

HOW TO SAVE THE AMAZON RAINFOREST



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Introduction

I have to be very honest about the aim of this book. The aim of this book is not only to explain the current situation of the Amazon rainforest and in general of the main inter-tropical rainforests.

I want to describe a project that I think could be able to stop or contain the destruction of an entire ecosystem.

If you want to read the proposed project without further introduction, you can skip this part and go straight to the section “The Project”; however, it is highly recommended to read these previous sections and in particular the section “A Focus” to understand the roots of the problems that this project aims to solve: civil exploitation and roads. If there is an interest to collaborate and get involved, read the section “Epilogue”.

During the book, it will be provided a to date picture of the Amazon rainforest, the main protagonists, the role of “indigenous” people and why in most of the cases the cost/productive efficiency of the damaging of the forest is not efficient and convenient at all and couldn’t ever compete with the same activities elsewhere.

Will be also given a distinction between industrial and civil exploitation: both of them are important to be understood, distinguished and highlighted because, in different ways, they are both dangerous and critical. The main solution proposed is aimed to face the civil exploitation.

This book is intended to be first step for the foundation of a non-profit (or partial non-profit) company aimed to make a difference in the fight against the climate change. In my opinion, the solutions again big challenges like this should be real, practical, studied with a scientific approach to the problem: protesting and waiting for someone else to do something, protesting requiring an action without proposing an action and without proposing solutions for modern problems is not a solution and never will be. This book is a first step because it aims to introduce the project to as many people as possible, looking for enthusiasts, volunteers and organizations that aim to do the good to join this kind of “open source” project and “open source” company.

Introducing this book, I also want to assert that, in my opinion, the only way to do something for the environment (or for the people, in general for any problematic situation) is through the technology, the innovation and the economy. Without at least one of these, any proposed solution is almost always intended for failure or for short period effects.

Our world is run by economy and this is a fact, that’s why it would be absurd to not consider it: if you don’t provide an efficient replacement to the businesses that are now exploiting the environment, you will find out that it is nearly impossible to succeed, have a long lasting effect and be happily accepted by the local communities and the local governments. That’s why you can’t pretend people to leave their jobs for the environment without giving them an alternative and that’s why it is so difficult to make the local and state governments protect

the rainforest. Economy can find an alternative and make possible an overall agreement that makes convenient protect the environment for everyone (local people, local communities, local governments, state governments).

On the other side, nowadays we have the means to make any idea and plan efficient thanks to the present technology and its fast innovative potential. That's why it would be unthinkable to make anything without the help of it.

From control, to interactive security, to efficiency optimization, to fast emergency action and problem solving, to social presence and sensibilization, to global and community involvement, to logistics and distribution intelligence for the products, to advertise the successes and convince the communities on the edge of the Amazon rainforest to join the project and convert their exploiting based economies to a sustainable circular and more profitable economy.

Any project to improve the world should always consider the nature of the humankind. The most important thing is that if there is nothing to eat or any possibility to improve their lives, people will not consider any ideal or any pro-environment activity and if they do, it will be just for the circumstances and for a temporary earning (for example if you pay a former woodcutter to take tourists in Amazon tours, but you pay him just a little more than what he earned as woodcutter, he will not cut trees only because taking tourists around is easier, not because in this way the forest will remain conserved, so when there are not enough tourists, he will become again a

woodcutter; a good project shall give welfare to an entire community as long as education means, only then the meaning and the importance of the project and the conservation can be fully understood.

It is really similar talking about the relation between the project and the local governments: if the income and the production are enough to replace the current state of things, the governments will stop boosting traditional exploitation and will not impede an equally or more profitable change.

The description of the current rainforests situation will focus on the Amazon rainforest situation describing general aspects and current damaging situations, in particular about Ecuador rainforest (since I elaborated this travelling through the edges of that country rainforest and since I particularly saw the changes there during the last decade and lived the situations and the changes being half Ecuatorian from mother; being also half European and having lived most in Europe and having travelled a lot around the world, helped me to see things from another point of view).

An year of Ups and Downs for the Amazon rainforest

2019 (year in which this book has begun to be written) has been an highlighted year for the Amazon rainforest.

There have been significant victories and important losses for the environment.

As always, the losses always score a more significant importance in the world we live in as most of them produce permanent scars, while the victories sometimes are not forever-lasting or forever-remembered or simply even worldwide known (sometimes a good action or good idea doesn't have the proper space on the news and sometimes it is not considered at all, giving preference to bad news that can reach a bigger audience; it is also the case of the topic of this book that has been scarcely heard and understood by news channels and even by the environmental organizations, and this is deeply paradoxical and difficult to accept).

Among the victories in 2019, it is a duty to remember the Waorani victory against the Ecuadorian government that could prevent the auction of half a million acres from being earmarked for oil drilling and also disrupting the contemplated auctioning of 16 oil blocks that cover over 7 million acres of indigenous territory by providing an invaluable legal precedent for other indigenous nations across the Ecuadorian Amazon.

The Waorani are a native population of the Amazonian Region of Ecuador (Napo, Orellana, and Pastaza Provinces) who have

marked differences from other ethnic groups from Ecuador (in the past they are also been known as “Auca”, a pejorative exonym used by the neighboring Quechua native people). They comprise almost 4,000 inhabitants and speak the Huaorani language, a linguistic isolate that is not known to be related to any other language. Their ancestral lands are located between the Curaray and Napo rivers, about 50 miles (80 km) south of El Coca. These homelands are always been threatened by oil exploration and illegal logging practices. Until now, Waorani people were able to protect their culture and lands from both indigenous enemies and settlers. Some Waorani communities decided to reject all contact with the outside-rainforest world and continue to move inside the forest, living on what it gives to them. “Waorani” means “We are people”.

The Waorani victory marked an important success for the conservation, but also because of the fact that made everyone conscious that if even a little group of people could defend such a big land, a bigger group of people could do much more.

This is not the only victory for the environment this year, however as said the losses are much louder than little and temporary victories. Among the good actions made in these years are valid to be remembered and thanked all the organizations that encourage alternative and sustainable local economies with solidal trades and “community” tourism: their victories are the successes of these projects (some are related to the direct exportation of local products like chocolate, coffee and tea produced with an eye to the conservation; some boost local manufacture and give it value, opening to the communities

a global and careful market; some take tourists to the communities, which are asked to follow conservation standards for their lands).

If I had to list all the losses that this year has seen, I would need an entire book; even worse if I had to list the ones of this decade or of the last 20 years. Apart from painful, a detailed description would be too long to be made.

This year saw an unprecedented size wildfires destruction across the Amazon rainforest, even though the wildfires problem, due to raising temperatures, exceedingly dryness and human interests and negligence, have been a worldwide issue: Australia has been the most affected area of the world, where millions of animals died, an entire ecosystem annihilated, along with people dispersed and their homes completely destroyed, up to the date when this book has been written the fires have not been stopped and the disaster is getting everyday bigger and bigger; then also California has been devastated by wildfires. The human negligence is always the core reason of the intensification of this climate circumstances that make it easy for a situation to get worse. However, human negligence has not only an indirect responsibility on the problem, but sometimes also a direct one: some people make illegal wildfires, some people throw lighted cigarettes on dry bushes but the main human-caused reason that induce wildfires is the following and is the main one in the Amazon rainforest: people set fire to lots on the edge of the rainforest to clear the land for cattle and/or agriculture (most of the agriculture aiming to feed the cattle too), this practice has been intensifying during the

last three decades and generally intended to limited areas of land, but the circumstances of drought, heat waves and wind in these last years made the fires losing control and extend themselves to huge and terrible sizes.



One of the main problems of this “method” is that the land is immediately used and is given no possibility to the forest to grow again, unlike accidental or natural fires.



A Focus

The Amazon rainforest (similar to other rainforests and areas around the world) is very rich of natural resources. The main natural resources are mainly oil, gold and silver (in the African Congo River basin rainforest for example there is less oil but there are diamonds and Coltan). The wood has always been considered a natural resource and times ago been consistently used, but nowadays it is not the main cause of the deforestation in the Amazon rainforest; the wood is a natural resource that could be thought as “retail” exploited: only some kind of trees are considered “good, valuable and useful” and there are not large areas with just one kind of tree and there are thousands of tree species, as a consequence when a “good” tree wood is required, one tree is taken out from the forest; the tree or the bunch of trees could be 100, 200 or 400 meters inside the rainforest: to take it/them everything on the way is destroyed and a line across the forest is deforested.

But there are some other natural resources that are less considered but are the most important to be protected to be able to protect the environment. The water and the land. The Amazon rainforest is sometimes thought like a kind of “no one land” by settlers; also local governments think the same and that’s why “give” lands to whom wants to exploit and use them or encourage people to occupy territories on the edge of the rainforest. The water is obviously fundamental for any process: from industry to agriculture any process needs water, a lot of water; the rainforest has a lot of it: it rains frequently (it is to be noted that the more the Amazon rainforest is destroyed, the

less clouds will be generated over land and the less it will rain; even worse if you also consider the worsening, over-heating and drought climate change effect), there are large and numerous rivers and the aquifer layer is quite close to surface. These two natural resources make it easy to understand why so much land is easily cleared for cattle, agriculture and mining. Obviously the territory of the Amazon rainforest is not all the same; there are places where is more difficult to clear or work a land for agriculture due to the presence of hills or short mountain ranges, making them more protected from agriculture exploitation (but absolutely not from mining), but in general most of the territories are easy to enter and clear completely (even easier after a wildfire).

It is important to make an important distinction between **industrial and civil exploitation**.

For industrial exploitation I mean the exploitation leaded by big industries and companies whose permission to work in the Amazon rainforest is directly discussed and approved by the government of the country, so it's a kind of "high-level" bargaining between them. Sometimes this negotiation is even reserved and hard to be stopped or even hard to be known in advance by people. Generally this kind of exploitation oil and gas, industrial legal mining and energy production (like the big hydroelectric power plants and their water reservoirs built in the Brazil Amazon rainforest). An exception takes place in Brazil where in some agriculture is an industrial exploitation:

agriculture to produce hydrocarbons and extensive agriculture for exportation (like soy exported to China).

The industrial exploitation is obviously one of the main actors of the rainforest damaging. It is hard to be stopped, or even controlled from outside: most of the times the plants are military guarded and if any problem comes out inside the plant or in the process, the corruption towards local politicians and newspapers will say nothing for years. The scars made to the rainforest by this kind of exploitation are mostly permanent and sometimes irreversible. The accidents have been countless and they are both accidental and due to human negligence (maybe were not made the security and safety proceedings that should have been taken, or an accident has been hid for too long): oil leaks can be a big threat for the environment and for the people (to be remembered the disaster caused by the voluntary negligence of Chevron/Texaco in the region of Sucumbios, Ecuador, not respecting the safety environmental standard voluntarily, spilling millions of gallons of oil and chemical on the ground and the rivers between the 70s and the 90s, burning all the gas under the ground instead of putting them back as usually made to reduce the environment impact, being named the Amazon Cernobyl that hurt consistently the ecosystem), but also the road and the facilities built to get to the plant; however the biggest threat for the natural environment are the accidents linked to mining like leak of refinement or disposal processes chemicals (to be remembered the accident in 2015 on the Rio Doce in the Brazilian state of Minas Gerais in which a wall of some pools of chemical disposal

broke and the chemicals entered in the river, killing literally everything on its way to the ocean; it happened again at the beginning of 2019 again in Minas Gerais where died also more than 150 people) and the complete destruction of hills, mountains and entire pieces of lands opened and caved.

These industrial plants are extremely profitable for their companies and for the governments, that's why are very difficult to stop. It is only possible to avoid them to be built or if impossible it should be a duty to, at least, pretend that this plants are going to be sustainable (as much as possible) and safe for the environment (these two must be conditions and are possible now because the nowadays technology makes it possible and gives no excuses to accidents, fails or insufficient safety measures).

For civil exploitation I mean any other exploitation not mentioned above. Specifically, it is guided by civilians as individuals or as little or medium size societies or farms. Sometimes this exploitation is also made by part of local and native communities. Generally, we can classify this exploitation in three groups: **legal, illegal and not legally defined**. All three, in my opinion, are equally dangerous and problematic.

The legal ones are the agriculture with a permission to deforest or buying the land, the cattle breeding, the construction of houses, waterparks, urbanizations and hotels, the woodcut with permission, the hunting and fishing with permission, the woodcut with permission and the mining of sand and stones for construction with permission.

The illegal ones are woodcut in natural reserves without a permission, gold, silver and copper mining (private mining is maybe one of the most and periodic polluting process because is made by individuals who have poor means to work mainly the gold; being completely illegal it is largely persecuted, so the miners settle in temporary housing, temporary camps, are armed from head to toe and use toxic and cheap chemicals to work the gold, releasing then them directly into the rivers), the farming and the processing of drugs, the hunting and poaching in a natural reserve, the poaching of protected species, the fishing with unethical means like explosives.

The “not legally defined” group of activities is a group of activities that would anywhere else considered illegal, but on the Amazon rainforest edges are mostly unpunished, uncontrolled, accepted and legalized after they are done; they are: agriculture occupying and deforesting a land without asking permission (for example after a fire, that has been probably set by the same farmers), cattle breeding on the land earned through occupation and fire, the construction of houses without a permission, the hunting and poaching in a part of the rainforest that is not natural reserve or that is on its edge, woodcut in a part of the rainforest that is not natural reserve or that is on its edge. It is to be understood that there is a so big not legally defined range of activities because there is the need for local population to have some kind of income and do not know how expensive and dangerous it can be for themselves, there is the aim of local administration (and sometimes state

governments, but not always) to encourage the local economic growth and prevent the areas to be left and lose population.

Even though the most dangerous and toxic activity (apart from the drugs farming and processing, of course, that it is also a difficult to be fought one and it is a big issue that is not intended to be discussed in this text) is the private mining (also because is as dangerous as the drugs farming for the surrounding communities, since the miners do not hesitate to use violence), the most damaging for the Amazon rainforest activity among these is the agriculture because occupies and uses the biggest territory among the listed activities, because the agriculture essence is linked to the ongoing occupation of land and the massive usage of water that are the same essence of the rainforest (and of course the agriculture and the rainforest cannot exist at the same time on the same land), because the land is cleared for agriculture and cattle breeding/ranching through the most destructive existing way (that cannot be controlled and that gives no possibility to any vegetal or animal species to survive or re-born), because there is no possibility for any resource exploited to restore itself, because the change of local environment and vegetation (from dense tree and bush vegetation to medium-low tall seasonal plants, like from forest to corn field or soy plantation) changes the climate of region (forests help to “generate” clouds that discharge rain on the forest, but also generate humidity that is taken far away by currents: this generates a climate both over the forest and far away where the humidity is taken, without forest the climate changes in both places with heavy consequences), because the

large quantity of water used for agriculture is returned to the environment not with the same quality but full of chemicals (whose utilization could maybe be limited anywhere else but not in places so far and isolated from big cities and where there is a “not legally defined” range of action for anyone who wants to act improperly without facing any legal consequences). Most of the agriculture is lead by cattle breeding. We can assume agriculture and cattle breeding as “farming”, also because as just said most of agriculture is required for cattle breeding with the “pasto” (as the plants grown are called in Spanish speaking coutries) or corn or soy. Cattle breeding is exploiting the rainforest through agriculture but also with the “old manner”: huge pieces of lands are partially cleared and cattle is let it go around to feed itself (cattle ranching). Counting the water usage connected with agriculture, the water needed to clean the used facilities and the water drank, cattle breeding uses huge amounts of water for cattle: an average milk cow consumes 200 liters per day, an average meat bovine 50 liters per day. It is easy to understand how impactful it can be on a natural water-based ecosystem.



The civil exploitation is dangerous because can be has many protagonists as many live on the Amazon rainforest edge and as many have enough money to invest there, but also because it is guided by the need of some people to survive or to improve their lives (that's why I insist that is very important to be understood and that's why a solution should involve all the protagonists and their needs and cannot mean a recession in local (for "local" meaning in some cases local communities or cities or provinces and in other cases states) economy, but must be a growth and must be good under any social aspect, must teach the local economy that a sustainable way is possible and must boost the local commitment with the results). One other reason of the size of the civil exploitation is that is virtually as

big as many people has to survive or wants to improve their life: nearly all people in those regions can be described like that.

It is important also to be understood that the people involved in this kind of damaging has generally (apart from some ill case) no bad and mischievous intentions: the rainforest is seen as a resource that is legit to exploit, there is no other point of view. Even the local natives deeply indirectly think it, but they live this process with a deeper connection and respect for the environment. This aspect of deeper connection is in part dangerous in the protection of the environment. While on one hand make them guardians of the rainforest from external exploitation, on the other hand some of them (not everyone) mixes modern technologies with ancient sustenance traditions and habits, I'll make some examples.

For example, decades ago they went to monkey-hunting with bows and arrows and blowguns, limiting the preys killed to 5-6 maximum (which was the maximum they could do with their hunting tools). Now some of them use fragmentation bullets and expanding bullets rifles to hunt monkeys (but it is just an example, much more are the animals hunted) and are killed as many animals as they can (more than 5-6 and more than the number of preys really needed, sometimes up to 20 monkeys at time, an entire monkey family) because they consider any prey that can be captured as a gift from the rainforest and have to be taken. It wouldn't be wrong but it is if we consider that most of the rainforest animals are threatened by other circumstances like poaching, loss and contamination of the habitat: this logic does nothing but worsening the problem, also

considering that the communities that still hunt are getting bigger (so will need more and more preys). Ancient techniques of hunting need a big patience, experience and give the opportunity to the animals (or at least to give to some members of the group of animals) to escape, rifles using fragmentation and expanding bullets don't. From this point of view, it would be even more ecological for them to consume modern conventional food. The usage of modern weapons gives also the opportunity to remove radically potential menaces like local predators (like jaguars or snakes) and animals getting too close to homes (similar to the local communities decisions taken in another part of the world by Aborigen leaders in the Australian lands "APY Lands – Anangu Pitjantjatjara Yankunytjatjara" that at the beginning of 2020 decided to kill more than 10.000 wild camels in 5 days because "they demand too much water and to look for it come too close to homes": this decision came in a moment of emergency for Australia, that due to drought and fires lost about 1 billion of wildlife animals, and seems ridiculous to kill more wild animals with the main motivation that they just look for water).

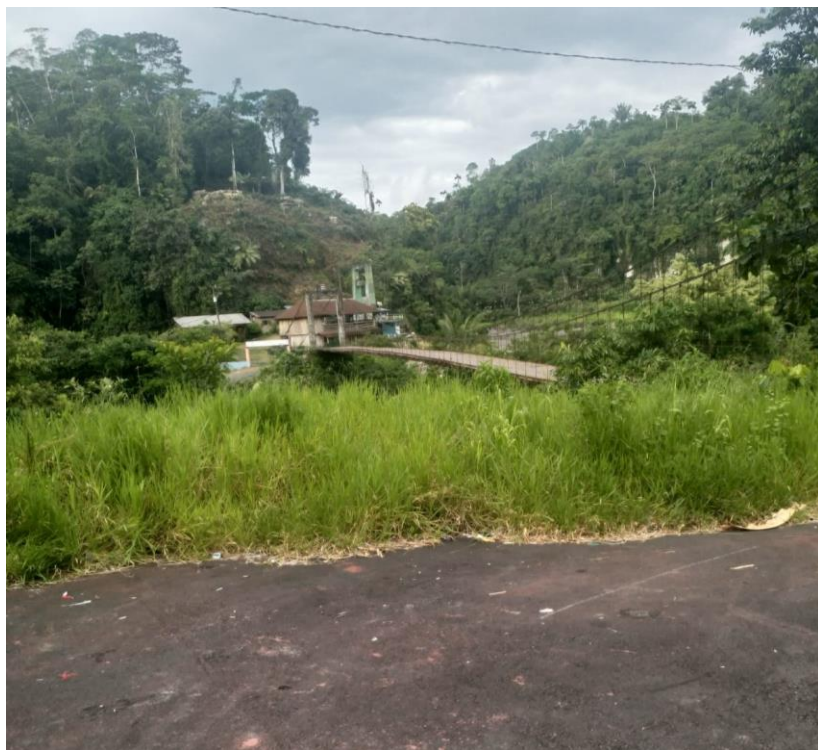
Another example is the use of land for conventional agriculture, not an aspect of local traditions. Some members of the communities are attracted by quick and easy earnings and clear the land for cattle breeding, cattle breeding cultivations (as previously said known as "pasto") and corn. Generally are used one to two hectares of land. The modern technologies used, for example, are tractors. What comes to be highlighted is that one hectare produces just from 80 to 200 \$ per cultivation cycle,

every 2-3 months on average: a low earning even for developing countries. The profit becomes even shorter when big farmers sell at lower prices. So one could understand that the environment is destroyed for nothing.



Even worse if you consider that most of the “individual” exploiters’ production is very small comparing to the big land owners and to the production in different areas of the same country, making the individuals’ provision to the country economy insignificant: for example in Ecuador and Colombia (and in the past in Venezuela) extensive agriculture on the coastline territories is much more relevant than the one that is carried on accross the rainforest, it even fixes the price for the products and make the Amazon regions’ product sometimes non-profitable; furthermore, in some Amazon rainforest areas the ground is not a plain and makes the application of extensive

methods difficult, contrarily to the coastline landscape. This example is very relevant taking in consideration the countries on the Western edge of the rainforest and in some central and Southern areas of the Brazilian rainforest; however, in Brazil the situation is quite different since a huge part of the country's rainforest is in a plain.



These problems, along with excessive plastic usage and wrong collect and disposal and along with wood and animal sale to the cities, of course are not the main forest-destroyers and are guided by a local search of continuity with traditions without

refusing or fully understanding modern technology and products.

Despite of these tradition-contamination that is not fully understood and fought by communities, the local communities on the edge and inside of the rainforest are the first line in the fight against the rainforest exploitation, mainly against the industrial explotation, and this has to be noted. With a better aid toward these communities we all could protect the environment in a better way.



Now we will discuss more about the **civil exploitation** method, in particular the agriculture (to be complete in the description, the most common plantations in the Amazon rainforest region are: banana, cocoa, coffee bean, soy, corn, sugar cane, oil palm, tea and "pasto". They are all affordable to most of the medium class population), that along the cattle ranching are the main protagonists of the rainforest damaging (sometimes agriculture and cattle breeding/ranching can be considered as two aspects of the same "farming" exploitation problem).





The roads

It is important to understand how the exploitation is began and expanded.

The most common way to clear the land for agriculture is, as previously discussed, by fire: it is set fire to a limited part of forest, then smoothed the ground and the agriculture process can start.

Often, the fire goes out of control and much more of the environment is destroyed with terrible consequences as we are experiencing during the last years. But this actuation is not carried on across all the Amazon rainforest region, it is used mainly in Brazil, on the Southern and Eastern edges of the rainforest and in isolated areas (not close to main cities).

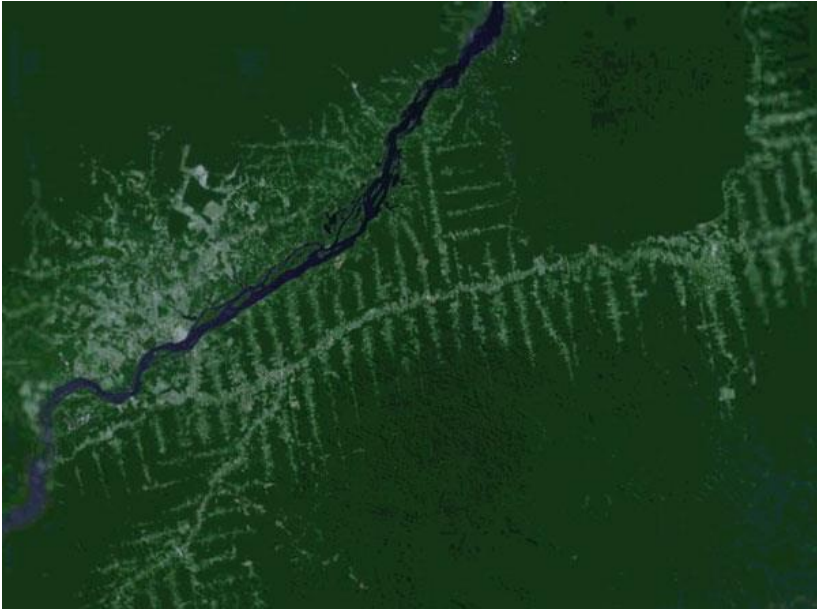


So, talking in general, the beginning of agriculture exploitation (but of course also cattle breeding and construction) is driven and boosted by roads. Even after fires in Brazil. If I had to say what is the biggest menace for the rainforest, I would say it is a road.



Once a road is built, the disaster begins. On the edges of the road people start to exploit rainforest because of obvious logistics advantages: it is easier to access, to take there vehicles, materials, people and tools, to extend facilities and to take products or natural resources out of there.

The road has always been a condition to human presence and exploitation of a territory, this is so important to understand how fast and large a civil exploitation can be. From the road, the territory is occupied perpendicularly towards the rainforest. Then, it is occupied more and more, until when a new road towards the occupied inner land, perpendicularly to the initial road and as long as the occupied territory.



(Yes, the lighter lines in the picture are roads)

Due to efficiency and convenience, a road is built perpendicularly to the second road and parallel to the first one: any land still not exploited between the first and the third road has all the easiness to be exploited, but also the land on the “outside” side of the third road (towards the virgin forest) and the cycle starts again. Apart of activities like agriculture or cattle breeding, also private mining and construction (like urbanizations, hotels, resorts and the other activities workers lodging) are reasons why a road can be built and added to the dense web of paths.





Deforestation along the Transamazonas highway in the Brazilian state of Pará

Most of the roads are built by individuals who need them for their activities, then, generally, the local administration help to pave the roads. In some cases the local governments build roads “ex-novo” to match an economic growth plan, encouraging then people to settle there. A road is basic for local business and regional sustenance, but if it and the environment in which it is put in are not managed properly and sustainably, it will be a kind of “expanding infection” for the rainforest. To have some example, you can simply look through Google Earth at any place on the edge of the Amazon rainforest and you will see the penetration of human activity into untouched forest through the roads. If you have the opportunity to cross the Amazon regions on the road, while staying on the road, you will

mostly have the sensation that you are not in a rainforest but you could be anywhere else.





If something has to be done to protect the Amazon rainforest, it will have to take in consideration the road problem and (as said before) the local economy sustenance.



The Project

This proposed project aims to find a solution to protect the Amazon rainforest environment from civil exploitation and to limit the effects of industrial exploitation. As said before, any modern solution must be designed considering modern tools: technology and economy. Technology is not only consistent things (like drone, etc...), but also social media, communication and network platform. Economy is not only the local economy or buy-sell/produce-sell processes, but also circular economy, crowdfunding, equity, big distribution organization, e-commerce and farmer to buyer system.

As already said in the introduction, this project would aim to be a partial non-profit business: this means that the earnings made are mostly re-invested in expanding the areas involved in the project and in improving the process and the advertising to the world, but a part of the earnings would be divided in the local communities for community or region projects (like water facilities for people, education, disease prevention, women support, drugs use prevention, city stray animals protection (the stray dogs problem is huge around all the world, in South America the problem can be limited and solved with the education of the people and sterilization programs to prevent the expansion of the project) and people sensibilization and waste recollect and recycle) and among the local workers as a bonus salary. A substantial part of the profit should also be used to create a solar and wind energy production system; another smaller part to a wildlife protection system, a wildlife hospital

and to projects to prevent and locate wildfires, poaching and illegal woodcut.

Considering the community value social addition, this project could be considered fully no-profit, but the profit is not entirely going into the same aim of the association.

The only way to make the project possible is that all the organizations get involved in the protection of the Amazon rainforest. This project is not a “multi-chance” project: cannot be launched and fail more than once per project-aimed territory (if it is launched in a specific area of the Amazon, it has to work in that occasion, any further launch could be dangerous for the validity of the project). It could be thought as a “one-time” project, not because it has a limited time validity but because it has to be able to start and develop enough after the launch. After developing enough, each local project should develop itself after the launch, never stopped and launched again.

The core of the project is to combine together native traditions, new technologies and know-how, global interest and sensibilization, local economic growth and respect for the environment. If any of these aspects is forgotten, then everything will fail or will be just temporary.

It also points to the fact that once the economic plan works out, local farmers and land owners will see convenience in it and will join the project voluntarily, turning their business into a sustainable and project standards converted one as a condition.

The logic is this: if we give another income to local people, they will not have to exploit the forest to survive and if we can control and protect the edges of the roads in the Amazon rainforest, we can prevent the rest of the of the rainforest from being mass-exploited (or civil exploited, called also mass-exploitation because involves a virtually very big number of people). An industrial exploitation generally takes place in an inner rainforest, requiring, as a consequence, a road to reach the plant; this road is not be itself because encourages people to exploit its edges and develop activities there beginning the cycle already described. That's why an industrial exploitation is not dangerous only by itself, but involves much more than the plant.

The main idea is the following: buy all the lands next to the roads from 40 to 100 meters towards the remaining rainforest (meaning a land long as the road and wide 40 to 100 meters; 40 to 100 meters taken perpendicularly to the road, perpendicularly to the road in any part of the road).

This is the only way to protect further environment damage. It could appear a little bit impossible to be made, but it is just difficult and effort-demanding, not impossible.

The lands bought that still have virgin rainforest would be protected while owned, but the most important part is to recover those that have been exploited until when they are bought. These last mentioned lands () have to be restored in the following way: 75% of the inner (meaning the part of these lands pointing towards the virgin forest) former-exploited

territory should be restored with trees that are typical of the rainforest area, the remaining 25% close to the road should be converted to a kind of “protection belt” between the road and the rainforest; in this area should be made all the activities to replace exploiting existing activities. This 25% of land is very important because it makes the whole project sustainable and gives to the local communities the possibility to have an economic growth while protecting the environment. This 25% of former exploited land should be productive through sustainability; the methods through which obtain results would be:

- **Tourism**: creating eco-lodges in the cities or in the communities nearby and creating theme paths crossing the lands that are part of the project; with these paths could be given tourism attractiveness to these areas; some paths could be “themed” to specific topics like rainforest survival, vegetation acknowledgement, environment education, hiking and adventure expeditions.
- The **cultivation** of high value “not known” (meaning that are not known very much in Western and global markets, but only known locally) **fruits** (to be noted fruits, so there is not “lack” of vegetation in any time and the natural cycles are respected; approximately 3000 fruits that grow in the rainforest that are edible); these cultivations would not be “mono-tree/mono-fruit trees” (meaning that there is not a single cultivation in the same pieces of land), but there would be two-three

fruit tree in the same place; can be two/three different types of high trees, both palms and not palms, or high trees combined with medium/short trees; these trees would be the locally known ones, the traditions of native populations and communities should be the key for the success of the project: the nature treasures will save the same environment. There are almost unknown, or better saying just locally known, palm trees whose fruits can be easily turned into a special oil that is used by local women for their hair with incredible results. There are other fruits and seeds that are edible, tasty (for example the fruit called “pitihaya” that tastes like a mix of banana and kiwi) and others that have other notables qualities highly demanded in the Western market. Other trees that can be easily combined with each other and with inedited (for us) trees are coffee, cocoa and banana (for these three kind of trees mentioned should be made a clarification: coffee and cocoa should be guided by “special products manufacturing” meaning that should be offered coffee beans specially flavoured and chocolate with flavour mixed with local fruit essences; banana should be grown for the production of “unusual” products like marmalade or juices; this clarification has to be made because, as previously stated, these kind of agriculture sometimes leads to civil exploitation with terrible consequences, that’s why, if applicable, these three cultivations have to lead to a special value quality, not to quantity and that’s why the “applicability” should

also and always be studied to see if using these three cultivations could lead to an “imitation” of local communities not involved in the project, leading to a worse civil exploitation).

- **Research and developement** of new materials derivatives of fruit skins and seeds to replace conventional plastic items (like bags, straws, forks, glasses).

These activities should involve all the local communities and cities workers previously employed in exploiting activities: changing their point of view on the rainforest from just a resource to be used to survive to a resource to be protected to keep surviving is the first success of the project.

The only production admitted is the **low production** (in the aspect of the quantity produced, comparing to the classical extensive agriculture that is nowadays carried on in those regions), but it has to generate **high value products**, superior than that of the common exploiting agriculture.

The project could not stop here because the **added value** would be provided also by the global (even that also the Western market would be big and fruitful enough to provide an efficiency and an economic sustainability to the whole project) market; the markets through which the products are sold should recognize the environment protection effort of these products and give them a special higher consideration place comparing to those produced with conventional agriculture exploitation; the highest goal that the producer-to-customer process could obtain is that the large retail chains gives

absolute priority (or even **purchase exclusivity**) to the products that respect the project standards in terms of environment protection and respect, sustainability, local communities involvement, low carbon emission, the percentage of the profit used to finance green energy (and the use of it in the production process), hectares of virgin rainforest protected and hectares of rainforest restored: this behaviour of large retail chains could lead to volunteer participation of local farmers to the project (conditioned to the respect of the project standards).

Since the main income of the project organization would be the added value given to the products, the products have to be new, natural and special, finding their roots in local traditions, but the real winning asset of the added value are to be given by the distributors and big chain retailers, both supermarkets and ecommerce platforms, which recognize the difference that this products can make in protecting the rainforest and, doing so, fighting the climate change.

Both the final customer and the distributors have to understand the difference that the products made through this project can do to the environment and that buying similar products that don't comply with environment respect and protection verified standards can produce terrible consequences.

As mentioned, the project would produce money to be mostly invested in the project expansion and improvement itself. However, the main problem is evident: where the launching

capital would come from. As said, there is just one launch (meaning per specific area) and it would have to be definitive and solid. The modern technology and communication network and the modern economic tools must be the vehicles of the launch success. Social networks like Facebook, Instagram and Twitter, “advertisement supporters” like Google, Yahoo and mass media like TV will be the ways for the needed advertisement to reach as many people as possible. The point of an advertisement campaign would mainly be reach as many people as possible that are far from the problem that this project is trying to solve: in most of the areas of the world you don’t see the destruction of the nature by man or by climate change in their everyday life (people in great cities, specially in Europe or North America for example); most of them would like to do something but see the problem far from them and the solutions impossible for them to be carried on directly; reaching everyone of them and involving them would make them part of the solution and virtually close to the problem. Advertisement would make them know they can be close, but the modern tool to make them live a project and its motivations is **crowdfunding**: Kickstarter, Indiegogo, Causes, Gofundme and others crowdfunding websites demonstrated how people apparently far from a topic can feel themselves so closely and deeply involved; the logic would be the same and it have to be made the most of all the classic crowdfunding websites. As already said, all the means useful for the launching success have to be used at their best. Obviously, also direct donations would be accepted with some locally made gift as thanksgiving (this would involve even more the donor or “backer” and an

immediate return would give immediate help and acknowledge on the local economic potential to local communities). (When considered appropriate, the “hybrid no-profit” project organization could be taking in consideration the entry of equity funds for the growth and only in absence of other money resources; this entry of equity funds should be decided case per case, only if the area doesn’t contain natural resources like oil and mining minerals (to avoid exploitation pressures on local communities), with no more than 25% of equity value for the organization and with an obliged exit of approximately 2 years with an interest maximum of 5% on the interest to be returned at the exit.) Crowdfunding and donations collected money would be used for the purchase of the land next to the roads and the production machineries needed; this would make everyone of the backers and donor owner of a little piece of protected land: through this way of money collection, no one would be a donor or “shareholder” or “stakeholder” bigger than the others, avoiding any possible will of starting to exploit the protected land (this will could maybe driven by economic or social changes), making possible only to follow the organization regulations, giving no way to overtakes in the administration.

As said before, also an Amazon typical gift would be shipped to backers and donors; they would also be invited to spend their holidays in the enviromental project that they contributed to create: they would live an ecotourism experience that would be less expensive (so the former backer tourist would save money) than that offered by the tour operators in their countries, but

will impact positively on the project funding and on local communities; furthermore, the donor would see the project born and develop, give his/her contribution (not only with money but also with knowledge exchange) and the local people would see how important their contribution can be considered by people from the other part of the world.

The other funding resources from where this project will start would be the local governments or administration donations: it has already been explained how the local governments try to encourage exploitation thinking it as the only way for economic growth, they have to be explained how this project can have a great positive impact on local occupation and, as a consequence, on local growth. This consciousness can lead the local governments and administrations to donate “unused” lands (both already exploited or not) making a difference in the project starting size and finding a possible solution to the local employment specialization (if the project is seen working and having good results as planned, it will be easily applied to bigger areas that would see secure employment not dependent from region politics or local economy (which is very unstable generally) but from larger and high demanding markets, that would be the dream of any local business and administration).

With the ongoing project, the project sustenance and expansion funding would be provided by the products sold abroad, but this would not be the only one.

One of the others funding resources has already been mentioned before and is the **tourism**; it was mentioned the

donor/backer discounted tourism but it would be also open to all the other tourists; from adventure tourism to eco-local community-tourism to specific topic tourism to luxury tourism, tourism will be supremely important for the project: apart from the economic importance, it will be strategic also for letting the world know the project and its successes and developement to the world with real witnesses.

The other additional income would come from **volunteering projects**: on the model of African wildlife refuges the volunteers will pay housing, food and transportation (along with a little contribution to the project funding) on themselves and will make experience contributing to make the project work (in different areas like wildlife animals study, protection, rehabilitation, stray dogs and cats rehabilitation and recover, vegetation study, fruit recollection, production, community education, market advertising, next project-involving areas study, tree planting, world relations).

CROWDFUNDING -> RAINFOREST

PROTECTION -> PRODUCTION to MARKET (+

Tourism + volunteering projects + exclusivity

distribution value) -> RAINFOREST PROTECTION

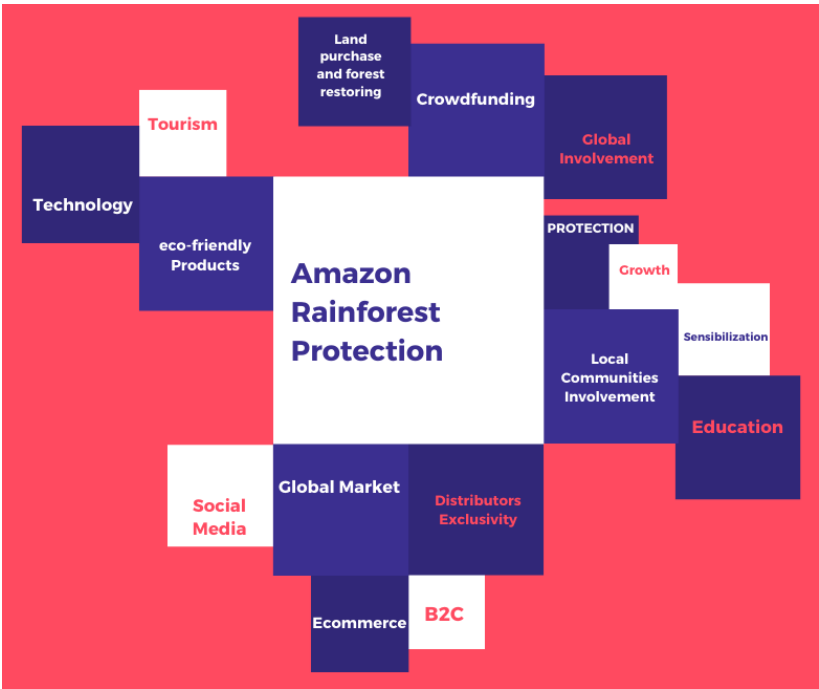
and **LOCAL ECONOMY GROWTH**

The intended start date of the just described project is by the **end of 2020**, until then will be found possible partnerships with organizations working on the environment protection and talents willing to make it possible. Up to the date (beginning of 2020), still no organization has answered positively but the validity of the project will make it real and appealing to partnerships (has to be noted that most of the organizations working for the environment protection that have been contacted are aimed to the sole sensibilization and don't try to experience direct action; in my opinion the protests and the words alone without proposing solution or without creating real and strong proposals are not making a positive difference in the environment fight that we currently need).

The first land purchases are expected on March 2021, the first tourist expedition on December 2020 and the first product to market on May 2021.

These expected dates are just a forecast.

A quick Brainstorming on the project



In case of bad print resolution, here is the Brainstorming image:

<https://drive.google.com/open?id=1mBAbGhIF-mRI9UgAYfqI4-xD2BS1iR5A>

A digression on the security and surveillance that the project would need

The virgin rainforest protected, the rainforest restored and the “protection/production belt” should be under surveillance; otherwise, all the effort to build something new and to see a new solution and opportunity both for the rainforest Amazon and the local people would vanish immediately.

The surveillance is a need mostly at the beginning of the project because not seeing immediate effects could lead people to not believe deeply in the project (which is normal at the beginning), but some could try to woodcut, continue poaching or mining in the areas protected by the project.

After the start, some people could try these activities again and is always good to prevent possible theft of products or machinery. That’s why surveillance cameras should be installed at the access of the protected areas and in strategic places inside of them. Thermal cameras (or thermal imagers) or infrared cameras should be placed at the entrances next to the roads because some of these illegal actions are carried on during the night. It is to be understood that protect a land from exploitation is also an occasion to study the wildlife on the edges of the forest and its relationship with climate change and human nearness; that’s why hided cameras and infrared cameras distributed across all the protected lands could provide very important data that should then be released as public to the world and to documentary makers (that in change

would advertise the project for further donations or collaborations).

These mentioned (cameras) would be the static way to control and protect the areas, but there would be two dynamic ways to watch over the the protected areas: local people working on the project as security staff and drones that would regularly and independently fly over the areas and occasionally be radio-controlled to follow possible poachers or woodcutters or miners inside the protected rainforest or inside the production areas. The drones should be minimum one per hectare and the security local personnel should be minimum 2 per 3-4 hectares.

However, it is again highlighted that the best security system is the **local population** (both people from communities and cities, not just indigenous people) once they understand how important it can be for both them and the world, but until then it is important to not lose all.

Climate change and human activities

It is clear that the world climate has cycles that take it to be sometimes hotter, sometimes colder. But this cycles happen natural when the nature is left acting alone without any “interference” that can’t prevent it to find a new peaceful equilibrium. Human exploitation and industrial activities are an interference. This interference can make it very hard for nature itself to find easily a new equilibrium similar to the previous one.

An equilibrium is always reached but the way through which it is reached can make a difference on the life that is adapted to exist with the previous equilibrium.

The difficult path through which the nature stabilizes itself after overcoming the human interferences is traduced in what we are calling a violent climate change: we are accelerating changes, that would be normal in centuries, in a few decades; our activities are strongly boosting an already existing natural change.

The nowadays climate change is deeply and quickly raising global temperatures, disclosing extreme meteorological events and weather conditions.

Heat waves, intensifying metereological situations and raising temperatures are the first changes that are hitting the Amazon rainforest: stronger and longer drought seasons and hotter summers are really incisive in an ecosystem strongly dependents on abundance of rainfall water; even though these

natural changes and events (so called even that they have been leaded by human activity accelerating cyclic changes) can have virtually terrible consequences, the main problem of these climate conditions is that they worsen the human activities that can lead to further environment damage: the fires are most important example (some of them are natural but most are started by man to clear the land for exploitation).

The rainforest can play an important role for both fighting and worsening the climate change: it can absorb the carbon dioxide “breathing” but also produce it if it is burned. That’s why it is important to protect it and make it work as one of the largest carbon dioxide absorber and oxygen and humidity releaser.

Our activities should develop without creating interferences with the nature, trying so to be as sustainable as possible, trying to find an alternative solution when the exploitation is seen as the only one and trying to contain the natural changes and events that can make their our actions even worse.

The importance of Amazon rainforest

The Amazon rainforest (also referred to as the 'Lungs of the Planet') is the world's biggest rainforest, larger than the next two largest rainforests — in the Congo Basin and Indonesia — combined.

The Amazon rainforest covers 7.8-8.2 million square km, more of the size of the forty-eight contiguous United States and covers some 40 percent of the South American continent. The Amazon is estimated to have 40,000 plant species and 390 billion individual trees and it is thought to have 2.5 million species of insects.

The Amazon rainforest plays an important part in regulating the world's oxygen and carbon cycles. Has long been thought to act as a carbon sink, meaning it readily absorbs large amounts of carbon dioxide from the atmosphere. If we lose the Amazon, we lose a crucial part of the world's life support system: the Amazon rainforest produces up to 20% of the oxygen in Earth's atmosphere, cycles water that regulates our weather, and hosts a wealth of undiscovered species with potential for new medicines. 25% of all western pharmaceuticals come from rainforest based ingredients, yet less than 1% of the trees and plants in the Amazon have ever been tested by scientists. Many plants around the world have medicinal qualities. Of the plants known to have anti-cancer properties, 70% are found in the rainforest. Amazon natives use rainforest plants regularly but 90% of the ones they use have not been studied by modern science.

Tropical forests and woodlands (e.g. savannas) exchange vast amounts of water and energy with the atmosphere and are thought to be important in controlling local and regional climates. The Amazon rainforest plays a large role in rain patterns because the moisture that its vegetation traps and releases travels as clouds for thousands of miles. Water released by plants into the atmosphere through evapotranspiration (evaporation and plant transpiration) and to the ocean by the rivers, influences world climate and the circulation of ocean currents. This works as a feedback mechanism, as the process also sustains the regional climate on which it depends. 70 percent of South America's GDP is produced in areas that receive rainfall or water from the Amazon. The Amazon influences rainfall patterns as far away as the United States. Climate models show that the Amazon's moisture affects rainfall as far away as the US. If the Amazon were completely deforested, that would cut Texas rainfall by 25%, cut the Sierra Nevada snowpack in half, and reduce precipitation by up to 20% in the US coastal northwest. For that reason, large-scale deforestation in the Amazon can "pose a substantial risk to agriculture in key breadbaskets halfway around the world in parts of the US, India, and China," according to the WRI report. The Amazon may also play a role in ocean currents, since the Amazon River accounts for over 15% of all fresh water that enters the oceans. Changes in the ocean's balance of fresh water and salt water can slow down or speed up ocean currents, which regulate weather across the globe.

But when trees are logged and the forest is burned, that carbon is released into the atmosphere at alarming rates. Recent research has suggested that these forests might actually be emitting more carbon dioxide when set fire than they're able to absorb.

The Amazon rainforest has been burning for half of 2019: Brazil has seen more than 74,000 fires in 2019 — nearly double 2018's total of about 40,000 fires. The deforestation rate has increased 88 percent over the past year, while the number of fires has increased 84 percent compared to the same time in 2018, according to Brazil's National Institute for Space Research (INPE). Through July 2019 over 7,200 square miles of the Brazilian rainforest has burned—an aggregated area nearly the size of New Jersey.

Humans have cut down nearly 20% of the Amazon in the last 50 years, according to the World Wildlife Fund (WWF). If another 20% of the Amazon disappears, that could trigger a "dieback" scenario in which the forest would dry out and become a savannah. Furthermore, it's estimated that if the climate change were to increase the world's temperature by only 3 degrees Celsius then 75% of the Amazon would be destroyed. Last month, the Amazon saw record-breaking rates of deforestation, primarily due to infrastructure projects, logging, mining, and farming. Data from Brazilian satellites have indicated that about three football fields' worth of Amazonian trees are falling every minute.

Epilogue

The proposed project is thought to be open-source.

The protection of the Amazon rainforest, the fight to climate change and the awareness of the importance of the nowadays natural weather equilibrium are not limited to ethnic groups (that sometimes identify themselves as only climate fighters while exploiting an environment in an equally dangerous way) and political parties (which is something that is too many times forced by public opinion) but are issues for everyone in the world. We all live in a world in which we have long been part of the problem, but we have to be part of the only solution. In my opinion, even that sensibilization and people involvement are always good (at least to raise awareness and politics attention), but the problems we are facing need solutions to be proposed and carried out, not only protests. The logic is the same of the project previously described, to change nowadays habits, alternatives have to be found.

That's why this project is open-source and open to anyone who have capabilities or even only the will to create a new hope for a new approach to the future cohabitation of the environment and us.

For further collaborations and for anyone willing to work on the project described or anyone who has suggestions, here is the contact to write to:

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