UNIDAD EDUCATIVA PARTICULAR JAVIER

BACHILLERATO EN CIENCIAS

MONOGRAPH

"DEFORESTATION. HOW DEFORESTATION AFFECTS THE ECUADORIAN POPULATION AND THE ECOSYSTEM, NOWADAYS. CAUSES AND CONSEQUENCES. PLANS AND RECOVERY"

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Gratitude

My thanks to my Father God for having enlightened my life in all this time, that with his infinite goodness I strengthened my intellectual capacity. To my beloved parents, César and Inés; who have been my fundamental pillars guiding me with a lot of love, wisdom and example to fulfill step by step my studies of baccalaureate with responsibility. To my dear brother, Luis Fernando; for their support and unconditional advice. To my esteemed advisors and monograph professors who gave me at all times their entire confidence and knowledge to clear any doubts regarding this final high school work. And finally, to my super classmates and friends of the high school and course that made these years of life the happiest, best and unforgettable.

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Introduction

The following introduction is presented on the monographic research work that as a central title is deforestation, with the topics: How deforestation affects the Ecuadorian population and the ecosystem, nowadays. The causes and consequences. The plans and recovery. Since it is of vital importance to guide all those people who dedicate themselves to the felling of trees without any knowledge of how much they harm nature and all living beings.

The definition comes from the English deforestation "the word deforestation allows naming to the action and effect of deforestation (to clear a land of its trees and plants). It is the disappearance of the forest masses". [CITATION MarcadorDePosición1 \l 12298], Although at the moment, the supposed studies and actions that are being done for this case, the truth is that, much remains to be done and it should be emphasized that not only here in our country; but in Latin America and in the whole world; since it is still not aware of these negative acts.

The investigations for this monographic work, refers that from the antiquity the felling of trees was executed, the people of those times did it with axes of flint in small quantities, but at the same time significant. This means that the man was discovering the way to subsist, to protect himself and creating without realizing an occupation or dedication that they would call agriculture. Agriculture, according to the man of that time, processed it with the supposed cleanliness of the land with trees and shrubs; that is to say, the method of cutting and burning

that allowed sunlight to penetrate into the ground and later with those ashes to enrich and sow in the same soil.

With the development of this work is intended to raise awareness in the first place to students, because the fact of being prepared in different educational institutions will be the viaduct to reach all those people, i.e.; to the man in general to treat this delicate and at the same time very serious subject on the DEFORESTATION, clarifying his doubts and questions; through advertising, news, activities, which are regulated by the competent authorities that, with their respective explanations, express their rules and regulations.

This monographic work is developed in four chapters, which are presented as follows:

Chapter I: Deforestation. Definition. Process. Generalities. Antiquity. Historical Stage, Present.

Chapter II: How deforestation affects the Ecuadorian population and the ecosystem, nowadays. Deforestation in South America. Ecuador. Deforestation affects the Ecuadorian population and the ecosystem today.

Chapter III: Causes and Consequences. Causes: The problem of the deforestation Esmeraldas case. Consequences.

Chapter IV: Plans and Recovery. Plans: Managements with the inhabitants. Programs. Recovery.

Chapter I

Deforestation

How deforestation affects the Ecuadorian population and the ecosystem, nowadays

1.1 Definition

From English deforestation, "the word deforestation allows naming to the action and effect of deforestation (to clear a land of its trees and plants). It is the disappearance of the forest masses". [CITATION Def18 \l 12298]

1.2 Process

At this point of the topic, refer to how the process of felling trees is triggered:

> Deforestation or logging is a process usually caused by human activity, in which the forest area is destroyed. It is directly caused by the action of people on nature, mainly due to logging or burning by the timber industry, as well as for obtaining land for agriculture, mining, and livestock. [CITATION Wik18 \l 12298]

1.3 Generalities

Deforestation devastates forests and jungles of Earth so demolishing causing enormous damage to soil productivity. Forests still cover approximately 30% of the world's regions.

Trees cut without a responsible reforestation result in serious damage to the habitat, such as the loss of biodiversity and aridity. It has an adverse impact on the fixation of carbon dioxide (CO2). Deforested regions tend to soil erosion and continuously degrade to non-productive land.

Cutting trees successively leads to the following factors:

- ☞ The neglect and ignorance of the issue of deforestation,
- ☞ The lack of attributed value,
- ☞ The ineffective management of afforestation and
- ☞ Unreliable environmental laws.

Not all deforestation is a consequence of intentionality. Some of its causes are between human and natural elements, natural ones such as forest fires and intensive grazing, can inhibit the growth of new tree shoots. [CITATION Wik18 \l 12298]

1.4 Antiquity

Since ancient times, "about eight thousand years ago, human beings began to cut forests in small but significant quantities, although for that purpose they only had flint axes." [CITATION Rud08 \p 135 \l 12298]

This means that, as it happened, the agriculture was expanding, the man cleaned the land of trees and shrubs he considered, to allow sunlight to reach the ground. This cleaning was done by the method of cutting and burning. Then, in one or two years, during the dry season, the fallen debris and dead trees were burned and in turn planted in the soil enriched with ashes.

In the six thousand years that go from prehistory to the beginning of the historical era, two thousand years ago, man was improving his tools to work the land by having axes and plows in the Bronze Age and then in the Iron Age, as well as oxen and domesticated horses that pulled the plows. These advances made agriculture gain land from the forest, which was cut down where it developed. [CITATION Wik181 \l 12298]

1.5 Historical Stage

In this paragraph, its author describes that:

> Two thousand years ago, in China, India, southern and western Europe and the Mediterranean Maghreb, as well as in the lowlands of Central America and the highlands of Peru, sophisticated agricultural practices were employed (diversified crops, multiple plantations and breeding of won). All of those regions are naturally forested, and large-scale agriculture demanded that these trees be felled. [CITATION Rud081 \p 136 \l 12298]

And, it also refers, [CITATION Rud082 \l 12298] that, in 1089, William the Conqueror ordered a study called Domesday, which consisted in a study of new empires in England, in which he demonstrated that 85% of the fields had been deforested, as well as 90% of the arable land that included altitude less than one thousand meters. In the industrial era, seven centuries earlier, Britain was completely deforested and many of its remaining forests were protected as hunting reserves for royalty and nobility.

Then, [CITATION Rud082 \l 12298], in his research shows that, in China, the first reliable census dates from the Han dynasty, two thousand years ago and that at that time the country had 57 million inhabitants, with a density that tripled that of England at the time of the Domesday study, reaching the conclusion that the countries of China, India, and Indonesia, were areas with a high volume of population and these were deforested for two thousand years.

1.5.1 XV and XVI Centuries.

At the beginning of these centuries, the process of deforestation or logging was not as well known; but as he states, [CITATION Jor06 \l 12298] in his thesis, the islands of the Caribbean, part of Mexico and Central America, had great forest wealth, had different types of wood among which most liked were mahogany and palo maría, and others more. This is how, when the Spaniards arrived in America, everything changed, the exploitation of the forests began, with the purpose of using them in the construction and extraction of dye chemicals, as well as in fuels. In this way the Spanish Royals, faced with this dangerous increase in the consumption of trees, announced laws to regulate the use of forests and not compromise the environment.

1.6 Present

Currently, deforestation is the destruction of millions of hectares of forests that each year exceeds by human action. Thus, [CITATION Sal14 \l 12298] expresses that, when executing the fellings or burning of the trees, it is approximately equivalent to one surface of a football field

every two seconds. Many times, logging is executed without imagining that it is harmful. And although the reason for this action is immoderate, the ends are with money or the need for community members to support their families.

Deforestation is advancing by leaps and bounds of approximately 17 million hectares per year, compared with the area that exceeds that of England, Wales and Northern Ireland combined. It is losing the lushest and beautiful tropical forests. Deforestation has many events and negative effects of nature. The most dramatic impact is the habitat loss of millions of species. Seventy percent of animals and plants inhabit the forests of the Earth and many cannot survive the deforestation that destroys their environment.

Chapter II

How deforestation affects the Ecuadorian population and the ecosystem, nowadays

2.1 Deforestation in South America

Considering that deforestation affects the population and the ecosystem in general nowadays, the investigations of the experts in the matter reveal that, in South America, it contains 22% of the world's forest area. Where is the Amazon basin with much of the tropical rain forest in the world. And, that a, the indigenous peoples, in the last 20 years, have been legalized and recognized the forests as their property, these are: Peru, 6400 million hectares; Bolivia, 1200 million hectares; Brazil, 10 300 million hectares; Colombia, 27 million hectares; Ecuador, 4.5 million hectares and Guyana, 1.4 million hectares of land.

Unfortunately, the indigenous peoples, although with their rights granted by the competent authorities, often do not need any explanation about the rules and regulations, since sometimes for this reason there are disturbances and misunderstandings with the exploitation excessive forest and can not calculate how much damage they do to the ecosystem in general.

It is worth mentioning that, in the Latin American region between 2000 and 2010, it lost approximately 64 million hectares, which is equivalent to 7% of the jungle area that surrounds it, that is, an estimated one third of the world's deforestation. And that, between 2000 and 2005, the South American countries registered forest losses; but, with the difference between the countries of Chile and Uruguay, which showed positive and encouraging news as a result of programs in favor of large-scale industrial plantation.

Then, Argentina with Uruguay as a whole, new plantations are likely to arise, which could compensate for the disappearance of natural forests, although not for the ecosystem area, but rather, for the use of manufacturing.

However, if the necessary measures are not taken, it can occur as:

> In the case of the countries that are part of the Northern Region of Latin America, such as Ecuador, Colombia and Venezuela, protection policies for forest areas are not strict and deforestation persists, threatening the ecological and climatic balance of h America of the South, and may have global repercussions, so says it [CITATION Cos10 \l 12298].

2.2 Ecuador

2.2.1 Denomination.

Officially called the Republic of Ecuador, because the country crosses the imaginary line called Ecuador, and this in turn divides the earth into two hemispheres: North and South.

2.2.2 Capital and most populated city.

The capital of Ecuador is the city of Quito, and the most populated city is Guayaquil.

2.2.3 Location.

It is a Latin American country located in the Northwest of South America.

2.2.4 Límits.

Its limits are the following: North with Colombia, South and east with Peru and west with the Pacific Ocean.

2.2.5 Superficie.

Ecuador occupies a total area of 283,561 km2, it is the fourth smallest country in the subcontinent. On land: 276,841 km2, in water: 6,720 km2. This data also includes the Galapagos Islands.

2.2.6 Galapagos Islands.

The Pacific Ocean separates the Galapagos Islands from the Ecuadorian continental territory, however, it belongs to them, they are located at 1000 kilometers, ranging from Puntilla de Santa Elena to San Cristobal Island.

2.2.7 Climate.

The climate of the Ecuadorian territory is varied according to its regions: Tropical along the coast, becoming cooler inland at higher elevations; tropical in the lowlands of the Amazon rainforest.

2.2.8 Ground.

Coastal plain (coast), elevated inter-Andean central lands (sierra) and eastern jungle (east).

2.2.9 Elevation.

The referred volcanic section is to the Cordillera de los Andes, dividing the territory from north to south, leaving its western flank to the Gulf of Guayaquil with a wooded plain, and to the east the Amazon.

2.2.10 Population.

It is the tenth most populous country in America, with approximately 16 million inhabitants, the most densely populated in South America and the fifth largest in the continent.

2.2.11 Natural resources.

The natural resources of the country are: Petroleum, fish, wood, hydroelectric energy.

2.2.12 Land use.

For the use of the land, it is divided as follows:

agricultural land: 29.7%

Arable land: 4.7%

Permanent crops: 5.6%

permanent pastures: 19.4%

Forest: 38.9%

others: 31.4% (2011 est.)

2.2.13 Naturals Hazards.

The natural hazards are: frequent earthquakes; landslides; volcanic activity; floods; periodic droughts.

2.2.14 Environment - current issues.

Regarding the environment, the most current issues are: deforestation; soil erosion; desertification; water contamination; contamination by waste from oil production in ecologically sensitive areas of the Amazon basin and the Galapagos Islands.

2.3 Deforestation affects the Ecuadorian population and the ecosystem today

In Latin America, Ecuador is one of the countries of South America with more variety of trees, for having an excellent climate contrast of its territory, because its location is in the center of the world. The country has about 9.6 million hectares of primary forests the ecosystems range from the Andean páramo to the humid tropical Amazon, where the Yasuní park is located, considered by the experts as the most biodiverse area in the world; but what is uncertain at what rate loses that wealth.

2.3.1 Affectation to the Ecuadorian population.

The Organization for Food and Agriculture of the ONU (FAO), manifested through a report of the year 2011 estimated the annual loss of forest mass of almost 200,000 hectares,

based on satellite data from the Center for Integrated Natural Resources Surveys by Remote Sensors (CLIRSEN) of the year 2000. According to FAO, for its acronym in English (Food and Agriculture Organization), Ecuador has a decline of 1.8% per year of primary forests, the highest rate in Latin America, which recorded an average reduction of 04% per year, while worldwide it was 01%. [CITATION Dia11 \l 12298]

On the other hand, the government of shift that was in the year 2011, calculated:

> A much smaller loss than that estimated by the FAO, of about 62,000 hectares per year, and expresses textually, that: "We have an information gap that will surely make us raise this rate, probably to 70,000 maybe, but it is not as we thought ten years ago", explained to Efe (Company and Agency of International News in Spain) the manager of the program Socio Bosque, of the Ministry of the Environment, Max Lascano; where also, he said: "the main threat is the change of land use" and "then livestock and extractive activities".
> [CITATION Dia11 \l 12298]

Meanwhile, the executive director in Ecuador of the ONG International Nature and Culture, Renzo Paladines, remarked, "A family of settlers from the highlands arrives in the Amazon, cuts what they can work according to the number of children they have, 5-10 hectares, replaced by grasslands and other forest makes selective logging "

For the executive director of the Sustainable Forest Management Corporation (COMAFORS), Juan Carlos Palacios, the ONG in Ecuador, points out the illegal logging of the timber retail sectors, considering that:

"Sawmills collect boards and planks, and this is sold to the retailer, as a builder who can go and buy a hundred tables," specified Palacios, who pointed out that "it is easier to

control 10 important companies" than to monitor "50,000 carpentry" so they do not work with illegal Wood.

The wood industry of Ecuador, the figures it generates are around 800 million dollars a year, which at the monetary level looks attractive; But, Natalia Bonilla, in charge of the forest program of the ONG Ecological Action, said that the loss of forests also causes social conflict, since "there are large numbers of populations that depend economically" on them. In conclusion, if they run out of forests, families "impoverish" and migrate to cities where "they are part of the proletarian masses, or fall even in crime or prostitution," the ecologist said.

2.3.2 Ecosystem, nowadays.

On the planet earth there is a variety of jungles in general and these comprise among the most diverse, ancient and complex ecosystems. In an interview with the renowned Norman Myers biologist, he says: "The jungle is the most exquisite creation of nature that exists on the planet." These forests, reach less than 2% of the total surface of the Earth and 7% of its solid surface. It is estimated that, despite the bad practice of logging in forests, they are home to about 50% of all terrestrial life forms. However, [CITATION Hal18 \l 12298] he says in his document: unfortunately, it is being destroyed by the abuse and excessive carelessness of those who apparently believe they are owners, which as a result show a blindness that is certainly alarming. If deforestation continues at the pace it is currently

going, scientists' studies predict that by the year 2030, the total amount of forests will almost disappear and, therefore, everything that implies or consists of it.

Ecuador, a country that previously "had 270,000 square kilometers, owned 132,000 square kilometers of forest. With an annual deforestation rate of 4%, there are only 44,000 square kilometers left. When we consider that 3,000 square kilometers are deforested every year " [CITATION Hal18 \l 12298]

Ecuador is facing serious dangers with deforestation and with it, the loss of endemic species due to the erroneous elimination of their trees.

Chapter III

Causes and Consequences

Due to deforestation, globally we are losing:

In hectares of forests:

Per second, 1 hectare (equivalent to two football fields).

Per day, 86,000 hectares (equivalent to the size of New York City).

Per year, 31 million hectares (equivalent to the size of Poland).

Endangered species:

The specialized scientists in this branch estimate that, approximately 137 species are being put to extinction EVERY DAY, because of deforestation, this refers to 50,000 each year. This means that approximately 149 acres of jungle have been destroyed and along with this terrible execution, about 6 species will cease to exist. [CITATION Hal18 \l 12298]

In Ecuador, deforestation eliminates more dry forest than climate change. According to [CITATION FAO18 \l 12298], the studies reveal the loss of dry forests due to misuse of the land and with this, global warming. In the southwest of the country, in the region of Tumbes-Chocó-Magdalena, it has a great magnitude of singular dry forests. These forests provide not only wood and non-wood products, but also important ecosystem areas that regulate the water balance and protect the soil from erosion.

However, the supports zone a large habitat imbalance due to deforestation for productive and grazing lands. The predicted scenario is the harmful effects and begin to be noticed in the increase of the temperature, without the arboreal species caused by the extreme deforestation.

3.1 Causes

Although many times, the process of extinction can be natural, the alarming thing is that the existing accelerated pace, is induced by the hand of man, that only for the monetary make this negative procedure against the earth, against nature, against creation. Maybe if, in the same way that they cut down the forests they reforest them, there would not be so much harmful effect on the environment. The experts in this topic agree that:

The main cause of the extinction is the destruction of the natural habitat of the species.

The most common causes of destruction of natural habitats are: logging for the wood industry, grazing, mining, oil extraction, dams for hydroelectric and subsistence agriculture.

The indirect causes are those threats that forests are continually facing. This point refers to the emigration of rural towns to large cities, which turns this into urban expansion, colonization, residential complexes, etc., and seeing this situation the construction companies execute deforestation to expand business.

Reasons why it is given, is not planning, and have the support of international lenders such as the World Bank, and large consumers of the industrialized nations that finance all this, without reflecting on the damage they are doing to the nature.

3.1.1 The problem of the deforestation Esmeraldas case.

3.1.1.1 Esmeraldas province.

The Province of Esmeraldas is one of the 24 provinces that make up the Republic of Ecuador, located in the geographical zone of the coastal region or coast. Its capital is the Esmeraldas city, which has the largest and most populated. It occupies a territory of about 14,893 km², being the seventh province of the country by extension. It limits to the east with Carchi and Imbabura, to the south with Santo Domingo de los Tsáchilas and Manabí, to the southeast with Pichincha, to the north with the Province of Tumaco-Barbacoas, of the department of Nariño belonging to Colombia, and to the west and north with the Pacific Ocean, along a maritime strip of about 230 kilometers.

3.1.1.2 Deforestation of the Esmeraldas case.

In the document of the [CITATION FAO13 \l 12298] states that: "According to data from the Ministry of Environment, the rate of national deforestation is 65,880 hectares per year, of which 12,485 hectares correspond to Esmeraldas, surpassing the average per province, which it registers around 3,000 hectares".

The issue is of vital importance so that control of the exploitation of native forests, mangroves, has led to take action with a series of efforts to confiscate wood throughout the country and remove shrimpers equipment if the case warrants. For the director of the Corporation of Sustainable Management (Comafors), Juan Carlos Palacios, said that he is working with the people of Esmeraldas including the inhabitants of various communities, to initiate the procedures of forest plantations and sustainable management of native forest resources.

An additional indication of the director of the Comafor is:

> Deforestation, according to Palacios, has to do to a lesser extent with the issue of wood, is rather directed to the change of land use. The problem is generated when forests have already been cleared -even without using wood- without making sustainable forest management. [CITATION FAO13 \l 12298]

3.2 Consequences

For this reason, it is observed that "the phenomenon of deforestation or loss of vegetation cover, more than a simple definition and explanation, produces many and diverse consequences, mainly as contamination and elimination of wildlife", according to research by the Ecuadorian biologist [CITATION Tuf09 \l 12298].

The consequences are not as important as they appear to be, on the contrary, they are very palpable:

> Deforestation is also a contributory factor of climate change. The soils of the forests are humid, but without the protection of the tree cover, they dry quickly. Trees also help perpetuate the hydrological cycle by returning water vapor to the atmosphere. Without trees that play that role, many jungles and forests can quickly become arid deserts of barren land.
>
> The elimination of the vegetal layer takes to the forests and jungles of its natural, that block the solar rays during the day and maintain the heat during the night. This disorder contributes to the appearance of more extreme temperature changes that can be harmful to plants and animals. Trees play a crucial role in the absorption of greenhouse gases, responsible for global warming. Having less forests means emitting more greenhouse gases into the atmosphere and a greater speed and severity of climate change.
>
> [CITATION Nat10 \l 12298]

That is to say, by having these changes in the atmosphere, other consequences that are added is that the sun's rays penetrate more easily causing also in the human being many problems in terms of external health such as in the skin and other senses, for example, in the vision.

Being, directly connected to this series of destruction; We have the responsibility to preserve and the possibility of suing all these companies that overflow the natural resources of the planet.

Chapter IV

Plans and Recovery

Deforestation is the action of eliminating entire forests, according to [CITATION Hal18 \l 12298], if these destroyed forests were reforested in the same way, with this perspective a responsible and sustainable management is being executed, controlling by taking their products as much fruit, latex and wood. Some international organizations are collaborating in attributing with sustainable recovery plans, for the wellbeing of the ecosystem.

4.1 Plans

The plans would begin to work, as reported in the document of the [CITATION FAO13 \l 12298] with sectors where Forest Incentive Projects are promoted in conjunction with the Ministry of Agriculture, to control the magnitude of the problem against the felling of wood illegal; another plan that could be executed is programs so that the change of land use is subject to continuous supervision and apply the legislation according to the State regulations, when damage to the ecosystem is observed in extreme case.

4.1.1 Managements with the inhabitants.

Palacios, director of the Comafors says that the problem must be overcome:

> When considering that the small producer is a potential delinquent and that the tables he extracted, they did it illegally. That criterion would be wrong, because according to the expert, the people who intend to live off the land

want to do programs of reforestation and sustainable management of the native forest. In this last case it is about extensions of between 30 and 100 hectares in which 4 to 6 mature trees are used, leaving the rest as forest. [CITATION FAO13 \l 12298]

For example, in the sector of the Santiago-Cayapas River in Esmeraldas the inhabitants of that community are integrated into afforestation and reforestation programs. That is, they maintain a positive relationship with this activity.

4.1.2 Programs.

In the previous government, the Ec. Rafael Correa, developed the Socio Bosque program, approximately in the year 2008, where economic stimuli were provided to the inhabitants of the communities that by their own interest were involved in protecting the native forests. The provinces with the highest income from economic stimuli of the program, at that time were Morona Santiago, Esmeraldas, Sucumbíos and Pastaza. In total, about 7.6 million were destined annually for the whole country.

4.2 Recovery

The recovery of the jungles for our country and perhaps for the world, the [CITATION Nat10 \l 12298], suggests that "The fastest solution to deforestation is simply to interrupt the cutting of trees. Although the pace of deforestation has slowed somewhat in recent years, the current financial realities make this solution an unlikely alternative".

Another idea that gives us is:

The most viable solution would be to manage plant resources carefully by eliminating agricultural clearings to ensure that forest environments remain intact. The felling must be done in a balanced way by planting enough young trees to replace the oldest trees in all the forests and jungles. The number of new tree plantations increases every year, but the total still equals a tiny part of the planet's forest area. [CITATION Nat10 \l 12298]

Conclusions

This monographic work ends with the following conclusions:

A. Deforestation is the action and effect of deforest. (cutting trees).
B. It is a process usually caused by human action, although it could also be caused by nature.
C. Deforestation destroys the forest area to obtain land for agriculture, mining and livestock.
D. When cutting trees successively it leads to factors of: neglect and ignorance to the theme of deforestation, the lack of attributed value, the little responsible handling of afforestation; and, unreliable environmental laws.
E. Ecuador is one of the countries in South America with more variety of trees for having an excellent climate contrast in its territory.
F. Ecuador is considered by experts as the most biodiverse area in the world; but that is uncertain at what rate he loses that wealth.
G. If deforestation continues in the country, scientific studies predict that by the year 2030, the total amount of forests will almost disappear and therefore everything that implies or consists of it.
H. Due to global deforestation, we are losing hectares of forests, including the extinction of species.
I. The clearing of forests without reforestation would have such a harmful effect on the ecosystem, causing: the destruction of natural habitat, the cutting of trees for industry and agricultural subsistence would become so common and those threats that forests are constantly facing the construction companies to expand their businesses; although at this point you could qualify between positive and negative.
J. The soils of the forests are humid, without the tree cover they can quickly become arid deserts of barren land.

K. The authorities related to the subject, refer that there are continuous supervisions according to the regulations of the Ecuadorian State.

Recommendations

This monographic work ends with the following recommendations:

- Given the deforestation situation that the world is going through today, including

  Ecuador; We must take very serious and important decisions and actions to counteract

  this negative execution.
- Solving the issue of deforestation, the fastest way is, simply stop cutting trees.
- Explain the concept of deforestation to children since they start school stage.
- Implement in schools as a general culture for students to analyze the consequences of

  deforestation of forests in the ecosystem.
- Carry out deforestation with responsible and sustainable management; that is, if you cut

  a tree to reforest or plant a new root or seed to ensure that forest environments remain

  intact.
- Always remember that forests are a source of oxygen for the organism of all living

  beings.
- Trees help with their hydrological cycle to return water vapor to the atmosphere.
- Forests regulate the climate of the planet.
- Know that being together to a tree transmits energy and well-being; that is, they emit

  positive vibrations to every living being.
- Encourage people in general to care for and conserve forests, as it is a benefit that

  nature provides.

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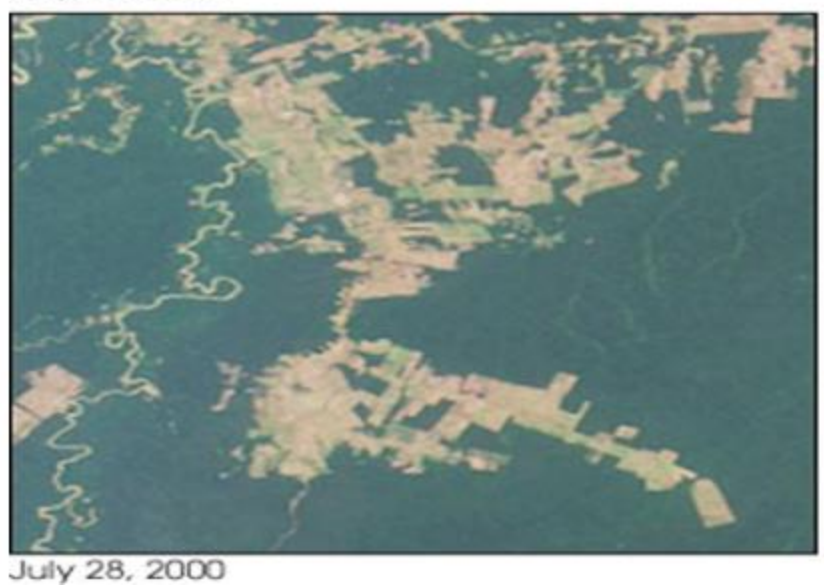
July 28, 2000



July 28, 2000

June 29, 2001

Figure 1: Deforestation between July 28, 2000 and June 29, 2001

Source: https://photojournal.jpl.nasa.gov/catalog/PIA03427

Figure 2: Deforestation. Historical Stage. Spain

Source: www.nuevatribuna.es/articulo/cultura---ocio/deforestacion-espana-moderna/

Figure 3: XV and XVI Centuries

Source: http://historiaviajeseneltiempo.blogspot.com/

Annex II **Of the Chapter II**

Figure 4: Burned forest for agriculture, South of Mexico

Source: Jami Dwyer. https://www.flickr.com/photos/74281168@N00/173937750/

Figure 5: Map of South America (1) and Ecuador (2)

Source (1): http://2.bp.blogspot.com/-_5VFZ2lQ6Kk/UinV__h1n6I/AAAAAAAAUuQ/NHBgbmBe-Ls/s1600/ecuador_mapa.jpg

Source (2): [CITATION Oro16 \l 12298]

Annex III **Of the Chapter III**

Figure 6: *Pitajo of Tumbes, native bird dry forest, northwest South America*
Source: *[CITATION FAO181 \l 12298]*

Figure 7: *Why do forests disappear?*
Source: [CITATION Tuf09 \l 12298].

Annex IV Of the Chapter IV

Figure 8: *Deforestation in Ecuador: An impression of Rafael Correa*
Source: [CITATION Aré15 \l 12298]

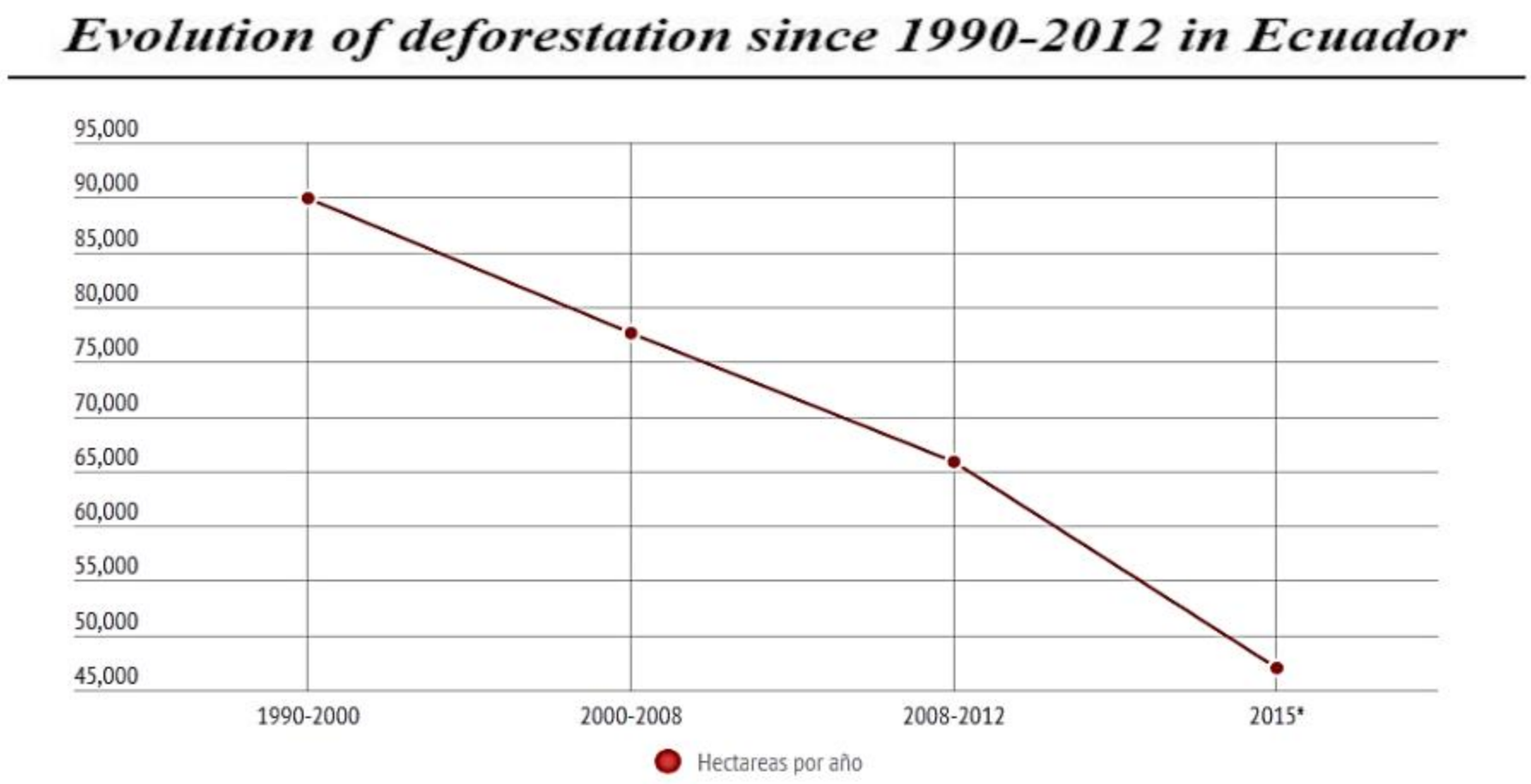


Figure 9: *Evolution of deforestation since 1990-2012 in Ecuador*
Source: National Plan for Forest Restoration 2014-2017, Ministry of the Environment

Evolution of reforestation in Ecuador since 2010 - 2017

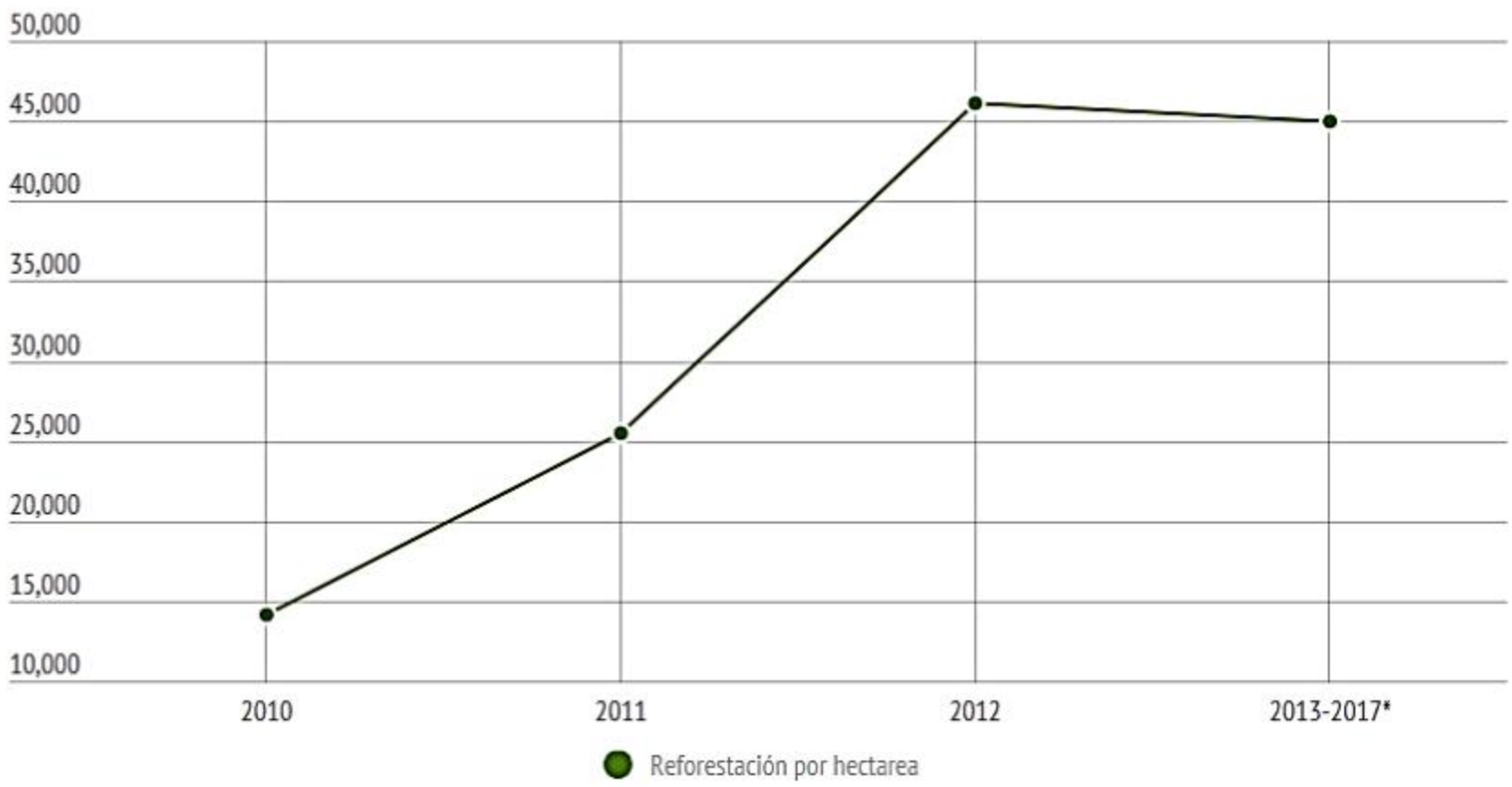


Figure 10: *Evolution of reforestation in Ecuador since 2010-2017*
Source: National Forestry Reforestation Plan 2013-2017, Ministry of Environment

Annex V **Of the Chapter II**

Table 1

Legalized Forests as property of Indigenous Peoples, South America

Countries	Hectares
Brazil	10.300 millons
Perú	6.400 millons
Bolivia	1.200 millons
Colombia	27 millons
Ecuador	4.5 millons
Guyana	1.4 millons

Source: [CITATION FAO09 \l 12298]

Table 2

Elevation of the Ecuadorian territory

Average Elevation	1 117 meters
Lifting ends:	
Lowest point	Pacific Ocean 0 m
Highest point	Chimborazo 6 267 m

Source: [CITATION Oro16 \l 12298]

Table 3

Land use

Division	Subdivision
Agricultural land: 29.7%	Arable land: 4.7%
	Permanent crops: 5.6%
	Permanent grassland: 19.4%
Forest: 38.9%	
Others: 31.4% (2011)	

Source: [CITATION Oro16 \l 12298]

Table 4

The jungles in the ecosystem of our planet

Surface	Percentage
Total of the land	Cover less than 2%
Solid	Covers 7%
Terrestrial life forms	About 50%

Source:[CITATION Hal181 \l 12298]

Table 5

The jungles in Ecuador

Description	Square Kilometers
Country	270 000 (previous)
Jungle	132 000 (before)
Deforestation	4% (annual)
are left	44 000
Every year deforest	3 000

Source:[CITATION Hal181 \l 12298]