

# Environmental Committee

## Topic B:



Fostering sustainable forest management including afforestation and reforestation in degraded lands as an effective solution to environmental problems.

### I. Introduction

Forests are absolutely necessary in maintaining ecological balance and combating environmental challenges on a global scale. Sustainable forest management (SFM) involves practices that make sure forests will meet current needs as well as those of the future generations. This approach paired with afforestation and reforestation offers a solution that tackles environmental problems such as climate change, biodiversity loss, and land degradation.

Human activities including deforestation, agriculture, mining, and urbanization have led to major forest loss and general land degradation (*European Parliament*). Which, in turn, has disrupted ecosystems, stripped species of their habitat (leading to loss of biodiversity), and accelerated climate change as the major carbon sink is being damaged. As the human population grows and our demands grow ever larger, we turn to the exploitation of our natural resources (such as forests) to satisfy them. It is also important to note that the United Nations puts a particular emphasis on agriculture as the leading cause that brings the need to sustainable forest management.

The United Nations further emphasizes the need for sustainable forest management in, for instance, Sustainable Development Goal (SDG) 15 “Life on land”. Said SDG clearly states that the need for protecting, restoring, and promoting sustainable use of terrestrial ecosystems is profound. Through collaborative efforts, and collaborative efforts only is reforestation and afforestation going to become a critical component in addressing global environmental challenges.

## **II. Definition of Key Terms**

Sustainable Forest management (SFM): The practice of managing forests to meet the needs of the current generation without compromising the future generation’s ability to fulfill their needs.

Afforestation: Process of planting trees in areas where they were previously not present. Creating artificial forests.

Reforestation: Restoration of forests in areas where they have been previously cleared or degraded.

Deforestation: Permanent removal of forests to make land available for other uses and to grant raw materials.

Degraded lands: Land that has experienced a decrease in quality and productivity as a result of human-induced factors.

Urbanization: Expanding urban areas (cities)

Carbon Sink: Natural environment with an ability to absorb carbon dioxide from the atmosphere.

### **III. Background information**

Early Recognition of forest management issues: The significance of forest management was first internationally acknowledged in the late 19th and early 20th century. Japan and Germany were the first pioneers in scientific forest management where they emphasized the need for controlled logging, reforestation, and a sustainable yield. But global coordination regarding this matter only started in the mid 20th century (*Paletto*).

1948: The international Union for Conservation of Nature (IUCN) was established to promote environmental conservation on a global scale (*IUCN*).

1972: Stockholm conference on the human environment which highlighted deforestation and its negative impacts on biodiversity, leading to general discussions on environmental preservation (*United Nations*).

1987: The Brundtland Report which highlighted the importance of sustainable development, including the importance of protecting forests as a means for environmental sustainability (*Federal Office for spatial development ARE*).

Major Global initiatives: The later decades would see several global initiatives made to address deforestation and promote afforestation and reforestation.

1992: The United Nations Conference on Environment and Development (UNECD) in Rio de Janeiro. During this summit several key treaties were formed including the CBD, forest principles, and UNFCCC (All of which explored in IV. Relevant UN Treaties).

1997: Kyoto Protocol and the first major step towards integrating forests into global climate strategies (Further explored in IV. Relevant UN Treaties)

2007: The Bali Action Plan which introduced the concept of Reducing Emissions from Deforestation and Forest Degradation (REDD). It is a UNFCCC initiative that would then evolve into REDD+ that focuses on the role of conservation and forest carbon stocks in climate mitigation. (*UNFCCC*)

Land Degradation and Reforestation Efforts: As the 21st century began land degradation became of great concern. More than 2 billion hectares of degraded land have been identified as having potential for forest restoration. Beginning large scale afforestation and reforestation projects.

2000: The United Nations Convention to Combat Desertification (UNCCD). It has started programs meant to restore degraded land especially in arid regions (*UNCCD*).

2011: The Bonn Challenge is launched, setting up a global goal to restore 150 million hectares of deforested land by 2020 with the initiative later expanding its target to 350 million by 2030 (*IUCN*).

2015: The Paris Agreement, again emphasizing the role of forests in meeting global climate targets. In specific, article 5 called for the conservation and enhancement of forests in order to reduce greenhouse gas emissions and adapt to climate change (*United Nations*).

#### **IV. Relevant UN Treaties**

United Nations Framework Convention on Climate Change (UNFCCC): It was adopted at the Rio summit in 1992. Its main objective is the stabilization of greenhouse gas (GHG) concentrations in the atmosphere to prevent dangerous anthropogenic interference. It recognized forests as major carbon sinks that need to be maintained through sustainable forest management (*UNFCCC*).

Kyoto Protocol: First major summit regarding climate change. It has introduced binding emission reduction targets for developed countries and put into place market mechanisms such as the Clean Development Mechanism (CDM). It is under the CDM that afforestation and reforestation projects became eligible activities for generating carbon credits. This has become a major economic incentive for forest restoration in developing and developed countries alike (*UNFCCC*).

The Convention on Biological Diversity (CBD): Adopted in the 1992 Rio Earth Summit alongside the UNFCCC. As the name suggests it focuses on the conservation of biological diversity as well as sustainable use of its components (UNFCCC). Forest species are essential in achieving the above as they house 80% of terrestrial species (*Australian Rainforest Conservation Society*).

The Forest principles and Agenda 21: Again adopted during the Rio Summit. The forest principles which are officially titled “Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation, and Sustainable Development of All Types of Forests”. The principles emphasize the importance of forests in sustainability and show the need for cooperation in forest conservation. The Agenda 21 has a dedicated chapter on fighting deforestation (*WRM*).

## **V. Major countries and groups Involved**

China: China has already been a major contributor to afforestation since the 1980s. Which is when the Green Great Wall project was initiated. Said project was made with the intention to combat desertification and land degradation. In fact the initiative has managed to effectively reforest 66 billion trees and restore a large amount of degraded lands (*Shin*).

Brazil: Notably Brazil is home to a large part of the Amazon rainforest, which due to how densely populated by different plant species it is makes it a massive carbon sink. If not for the ocean it would be the largest one, so naturally its protection is vital in solving current

environmental problems and preventing future ones. Brazil has had initiatives such as the Amazon Fund which focuses on reforestation of the Amazon and its sustainable management in order to protect biodiversity (*REDD+*).

India: The Green India Initiative is another example of focusing on afforestation and general ecosystem restoration to increase forest cover and tackle pressing environmental challenges. Interestingly it emphasizes the importance of community participation in making a difference (*MEFCC*).

United States: The United States has a previously established Forest Legacy Program which promotes sustainable forestry and conservation through federal and state partnerships. But it has also proposed the Trillion Trees Act, which as the name suggests involves planting a trillion trees both domestically and internationally to absorb more carbon and restore ecosystems (*USDA*).

Canada: Canada has a similar program to the proposed Trillion Trees Act above. It's called the Two Billion Trees Program aiming to plant 2 billion trees domestically by 2030, enhancing carbon sinks and restoring ecosystems (*Canadian Government*).

European Union (EU): The EU is another key player, interestingly Europe is the only continent in which agriculture is not the leading cause of deforestation. The EU has employed the EU Forest Strategy (2030) which aims to expand overall forest cover and improve the resilience of European forests to climate change. It has also established the LIFE Program which funds afforestation and ecosystem restoration across all of its member states (*European Union*).

## **VI. Possible Solutions**

Naturally fostering sustainable forest management as a solution tackling environmental issues will need to be designed with several angles in mind. Prevention methods which eradicate most of the need to have sustainable forest management in the first place are crucial. For example, improving and enforcing legal frameworks as a method to regulate land use and prevent illegal logging. Stricter penalties, improved monitoring, and general better coordination between governmental and non-governmental bodies will most likely help in deterring unauthorized deforestation. This paired with incentivizing sustainable practice through economic benefits such as subsidies, can encourage industries and communities to adopt environmentally friendly methods.

Technological advancements may also play a significant role in enhancing afforestation and reforestation methods. Satellite monitoring and drone based replanting could be incorporated into the current efforts. This will enable large scale afforestation projects to be a great deal more efficient. Furthermore artificial intelligence can assist in enhancing this process even further by identifying areas in most need of restoration or even automating some of the processes involved. Still, international cooperation is absolutely essential. Meaning strengthening global agreements such as the Bonn challenge or the Paris Agreement can drive the large scale restoration efforts.

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