacion-disfrute-bajo-un-concepto-de-orden/>
- Ministerio de Asuntos Exteriores, Unión Europea y Cooperación; Secretaría de Estado de Cooperación Internacional y para Iberoamérica y el Caribe; Dirección General de Políticas de Desarrollo Sostenible. (2019). *Cooperación Española*. Retrieved April 29, 2021, from https://www.cooperacionespanola.es/sites/default/files/map_ecuador_4.pdf
- Ministerio de Desarrollo Agrario y Riego. (2015). Retrieved February 17, 2021, from <https://www.midagri.gob.pe/portal/50-sector-agrario/conservacion-de-los-rnrrn/356-tipos-de-conservacion>
- Ministerio de Relaciones Exteriores Colombia. (2021, January 10). *Ministerio de Relaciones Exteriores Colombia*. Retrieved May 2, 2021, from

<https://www.cancilleria.gov.co/en/newsroom/news/ecuador-encontramos-gobierno-amigo-hemos-avanzando-infraestructura-proteccion>

Ministerio de Relaciones Exteriores y Movilidad Humana; Embajada de España en Ecuador; Cooperación Española. (2019). *AECID*. Retrieved April 29, 2021, from <https://aecd-ecuador.ec/wp-content/uploads/2018/04/MAP20192022web.pdf>

Ministerio del Ambiente. (2020). *Ministerio del Ambiente*. Retrieved from <http://areasprotegidas.ambiente.gob.ec/es/info-snap>

Ministerio del Ambiente y Agua. (2016, July 26). *Ministerio del Ambiente y Agua*. Retrieved February 24, 2021, from <https://www.ambiente.gob.ec/ecuador-suscribe-acuerdo-de-paris-sobre-cambio-climatico/>

Ministerio del Ambiente, Agua y Transición Ecológica. (2013). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved September 6, 2021, from <https://www.ambiente.gob.ec/los-derechos-de-la-naturaleza-son-ejes-prioritarios-en-el-plan-nacional-del-buen-vivir-2013-2017/>

Ministerio del Ambiente, Agua y Transición Ecológica. (2013, December 13). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved February 15, 2021, from <https://www.ambiente.gob.ec/wp-content/uploads/downloads/2015/07/CONTROL-FORESTAL.pdf>

Ministerio del Ambiente, Agua y Transición Ecológica. (2013). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved February 18, 2021, from <https://www.ambiente.gob.ec/wp-content/uploads/downloads/2015/07/SOCIO-BOSQUE.pdf>

Ministerio del Ambiente, Agua y Transición Ecológica. (2014, June). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved February 13, 2021, from <https://www.ambiente.gob.ec/wp-content/uploads/downloads/2014/07/MAE-Boleti%CC%81n-SOMOS-06-final1.pdf>

Ministerio del Ambiente, Agua y Transición Ecológica. (2015, July). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved February 13, 2021, from <https://www.ambiente.gob.ec/wp-content/uploads/downloads/2015/07/PANE.pdf>

Ministerio del Ambiente, Agua y Transición Ecológica. (2015). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved February 13, 2021, from <http://areasprotegidas.ambiente.gob.ec/es/content/programa-de-apoyo-al-sistema-nacional-de-%C3%A1reas-protegidas-pasnap>

Ministerio del Ambiente, Agua y Transición Ecológica. (2015). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved February 20, 2021, from <https://www.ambiente.gob.ec/se-reanuda-la-cooperacion-ambiental-alemana-con-el-ecuador/#:~:text=%E2%80%9CEste%20di%C3%A1logo%20intergubernamental%20ecuadoriano%2Dalem%C3%A1n,Jurado%20en%20la%20capital%20alemana.>

Ministerio del Ambiente, Agua y Transición Ecológica. (2015, 29 september). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved may 2, 2021, from <https://www.ambiente.gob.ec/brasil-y-ecuador-juntos-en-proyecto-amazonia-sin-fuego/>

Ministerio del Ambiente, Agua y Transición Ecológica. (2015, october 15). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved may 2, 2021, from <https://www.ambiente.gob.ec/ministros-de-ecuador-y-chile-firman-acuerdo-para-fortalecer-cooperacion-interinstitucional/>

Ministerio del Ambiente, Agua y Transición Ecológica. (2017, December). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved September 13, 2021, from <http://pras.ambiente.gob.ec/documents/228536/3386018/INCORPORACI%C3%93N+DE+LOS+APORTE+CIUDADANOS+2017.pdf/56bc6d0f-b1a5-481b-ad8e-fc1ff698d1f0;jsessionid=B0Oo-xPiyevz-GR6lRq9I5Rv>

Ministerio del Ambiente, Agua y Transición Ecológica. (2019, January 31). *INABIO*. Retrieved February 5, 2021, from <http://inabio.biodiversidad.gob.ec/2019/01/30/26-gestion-integral-de-desechos-solidos-pngids/#:~:text=El%20Programa%20Nacional%20para%20la,aplicaci%C3%B3n%20del%20principio%20de%20Responsabilidad>

Ministerio del Ambiente, Agua y Transición Ecológica. (2019). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved September 8, 2021, from <https://www.ambiente.gob.ec/wp-content/uploads/downloads/2020/07/5.PROYECTO-PNGIDS.pdf>

- Ministerio del Ambiente, Agua y Transición Ecológica. (2019, January 30). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved September 19, 2021, from <http://inabio.biodiversidad.gob.ec/2019/01/30/18-control-forestal/>
- Ministerio del Ambiente, Agua y Transición Ecológica. (2019, February 21). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved February 20, 2021, from <https://www.ambiente.gob.ec/el-gobierno-nacional-transparenta-la-gestion-de-fondos-de-cooperacion-internacional/>
- Ministerio del Ambiente, Agua y Transición Ecológica. (2019). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved September 16, 2021, from https://www.ambiente.gob.ec/wp-content/uploads/downloads/2020/07/11.SNAP_.pdf
- Ministerio del Ambiente, Agua y Transición Ecológica. (2020). *Ministerio del Ambiente*. Retrieved from <http://areasprotegidas.ambiente.gob.ec/es/info-snap>
- Ministerio del Ambiente, Agua y Transición Ecológica. (2020, October 13). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved February 18, 2021, from <https://www.ambiente.gob.ec/comunicado-25/>
- Ministerio del Ambiente, Agua y Transición Ecológica. (2020, april 22). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved may 5, 2021, from <https://www.ambiente.gob.ec/covid-19-un-respiro-para-la-naturaleza/>
- Ministerio del Ambiente, Agua y Transición Ecológica. (2021). *Ministerio del Ambiente y Agua*. Retrieved February 10, 2021, from <https://www.habitatyvivienda.gob.ec/proyecto-guayaquil-ecologico/#:~:text=El%20Proyecto%20Guayas%20Ecol%C3%B3gico%20tiene,%C3%A1reas%20verdes%20y%20espacios%20p%C3%ABlicos.>
- Ministerio del Ambiente, Agua y Transición Ecológica. (2021). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved September 8, 2021, from <https://www.ambiente.gob.ec/programa-pngids-ecuador/>
- Ministerio del Ambiente, Agua y Transición Ecológica. (2021). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved February 7, 2021, from <https://www.ambiente.gob.ec/programa-de-reparacion-ambiental-y-social-pras/>

- Ministerio del Ambiente, Agua y Transición Ecológica. (2021). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved February 7, 2021, from <https://www.ambiente.gob.ec/programa-de-reparacion-ambiental-y-social-pras/>
- Ministerio del Ambiente, Agua y Transición Ecológica. (2021). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved September 16, 2021, from <http://pras.ambiente.gob.ec/documents/228536/7948835/FASE-2-PRAS-FEB-2021.pdf/4182b92c-904b-49f6-8ecd-023715a67548>
- Ministerio del Ambiente, Agua y Transición Ecológica. (2021). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved February 15, 2021, from <https://www.ambiente.gob.ec/sistema-nacional-de-control-forestal/>
- Ministerio del Ambiente, Agua y Transición Ecológica. (2021). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved February 18, 2021, from <https://www.ambiente.gob.ec/programa-socio-bosque/>
- Ministerio del Ambiente, Agua y Transición Ecológica. (2021, January 27). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved April 26, 2021, from <https://www.ambiente.gob.ec/ecuador-y-reino-unido-se-preparan-para-la-conferencia-de-la-onu-sobre-el-cambio-climatico-cop-26/>
- Ministerio del Ambiente, Agua y Transición Ecológica. (n.d.). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved February 7, 2021, from http://pras.ambiente.gob.ec/bg/listado_noticias/-/blogs/ministra-del-ambiente-visita-proyectos-de-compensacion-social;jsessionid=4HQA VV4Up2d9wdpXFuk6stQA
- Ministerio del Ambiente, Agua y Transición Ecológica. (n.d.). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved February 18, 2021, from <https://www.ambiente.gob.ec/socio-bosque-cuenta-con-fondo-para-aportantes-de-la-iniciativa/#:~:text=El%20Programa%20Socio%20Bosque%20tiene,de%20bosques%20y%20p%C3%A1ramos%20nativos.&text=Los%20beneficiarios%20del%20Programa%20Socio,organizacional%2C%20sal>
- Ministerio del Ambiente, Agua y Transición Ecológica. (n.d.). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved February 18, 2021, from <http://sociobosque.ambiente.gob.ec/node/726#:~:text=Seg%C3%BAAn%20las%20cifr>

as%20oficiales%20de,conservaci%C3%B3n%20de%20sus%20espacios%20boscosos

Ministerio del Ambiente, Agua y Transición Ecológica. (n.d.). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved February 20, 2021, from <https://www.ambiente.gob.ec/gobierno-de-alemania-apoya-proyectos-liderados-por-el-ministerio-del-ambiente-del-ecuador/#:~:text=La%20cooperaci%C3%B3n%20de%20Alemania%20equivale,y%20la%20Federal%20de%20Alemania.>

Ministerio del Ambiente, Agua y Transición Ecológica. (n.d.). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved March 20, 2021, from <https://www.ambiente.gob.ec/ministerio-del-ambiente-lidera-cooperacion-entre-el-earth-institute-con-ecuador/>

Ministerio del Ambiente, Agua y Transición Ecológica. (n.d.). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved May 2, 2021, from <https://www.ambiente.gob.ec/ecuador-y-colombia-trabajaran-en-conjunto-en-temas-ambientales/>

Ministerio del Ambiente, Agua y Transición Ecológica. (s.f.). *Ministerio del Ambiente, Agua y Transición Ecológica*. Retrieved may 2, 2021, from <https://www.ambiente.gob.ec/mae-suscribio-un-convenio-de-cooperacion-en-materia-de-proteccion-y-conservacion-con-bolivia/#:~:text=Ecuador%20y%20Bolivia%2C%20adem%C3%A1s%20de,y%20prot ecci%C3%B3n%20de%20bienes%20patrimoniales.&text=%E2%80%9C Los%20acuerdos%2>

Ministry of the Environment, Government of Japan. (2005, July). *Ministry of the Environment*. Retrieved febrero 10, 2021, from https://www.env.go.jp/earth/coop/coop/english/environmental/pdf/arikata_e.pdf

Moguel, P. (n.d.). El humanismo biocéntrico: hacia una filosofía de la vida. *Revista Sustentabilidades*. Retrieved November 24, 2020, from <http://www.sustentabilidades.usach.cl/sites/sustentable/files/paginas/08-07.pdf>

Monares, A. (2017, December 16). Modernidad y Crisis Ambiental: En torno al Fundamento de la Relación Naturaleza - Ser Humano en Occidente. *Revistas Electrónicas UACH*, 34. doi:<https://doi.org/10.4206/rev.austral.cienc.soc.1999.n3-03>

- Naciones Unidas. (2020). *UN*. Retrieved from <https://www.un.org/sustainabledevelopment/es/objetivos-de-desarrollo-sostenible/>
- Naciones Unidas Ecuador. (2019). *Fondo de Población de las Naciones Unidas*. Retrieved may 4, 2021, from <https://ecuador.unfpa.org/sites/default/files/pub-pdf/Marco-Cooperacion-ONU-Dic4.pdf>
- NODAL. (2017). Mandatarios preparan nuevo encuentro Ecuador-Chile para finales de noviembre. *NODAL*. Retrieved may 2, 2021, from <https://www.nodal.am/2017/10/ecuador-chile-refuerzan-cooperacion-bilateral-materia-comercial-social-energetica-ambiental/>
- Núñez, I. M. (2019, September). *Scielo*. Retrieved from <http://www.scielo.org.mx/pdf/esprial/v26n76/1665-0565-esprial-26-76-281.pdf>
- Observatorio del Principio 10 en América Latina y el Caribe. (2021). *Comisión Económica para América Latina y el Caribe*. Retrieved February 24, 2021, from <https://observatoriop10.cepal.org/es/tratados/acuerdo-paris-la-convencion-marco-cambio-climatico#:~:text=El%20Acuerdo%20establece%20un%20mecanismo,no%20contenciosa%20y%20no%20punitiva.>
- Oficina del Alto Comisionado de las Naciones Unidas para los Derechos Humanos. (2005). *Oficina del Alto Comisionado de las Naciones Unidas para los Derechos Humanos*. Retrieved February 18, 2021, from https://ap.ohchr.org/documents/dpage_s.aspx?b=5&se=7&t=9
- Oficina del Alto Comisionado para los Derechos Humanos. (2018, January 22). *Oficina del Alto Comisionado para los Derechos Humanos*. Retrieved February 18, 2021, from <https://acnudh.org/el-derecho-al-agua-folleto-informativo-no-35/>
- Oficina del Alto Comisionado para los Derechos Humanos. (2021). *Oficina del Alto Comisionado para los Derechos Humanos*. Retrieved February 15, 2021, from <https://www.ohchr.org/Documents/Publications/GuideIPleaflet8sp.pdf>
- Oficina Española de Cambio Climático. (2017). *Iberglobal*. Retrieved February 24, 2021, from http://www.iberglobal.com/files/2017/acuerdo_paris_bice.pdf

- Oficina Internacional del Trabajo. (2015, February 17). Retrieved February 15, 2021, from https://www.ilo.org/lima/publicaciones/WCMS_345065/lang--es/index.htm
- ONU. (2020). *Mercury Convention*. Retrieved from <http://www.mercuryconvention.org/Convenio/Texto/tabid/5690/language/es-CO/Default.aspx>
- Orellana, M. (2014, October). *Comisión Económica para América Latina y el Caribe*. Retrieved February 10, 2021, from https://www.cepal.org/sites/default/files/publication/files/37184/S1420606_es.pdf
- Organismo Internacional de Energía Atómica. (2005, September 2005). *Organismo Internacional de Energía Atómica*. Retrieved November 21, 2020, from https://inis.iaea.org/collection/NCLCollectionStore/_Public/42/022/42022165.pdf?r=1
- Organización de las Naciones Unidas. (1992). *Universidad Nacional de Educación a Distancia*. Retrieved February 10, 2021, from http://portal.uned.es/pls/portal/docs/PAGE/UNED_MAIN/LAUNIVERSIDAD/DEPARTAMENTOS/0614/ASIGNAT/MEDIOAMBIENTE/TEMA%201/%20%20%20%20%20DECLARACI%C3%93N%20DE%20R%C3%8DO%201992.PDF
- Organización de las Naciones Unidas. (2004, January 19). *Organización de las Naciones Unidas*. Retrieved March 1, 2021, from https://www.un.org/esa/socdev/unpfii/documents/workshop_data_background_es.htm
- Organización de las Naciones Unidas. (2018, November 29). Retrieved March 1, 2021, from <https://news.un.org/es/story/2018/11/1446691>
- Organización de las Naciones Unidas. (2019). *Organización de las Naciones Unidas*. Retrieved February 24, 2021, from <https://www.un.org/es/climatechange/paris-agreement>
- Organización de las Naciones Unidas. (2019, March 18). *Organización de las Naciones Unidas*. Retrieved January 30, 2021, from <https://news.un.org/es/story/2019/03/1453001>
- Organización de las Naciones Unidas. (2021). *Organización de las Naciones Unidas*. Retrieved February 10, 2021, from <https://www.un.org/spanish/esa/sustdev/documents/declaracionrio.htm>

Organización de las Naciones Unidas. (2021). *Organización de las Naciones Unidas*. Retrieved February 18, 2021, from https://www.google.com/search?q=organizaci%C3%B3n&rlz=1C1CHZL_esEC764EC764&ei=6TSEYPigNoSOwbkPsc24uAs&oq=organizac&gs_lcp=Cgdnd3Mtd2l6EAMYADIHCAAQsQMqQzIHCAAQsQMqQzIFCAAQsQMyAggAMgIIADIFCAAQsQMyAggAMgIIADICCAAyAggAOggIABCxAxCDAToECAAQQzoICC4QsQMqgwE6BQguE

Organización de las Naciones Unidas. (2021). *Organización de las Naciones Unidas*. Retrieved March 1, 2021, from https://www.un.org/es/events/indigenousday/pdf/indigenousdeclaration_faqs.pdf

Organización de las Naciones Unidas. (2021). *Universidad Andina Simón Bolívar*. Retrieved February 10, 2021, from www.uasb.edu.ec/UserFiles/369/File/PDF/CentrodeReferencia/Temas%20de%20An%20El%20Derecho%20a%20un%20ambiente%20sano/Documentos/Declaraci%20F3ndestocolmo.pdf

Organización de las Naciones Unidas para la Alimentación y la Agricultura. (2016, July 28). Retrieved February 17, 2021, from <http://www.fao.org/ecuador/noticias/detail-events/es/c/427495/>

Organización de las Naciones Unidas para la Alimentación y la Agricultura. (2020, April 20). *Organización de las Naciones Unidas para la Alimentación y la Agricultura*. Retrieved february 24, 2021, from <http://www.fao.org/ecuador/noticias/detail-events/es/c/1271949/#:~:text=Ecuador%20ratific%C3%B3%20su%20adhesi%C3%B3n%20al,Nacional%20en%20el%20a%C3%B1o%202019.>

Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura. (2017, December). *UNESCO*. Retrieved March 11, 2021, from <https://www.unescoetxea.org/dokumentuak/dossierDDHHamb.pdf>

Organización del Tratado de Cooperación Amazónica. (2021, February 15). *OCTA*. Retrieved February 15, 2021, from http://www.otca-oficial.info/about/who_we_are

Organización del Tratado de Cooperación Amazónica. (2021). *Organización del Tratado de Cooperación Amazónica*. Retrieved February 18, 2021, from <http://otca.org/project/proyecto-gef-amazonas/>

- Organización Internacional del Trabajo. (2009). *Organización Internacional del Trabajo*. Retrieved February 15, 2021, from https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---normes/documents/publication/wcms_116075.pdf
- Organización Mundial de la Salud. (1993, April 26). *Organización Mundial de la Salud*. Retrieved November 21, 2020, from https://apps.who.int/iris/bitstream/handle/10665/202932/WHA46_30_spa.pdf;jsessionid=48F70D420DF96D88DC80B8E5CB368075?sequence=1
- OTCA. (2020, December 08). *OTCA*. Retrieved from http://www.otca-oficial.info/about/who_we_are
- Paéz, J. C. (2016, March). *UIDE*. Retrieved from <https://repositorio.uide.edu.ec/bitstream/37000/1068/1/T-UIDE-0859.pdf>
- Pauselli, G. (2013). *Teorías de relaciones internacionales y la explicación de la ayuda externa*. Retrieved from <http://ried.unizar.es/index.php/revista/article/viewFile/65/29>
- Payer, M. (2005). *UNAM*. Retrieved from <http://www.proglocode.unam.mx/system/files/TEORIA%20DEL%20CONSTRUCTIVISMO%20SOCIAL%20DE%20LEV%20VYGOTSKY%20EN%20COMPARACION%20CON%20LA%20TEORIA%20JEAN%20PIAGET.pdf>
- Pérez, C. (2014). *Pontificia Universidad Católica del Ecuador*. Retrieved September 6, 2021, from <http://repositorio.puce.edu.ec/bitstream/handle/22000/7494/10.C06.000090.pdf?sequence=4&isAllowed=y>
- Peterson, K. (2012). *Grin*. Retrieved February 10, 2021, from <https://www.grin.com/document/280647>
- Pinto, M. (2017, September). *ResearchGate*. Retrieved February 18, 2021, from https://www.researchgate.net/publication/322200115_EL_DERECHO_INTERNACIONAL_DE_AGUAS_EN_AMERICA_LATINA_Y_EL_CARIBE_DESARROLLO_ACTUAL_Y_PERSPECTIVAS
- Portal oficial del Estado argentino. (2020). *Argentina.gob.ar*. Retrieved February 20, 2021, from <https://www.argentina.gob.ar/ambiente/contenidos/escazu>

- Programa 21. (1992). *Organización de las Naciones Unidas*. Retrieved February 18, 2021, from https://www.un.org/esa/dsd/agenda21_spanish/res_agenda21_18.shtml
- Programa de las Naciones Unidas para el Desarrollo. (n.d.). *Programa de las Naciones Unidas para el Desarrollo*. Retrieved February 15, 2021, from https://procurement-notices.undp.org/view_file.cfm?doc_id=166041
- Ramsar. (2014). *Ramsar*. Retrieved from https://www.ramsar.org/sites/default/files/fs_6_ramsar_convention_sp_0.pdf
- Redparques. (2021). *Redparques*. Retrieved February 17, 2021, from <https://redparques.com>
- Reynosa, E. (2017). *Crisis Ambiental Global. Causas, consecuencias y soluciones prácticas*. doi:10.13140/RG.2.2.25344.12807
- Robayo, L. (2020, July 1). *Mundo PMMI*. Retrieved February 5, 2021, from <https://www.mundopmmi.com/empaque/sustentabilidad/article/21139011/legislacion-la-responsabilidad-extendida-del-productor-cambia-el-paradigma-de-los-residuos#:~:text=La%20REP%20fue%20definida%20por,ciclo%20de%20vida%20de%20producto%E2%80%9D>.
- Rojas, D. M. (2003). *Scielo*. Retrieved from <http://www.scielo.org.co/pdf/rhc/n27/n27a09.pdf>
- Romero, M. (2021, July 18). Retrieved February 13, 2021, from <https://ecuador.wcs.org/es-es/Recursos/Noticias/articleType/ArticleView/articleId/14605/El-Sistema-Nacional-de-Areas-Protegidas-en-Ecuador.aspx>
- Rosales, G. I. (2009, March). Ética del medio ambiente. *Sistema de Información Científica Redalyc*, 12. Retrieved November 23, 2020, from <https://www.redalyc.org/pdf/294/29411996002.pdf>
- Rozzi, R. (1997). *Biblioteca Digital Instituto Forestal*. Retrieved November 24, 2020, from <https://bibliotecadigital.infor.cl/handle/20.500.12220/8498>
- Salazar, J. M. (2016, September 15). *Oficina de la OIT para América Latina y el Caribe*. Retrieved February 15, 2021, from https://www.ilo.org/wcmsp5/groups/public/---americas/---ro-lima/documents/statement/wcms_523910.pdf
- Salvador, J. (2009, April). *ResearchGate*. Retrieved 2020, from https://www.researchgate.net/publication/334573475_EL_PLAN_MARSHAL_Y_LA

RECONSTRUCCION EUROPEA POSTERIOR A LA SEGUNDA GUERRA MUNDIAL

Sánchez, B. (2019, November). *Entreculturas*. Retrieved November 22, 2020, from https://www.entreculturas.org/sites/default/files/noticias/documento_medioambiente_y_pobreza.pdf

Sandler, T. (2016, December 5). *Oxford Academic*. Retrieved diciembre 2, 2020, from <https://academic.oup.com/oep/article/69/2/345/2605949>

Secretaría de Medio Ambiente y Recursos Naturales. (2016, December 11). *Secretaría de Medio Ambiente y Recursos Naturales. Gobierno de México*. Retrieved February 10, 2021, from <https://www.gob.mx/semarnat/articulos/protocolo-de-kioto-sobre-cambio-climatico?idiom=es#:~:text=Busca%20reducir%20las%20emisiones%20de,20%20a%20C3%B1os%20de%20su%20creaci%C3%B3n.&text=El%20Protocolo%20de%20Kiot o%20fue,que%20causan%20el%20calentamiento%20gl>

Secretaria de turismo del gobierno federal. (2009). *Mexico Consejo de Promoción Turística*. Retrieved August 2, 2021, from <https://www.pasosonline.org/Publicados/pasosoedita/TurEspiritual1.pdf>

Secretaría Técnica de Cooperación Internacional. (2015, May 11). *ISSU*. Retrieved September 6, 2021, from https://issuu.com/seteci/docs/agenda_nacional_del_cooperacio__n_i

Secretaría Técnica Planifica Ecuador. (2014). *Secretaría Técnica Planifica Ecuador*. Retrieved May 2, 2021, from <https://www.planificacion.gob.ec/wp-content/uploads/downloads/2015/03/PLAN-BINACIONAL-28-11-2014baja.pdf>

Secretaría Técnica Planifica Ecuador. (2014). *Secretaría Técnica Planifica Ecuador*. Retrieved May 2, 2021, from <http://www.sbi-ecuador-colombia.info/documentos/PlanBinacional-V2.pdf>

Secretaría Técnica Planifica Ecuador. (2015, March 16). *Ministerio de Ambiente y Agua*. Retrieved February 10, 2021, from <https://www.ambiente.gob.ec/wp-content/uploads/downloads/2015/07/ESTERO-SALADO.pdf>

Secretaría Técnica Planifica Ecuador. (2016). *Secretaría Técnica Planifica Ecuador*. Retrieved February 18, 2021, from

<https://sni.gob.ec/documents/10180/4534845/INFORME+EVALUACION++PROYECTO+SOCIO+BOSQUE.pdf/e35eb398-7289-464a-af64-96aaca29746>

Seminario, H. M. (2017). *Universidad Ricardo Palma*. Retrieved November 23, 2020, from <https://revistas.urp.edu.pe/index.php/Scientia/article/view/1748>

Serres, M. (1990). *El Contrato Natural*. (J. V. Umbelina Larraceleta, Trans.) Retrieved November 24, 2020, from <http://www.pratec.org/wpress/pdfs-pratec/Michel-Serres-El-contrato-natural.pdf>

Sputnik Mundo. (2018, march 7). *Sputnik Mundo*. Retrieved may 2, 2021, from <https://mundo.sputniknews.com/20180307/quito-mexico-acuerdos-cooperacion-1076850970.html>

Trejos, Y. V. (2011, enero). Demografía Ambiental: ¿Cómo explicar el crecimiento poblacional a partir del enfoque de las fuerzas medidoras? *Revista Geográfica de América Central*, 46. Retrieved November 21, 2020, from <https://www.redalyc.org/pdf/4517/451744670002.pdf>

U.S Embassy and Consulate in Ecuador. (2021, April 22). *U.S Embassy and Consulate in Ecuador*. Retrieved April 25, 2021, from <https://ec.usembassy.gov/es/los-estados-unidos-se-enfoca-en-el-cambio-climatico-y-colabora-estrechamente-con-el-ecuador-en-la-proteccion-medioambiental-del-pais%E2%80%AF/>

UNDP. (n.d). *International Recovery Platform*. Retrieved from <https://eird.org/pr14/cd/documentos/espanol/Publicacionesrelevantes/Recuperacion/5-Med-Ambiente.pdf>

UNESCO. (2019). *UNESCO*. Retrieved from <https://es.unesco.org/news/12-nuevos-sitios-incorporados-red-mundial-reservas-biosfera-unesco>

UNIDA. (2021). *Mendel University in Brno*. Retrieved may 8, 2021, from <https://unida.mendelu.cz/es/coloquio>

Unión Europea. (2021). *Web Oficial de la Unión Europea*. Retrieved February 25, 2021, from [https://ec.europa.eu/clima/policies/international/negotiations/paris_es#:~:text=El%20Acuerdo%20de%20Par%C3%ADs%20es,COP21\)%20en%20diciembre%20de%202015.&text=La%20UE%20ratific%C3%B3%20formalmente%20el,4%20de%20noviembre%20de%202016.](https://ec.europa.eu/clima/policies/international/negotiations/paris_es#:~:text=El%20Acuerdo%20de%20Par%C3%ADs%20es,COP21)%20en%20diciembre%20de%202015.&text=La%20UE%20ratific%C3%B3%20formalmente%20el,4%20de%20noviembre%20de%202016.)

- United Nations. (2009). *UN*. Retrieved from https://legal.un.org/avl/pdf/ha/clnuiw/clnuiw_s.pdf
- United Nations. (2020). *UNFCCC*. Retrieved from <https://unfccc.int/es/process-and-meetings/the-convention/que-es-la-convencion-marco-de-las-naciones-unidas-sobre-el-cambio-climatico>
- Vélez, J. C. (2013, May 23). *Scielo*. Retrieved from Scielo: <http://www.scielo.org.co/pdf/rfdcp/v43n119/v43n119a05.pdf>
- Villagómez, M. (n.d.). *Asociación de Funcionarios y Empleados del Servicio Exterior Ecuatoriano*. Retrieved April 28, 2021, from <https://afese.com/img/revistas/revista56/acuecuue.pdf>
- WWF. (2016). *Amazonía Viva*. Retrieved from http://awsassets.panda.org/downloads/amazon__spanish.pdf
- WWF. (2016). *Amazonía Viva*. Retrieved from http://awsassets.panda.org/downloads/amazon__spanish.pdf
- WWF. (2016). *Amazonía Viva*. Retrieved from http://awsassets.panda.org/downloads/amazon__spanish.pdf
- WWF. (2016). *Amazonía Viva*. Retrieved from http://awsassets.panda.org/downloads/amazon__spanish.pdf
- WWF. (2020). *WWF*. Retrieved from <https://wwf.panda.org/es/acerca/misionwwf/>
- Yépez, M. B. (2011). *Universidad Politecnica Salesiana*. Retrieved February 7, 2021, from <https://dspace.ups.edu.ec/handle/123456789/1286>