

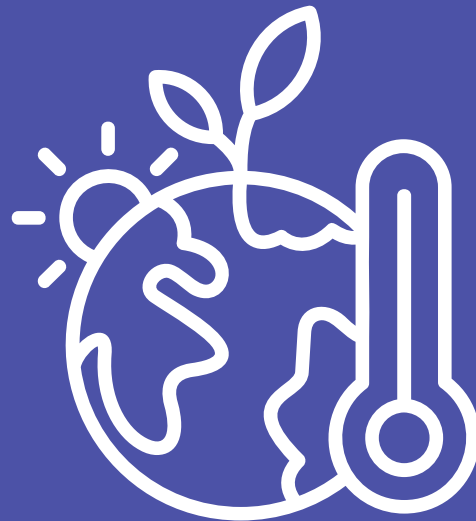
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Maria Montessori Institute Model
of United Nations



BACKGROUND

Food and Agriculture Organization of the United Nations



BY:
Mariela Montiel González
Leonardo Gael Albores
Martínez & Hanna
Carmona Juárez



@mmimunimmatlx



Search of tools and strategies that address climate change and soil erosion, while ensuring sustainability. (co-delegations)

Chair:

Mrs. President: Mariela Montiel González

Mr. Moderator: Leonardo Gael Albores Martínez

Mr. Conference Officer: Hanna Carmona Juárez

Committee History

The FAO (Food and Agriculture Organization of the United Nations) was founded in 1945 due to the goodwill of 44 nations that signed a commitment to fight hunger, when the entire world was waking up from the Second World War in the midst of devastation and food shortages. FAO is the United Nations agency leading the international effort to end hunger. Their goal is to achieve food security for all, while ensuring regular access to sufficient, good quality food to lead an active and healthy life. With 195 members - 194 countries and the European Union, FAO works in more than 130 countries around the world. We can all play an important role in ending hunger.



Introduction

Soil erosion and climate change are two interrelated phenomena that have captured global attention due to their significant impacts on the environment and the sustainability of the planet. Soil erosion, a natural process that is exacerbated by human activities, involves the gradual loss of the topsoil, affecting soil fertility and the health of ecosystems. On the other hand, climate change, driven mainly by greenhouse gas emissions, causes alterations in weather patterns, increasing the frequency and intensity of extreme events such as droughts, floods and storms.

These two phenomena are connected in various ways. Soil erosion can be accelerated by climate changes, such as heavy rainfall and extreme temperatures, which affect the soil's ability to retain moisture. In turn, soil degradation contributes to the release of stored carbon, aggravating the problem of climate change. Both phenomena represent significant challenges for food security, biodiversity and ecosystem stability.

Soil erosion and climate change are intertwined in a pernicious cycle that threatens the health of the planet. Soil, essential for food production and water regulation, is constantly losing due to unsustainable agricultural practices, deforestation and extreme climate changes. Soil degradation, in turn, releases



carbon stored in the land, contributing to increased greenhouse gas emissions that drive climate change.

Global warming, a result of climate change, affects weather patterns and the intensity of weather events. Extreme events such as hurricanes, floods and droughts become more frequent, exacerbating soil erosion. Biodiversity loss and ecosystem degradation are also exacerbated, creating a vicious cycle that threatens environmental stability and the Earth's ability to sustain life.

Addressing these challenges requires holistic approaches that combine sustainable agricultural practices, soil conservation measures, and strategies to mitigate greenhouse gas emissions. Deeply understanding the interconnection between soil erosion and climate change is crucial to developing effective solutions and working towards a future where soil health and climate stability are preserved for generations to come. In this context, we will further explore the impacts and possible solutions to address these interrelated challenges.



Historical Background

In the years from 1960 to 1970, cereal yields in Asia increased by more than 50 percent. Since then, global food production, from crops, livestock, fisheries and agriculture, has grown by an estimated 8.4 billion tons per year. This progress has also had a great impact on both society and the environment, causing various problems such as soil erosion, clogging, and soil loss of fertility.

Soil is a vital carbon sink and home to 25 percent of the world's biodiversity, hosting ecosystems that are essential to the preservation of life. Better management of soils can increase the food supply and offset up to 20 percent of current global greenhouse gas emissions, providing a valuable lever for climate regulation and a pathway to safeguarding ecosystem services.

Since 2018, FAO has been supporting over 100 countries to design and implement 159 Global Environment Facility (GEF) projects valued at USD 6.9 billion. The projects are helping governments address the critical issues at the nexus between agrifood systems, climate change, biodiversity, land degradation and international waters. They aim to improve productivity and agricultural livelihoods while boosting the sustainability of ecosystems.



The FAO-GEF partnership tackles both climate change mitigation and adaptation by avoiding and reducing greenhouse gas emissions and bolstering climate resilience. FAO seeks to enhance its support to Member Nations on climate change adaptation and mitigation, to build climate-resilient and low-emission agrifood systems while striving to achieve the Sustainable Development Goals (SDGs), and in particular to eradicate hunger and malnutrition (SDG 2).

Making agrifood systems more efficient and sustainable requires rethinking current agricultural policies, advancing innovation and revolutionizing management approaches.

Current importance

Soil erosion restricts our ability to produce nutritious food; by decreasing the nutrients available to plants, as well as the space for roots to develop, soil erosion can reduce agricultural yields by up to 50%. Additionally, crops tend to be of lower quality: misshapen, smaller and less nutritious. This low-quality product has consequences not only for the farmers who try to sell it, but also for the people who will obtain fewer nutrients by consuming it.



Soil erosion means the removal of the top, most fertile layer of soil. It means that soil minerals and nutrients are deposited elsewhere, often degrading traditional ecosystems. Additionally, deposited sediment can accumulate in reservoirs or flood rivers and streams, depriving people of the resources and energy they provide.

Soil captures, stores and filters water, so when it erodes, it allows less water to pass through it. Without soil, the quality of drinking water in the lowlands can decrease, as the water was not adequately filtered through the soil upstream. Additionally, with less soil to absorb torrential rains, flooding can become more frequent and intense.

Soil erosion damages urban infrastructure; When soil is not supported by plant roots, it can easily be blown away by wind or water. As a result, loose and eroded soil can make flooding, landslides, and hurricane-force winds more intense. These natural disasters not only destroy farms, but can also damage urban infrastructure that provides vital services to city residents.

More than 68 million people have been displaced from their homes around the world, many of them due to climate-related issues. Soil erosion only exacerbates the effects of climate change: with less soil,



ecosystems have less resilience to adapt to new temperature and precipitation patterns. As soil depletion exacerbates the effects of weather events, people's livelihoods are increasingly affected, and more people may be forced to move elsewhere.

International and UN Acts

The UN has adopted various initiatives and programs to address soil erosion and climate change:

- **United Nations Convention to Combat Desertification (UNCCD):** This convention, established in 1994, focuses on combating desertification and land degradation, as well as the sustainable management of drylands. The UNCCD works to promote sustainable development practices globally, especially in regions affected by desertification.
- **Sustainable Development Goals (SDGs):** The SDGs, established in 2015, include specific goals related to soil conservation and climate change mitigation. Goal 15 focuses on the life of terrestrial ecosystems and seeks to combat desertification, stop the loss of biodiversity and ensure the sustainable management of forests
- **Global Soil Partnership:** This initiative, launched in 2015, seeks to address global soil-related challenges and foster collaboration between different stakeholders, including governments, international organizations, scientists and civil society.



Points to discuss

- **Identify** and discuss the main causes of soil erosion and climate change.
- **Explore** the direct and indirect consequences of these phenomena on biodiversity, agriculture, water resources and food security.
- **Analyze** how soil erosion and climate change are interrelated, and how one can aggravate or accelerate the other.
- **Examine** how agricultural practices, deforestation, and other factors contribute to both problems.
- **Discuss** how soil erosion affects agricultural productivity and the land's ability to support life.
- **Explore** sustainable and resilient agricultural strategies to mitigate these impacts.
- **Explore** strategies for soil conservation, reforestation and ecosystem restoration as preventive and corrective measures.
- **Discuss** the importance of adaptation and resilience to climate changes, especially in vulnerable communities.



Possible solutions

- Promote regenerative agriculture, which promotes crop rotation, the use of vegetative covers and agricultural techniques that preserve soil health.
- Implement agroforestry systems that combine food production with tree planting to prevent erosion and improve biodiversity.
- Promote public awareness about the importance of soil conservation and climate change mitigation.
- Educate farmers, local communities and policy makers on sustainable practices and adaptation strategies.
- Support scientific research to develop innovative technologies and practices that improve soil resistance to erosion and promote climate change mitigation.
- Promote collaboration between countries to jointly address soil erosion and climate change, sharing knowledge and resources.



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