

**Forum:** United Nations Environment Programme (UNEP)

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**Student Officer:** Fenna Sigmond

**Position:** Chair of United Nations Environment Programme (UNEP)

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## Introduction

Agriculture, according to a report supported by the Norwegian and British governments, is the cause for roughly 80% of tropical deforestation. The demand for materials coming from natural resources is rising, and in consequence to that, agricultural companies expand to accommodate such demands. They increase the amount they are able to supply by increasing the area of land they have. In big industries such as the coffee, palm oil, rice, meat, dairy, or wool industry, unforested lands are few, and so companies clear their lands of forests to make way for their plantations or grazing lands. This is called forest conversion. Agriculture falls into the human category of causes for deforestation, and as such can also be addressed by the humans. As the scope of this problem expands, the amount of deforestation it creates increases, ultimately showing why this problem has to be solved efficiently.

As agricultural demands have increased, so have the number of plantations and lands deforested for animals. This has led to profit for many while also causing the degradation of the environment. The plantations can lead to monoculture, which then leads to more deforestation in the search for more land with sufficient minerals. As the agricultural sector grows, the economic gain for countries increases and so does profit from their trades. However, countries do have independent policies towards the environment, how they propose to take care of it and help the environment increase its stability regarding global warming. Some of these are more strict and may prohibit certain activities from happening due to their developing impact on the environment, while some may have certain restrictions or warnings about the effects of these activities. However, there is still a lot of money to be made in these industries such as Brazil with the palm oil industry. With these industries come more job opportunities but also cheap labor is needed to maintain these industries such as the maintaining or plucking of fruits on plantations.

With this cheap labor comes the opportunity for more gain from these industries, which then leads to more forests disappearing. The scope of the damage it causes is appalling because, as said before, around 80% of deforestation occurs due to agriculture, and every year, around 15 million trees are felled down, bringing the number of deforestation due to agriculture to around 12 billion trees per year. This is a vicious circle of deforestation leading to the degradation of our environment. Deforestation impacts many, but the effects and consequences are to be weighed against the economic gain for countries and the future outcomes for countries have to be addressed and compared to financial profits in order to stabilize a country with a profitable solution to the problem. As big as this problem may be, countries are to be cautious, as economic gain for their countries will be tested against the future for the world, where the question is not to ask why not, but what if.

## Definition of Key Terms

### **Natural Resources:**

Materials or resources that are found in nature without human intervention and can usually be used for economic gain.

### **Deforestation:**

The action of the clearing of forests by natural or artificial causes.

### **Agriculture:**

“the science, art, or practice of cultivating the soil, producing crops, and raising livestock and in varying degrees the preparation and marketing of the resulting products” (Merriam-Webster Dictionary).

### **Forest Conversion:**

“Forests conversion involves removing natural forests to meet other land needs, such as plantations, agriculture, pasture for cattle settlements and mining. This process is usually irreversible.” (World Wildlife Fund).

### **Industrial Agriculture:**

Production of livestock, crops, etc. in a modern form of agriculture.

### **Carbon Sink**

A carbon sink is an environment that stores or transforms carbon. For example, a forest can be considered a carbon sink, as it takes in carbon in another form and transforms it into oxygen.

## General Overview

Deforestation has become an extensive issue in the 21st century, as industries are becoming conflicted with interests towards preserving the environment and keeping the conditions on Earth stable, seeing as climate change has wandered on and as different agricultural techniques or methods are found harmful to the environment. The environmental consequences include the acceleration of global warming, as carbon emissions are increased due to carbon sinks such as the Amazon rainforest being misused in economically profitable ways. Another repercussion would be the loss of habitat for endemic species of organisms. Forests are natural habitats for around 80% of organisms worldwide, and by decreasing the life space of these species, their numbers will reduce too. These are just a few of the consequences brought upon our world by deforestation for agriculture.

## Palm Oil

Palm Oil is cultivated from the palm tree fruit of palm trees and is usually grown in plantations for a greater profit. Currently, Malaysia is the top exporter of palm oil, exporting around 39% of the world's palm oil. As palm oil is grown in plantations for a greater profit, forest soil usually provides for a nutritious place for a business to start up. In Brazil, for example, buying up land around or in the rainforest is fairly cheap as nothing else happens with it. For cheap land, companies can take down the trees thereby burning or logging and plant the trees they need for good business, making large plantations.

The effects of these plantations vary. One of the reasons rainforests are deforested is due to a need for money in a good economy, but due to continuing the economy on a land space, monoculture appears. Due to this substantial monoculture, businesses find it to be easier and cheaper to move on to new land and restart their business, redoing the cycle of taking away all earlier trees, planting new ones, reaping the harvest and after the course of a few years, being faced with the consequences of monoculture again.

Palm oil has many uses that are incorporated in the food and non-food industry. The oil is extracted from the fruit that is attached to fresh fruit bunches (FFBs). The fruits yield crude palm

oil which is refined and used in up to 50% of products that can be found in supermarkets. Largely used in domestic cooking and for industrial purposes, palm oil has a sizeable industry that only seems to be growing in its worth and use around the world. Because of its many uses, palm oil has grown in its worth as well as its quantity. This increases the amount of deforestation happening due to it and makes it a dangerous factor to the decrease of forests.

### **Soybean Plantations**

The soybean industry is a lucrative one as well and has just as many uses. It is used in animal feed, food industry, and the non-food industries. Most of the soybeans used in the food industry are used for their oil. The oil is separated from the soybean meal and used in various retail food products such as soy milk or tofu. The very high-in-protein fiber is used for animal feed. The part of soybeans that are used in the food industry is a small percentage of the number of soybeans processed, whereas the part that is used for animals is substantially larger. The fiber that is left over from the oil separation is toasted and mixed into animal feed, giving them higher natural protein. Another use for soybean oil is in the biofuel industry. By a process called transesterification, glycerine in the oil is separated and the end product is soy biodiesel. It is a material of the future but is still not entirely environmentally friendly because of the way that it is monopolized and industrialized.

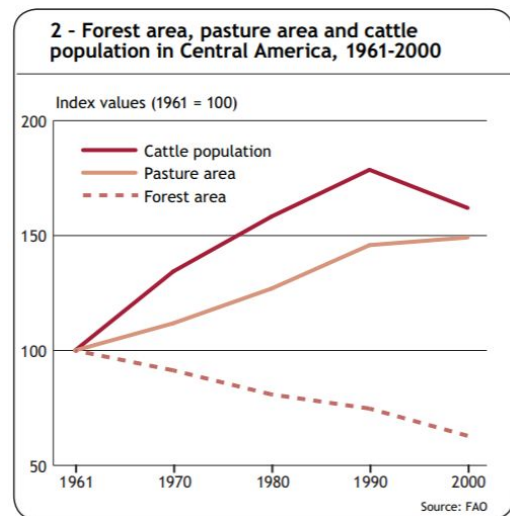
Large companies such as Cargill go to local producers in Latin America or anywhere else in the world, and as those farmers then are recruited or sell their crops to these agriculture giants, they buy more and more land, creating more deforestation as their profit increases. As more is demanded, the farmers want to supply more to be able to stay in line with the demand and their own profit.

### **The Logging Industry**

Logging is the act of cutting down trees to harvest timber for the use of fuel, wood, or products. The logging industry is involved with deforestation for agriculture in the clearing methods for fertile land. The slash and burn method, which is a methodical burning of trees to clear forests is another and very inefficient method that wastes resources. The logging method has farmers cut down the trees, sell them for wood, products or fuel, etc. and then have the land free for them to use for their business, usually involving agriculture.

## The Livestock Industry

Cattle ranching and other livestock businesses largely contribute to deforestation. Forests are cleared so that the animals have enough space and/or a barn for shelter when needed. Depending on what livestock industry is practiced the farms may expand due to great profits or to a larger population of livestock than the original one. In the period between 1990 and 2003, cattle herds increased by 140%, as cattle ranching is low maintenance and requires little to no observation or work hands. As cattle needs nutrients, or are given nutrients to increase the profit of the business, cattle ranching becomes a bit more expensive. Food products such as soybean or corn require large land areas to grow and in turn, contribute to deforestation. The graph shown, provided by the Food and Agriculture Organization (FAO) shows the relation between the growth in cattle population and the amount of land they had to graze and the decrease in forest area. The larger the cattle population became, the more land was bought to increase the business, and the more deforestation occurred due to the economy demanding more.



*Image provided by the FAO, showing the relationship between forest and pasture area and cattle population*

## The Biofuel Industry

Biofuels are a type of renewable energy that are researched to substitute fossil fuels. They are made from plants and come in a variety of types. Two of the most common biofuels are ethanol, which is derived from plant fermentation, and biodiesel, which is derived from biodiesel. As energy sources, biofuels have a bright future, but risk deforestation and the destruction of various ecosystems.

Ethanol is mainly seen as a type of alcohol that is produced by fermenting sugars and starch from plant components using yeast, a bacteria often used in baking. Some of these plant sources include corn and sugarcane, each of which can be found in very different locations and therefore

makes ethanol a large global resource. It could be able to replace gasoline, and every year, the consumption rate increases 10% - 20%. However, there is some controversy regarding the fact that it is a first generation biofuel, meaning it is made directly from the source, or in this case crops. That would mean an increase in these industries, which in most places, mainly around Latin America and severely around the Amazon Basin, would mean the increase of deforestation in an effort to have a piece of the need for these crops and resources.

Biodiesel is a vegetable oil which is commonly sourced from oil palm trees or soybeans. It can replace fossil fuels and advocates suggest that it can severely lower CO<sub>2</sub> emissions, however, it is also responsible for a lot of deforestation. As biodiesel can be sourced from palm oil, more and more palm oil plantations are opened, and a study suggests that around half of palm oil plantations created between 1990 and 2005 were created in forest area

## **Major Parties Involved and Their Views**

### **Brazil**

Brazil is the largest country in South America and contains more of the Amazon rainforest than any other country in South America. Recently, they have become extremely involved in the palm oil industry and is using the land it has at its disposal. This includes rainforest land. More and more of the Amazon rainforest is deforested to make way for palm oil plantations, fields, and grazing land, as Brazil is also involved in the meat, soybean and coffee industry, being one of the biggest exporters of these. It is also largely involved in the cattle industry, with cattle ranches around the Amazon Rainforest being large and with great profit and requiring less labor than industrial agriculture.

### **Malaysia**

Malaysia is the world's largest palm oil distributor in the world, distributing around 39% to 40% of palm oil used worldwide. 59% of Malaysia's land is tropical rainforest, has extensive mangroves, with indigenous species being threatened by the commercial interest in the rainforest and the land it is on. Scientific studies and information provided by the Malaysian government show that Malaysia uses 56.6% of its forest for production with only 18.2% under protection, and 5.4% used for conservation.

### **Ecuador**

Ecuador is a relatively small country but over half of it is composed of the Amazon rainforest area. By 2000, the government declared deforestation to be one of their major environmental problems and local forests were predicted to last around 15 years, with the Amazon disappearing in 40 years. Agricultural practices seem to take most of the blame, but oil development is coming into the picture and is very constructive towards deforestation.

### Peru

Peru is the third-largest country in Latin America with most of its land consisting of the Amazon rainforest. The Amazon rainforest goes outwards from Brazil into Peru and other countries. In Peru, a lot of measures have been passed but enforcement of these laws or articles is lax and so scarcely any adjustments have been more. However, they have been working towards the Amazon with agricultural development and trying to prevent irreparable harm.

### USA

Although the USA has had relatively stable forest cover over the last century it was not always the case and the government has paid attention to their future forests, putting in regulations and programs. The United States Forest Service has taken major steps concerning reforestation in the period of 1990 to 2010. They have lost a lot of forest cover due to agriculture and urban sprawl, making them a country who takes notice and action.

### Indonesia

Indonesia is a country with one of the largest deforestation rates in the world. Of its forests, 72% were destroyed leaving 28% left in the country. Indonesia, like Malaysia, is very involved in the palm oil industry and produces a lot of crude palm oil. Because of this, more and more plantations appear, while their forests disappear. Although Malaysia is the world's largest exporter of palm oil, Indonesia is the world largest producer of palm oil, namely crude palm oil.

## Timeline

Date	Description of event
1945-1975	<b>Forests in Thailand</b> decrease by around 56% due to exploitation by the British, Thai and Chinese. The Royal Forest Department was created to find a solution to

the problem.

- 1970      **The National Environmental Protection Act:** A law enacted on January 1st, 1970 in the USA. It promotes the enhancement of the environment and established the President's Council on Environmental Quality.
- 1972      **UNEP:** The United Nations Environmental committee was established on June 5, 1972, in Nairobi, Kenya to coordinate the UN's environmental activities and concerning itself with improving environmental policies.
- 1973      **Chipko Movement:** A movement that started in India, where people embraced trees to prevent them from being cut down. This movement inspired many other movements as well as a model for non-violent protest in India
- 1977      **The Green Belt Movement:** The Green Belt Movement is a movement that was started in 1977 and works together with women in rural communities to improve their lifestyle by improving the environment around them such as by planting trees.
- 1990s      **"Save the Rainforest" Movement:** This movement was set up around the Amazon rainforest and basin against the industrialized deforestation of large parts of the area.
- 2006      Brazil passed the **Public Forest Management Law**, a law that established regulations presided over by IBAMA in a forest regime in order to restrict the amount of deforestation happening.

## UN involvement, Relevant Resolutions, Treaties and Events

The United Nations has passed many resolutions based on deforestation or the effect of deforestation. These resolutions go from challenges for countries or invitations to contribute to certain actions or programs to undertakings and placing in law the conservation of forests under certain circumstances. Some of these resolutions include the United Nations Strategic Plan for Forests 2017-2030, The UN Forum on



- On April 27th, 2017, the UN General Assembly addressed the Strategic Plan for Forests 2017-2030. This Plan has six Global Forest Goals, all of which are voluntary to address for all countries. They convey statistics and certain numbers such as to have global forest area increased by 3% (Global Forest Goal #1) as well as goal such as having extreme poverty eradicated for forest-dependent people (Global Forest Goal #2).
- On November 30th, 2015, the Paris Agreement was signed, an agreement concerning future carbon emissions and forests. The leaders of the participating countries announced that they would “do their part to see deforestation reversed in their lifetimes” and conserve forest, providing a better chance to reduce carbon emissions on Earth.

## Evaluation of Previous Attempts to Resolve the Issue

The UN has made many efforts in the conservation of forests and reversal of deforestation, yet they seem to be incomplete. As these resolutions outline suggestions, it only shows what could be the end goal and does not really show how to get to that place. It would be more efficient to have an outline or at least a basic idea of how to achieve the goal, given the circumstances of a country. Also, most of the attempts seem to be too broad instead of focusing on one part. They talk about ending deforestation, whereas it might have been efficient to have goals propose to have a certain cause of deforestation eliminated, such as logging, fuel, or agricultural practices. The resolutions simply propose to achieve the reversal of deforestation, whereas it might be more efficient to work from one part to another, such as simply reversing agricultural deforestation or industrialized deforestation first, and then moving on to another part to have the goals become reality.

## Possible Solutions

Deforestation cannot be solved easily, although there are some steps that could enforce it and make it happen. First, the amount of deforestation happening has to decrease. This can be introduced by finding different renewable energy sources for the trees that are cut down for energy, reuse land on which minerals have been depleted or simply instate laws that prevent

farmers or companies to cut down more than a certain number of trees. Recycling should become more in use around the globe furthermore reducing the use of wood.

Also, be able to include reforestation. Solutions can range from implementing laws that ban or limit farming land or amount of trees cut down to whole programs concerning reducing the use of wood and rebuilding of the forests in certain areas or countries. Also, decreasing deforestation can improve the Earth's "health" or the amount of carbon emissions and status of the ozone, meaning that solutions can have a wide variety of purposes and can be limited to a sector of agricultural deforestation, or address it as a whole and as a critical factor regarding future forests and natural resources.

Restrictions for plantations and amounts of land bought for agriculture can be restricted using laws, and inviting environmental organizations to improve environmental education can help as well, so that future generations can learn from the past and work towards the future.

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## Appendix or Appendices

- I. Document on solutions to deforestation and different parts to it.  
<https://www.greenpeace.org/usa/forests/solutions-to-deforestation/>
- II. Explanations on the use of the Paris Agreement in connection with deforestation and forests  
[https://www.huffingtonpost.com/gustavo-silvachavez/forests-emerge-as-a-big-w\\_b\\_8793226.html?guccounter=1](https://www.huffingtonpost.com/gustavo-silvachavez/forests-emerge-as-a-big-w_b_8793226.html?guccounter=1) and <https://unfccc.int/news/forests-as-key-climate-solution>
- III. The Strategic Plan for Forests 2017-2030 Document  
[https://www.un.org/esa/forests/wp-content/uploads/2016/12/UNSPF\\_AdvUnedited.pdf](https://www.un.org/esa/forests/wp-content/uploads/2016/12/UNSPF_AdvUnedited.pdf)