



UNFCCC-TOPIC 2- Measures to improve the land use with special regards to agriculture

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I. Introduction to the committee

The United Nations Framework Convention on Climate Change (UNFCCC) is a UN organ, formed to combat climate change by limiting average global temperature increases and the resulting climate change and cope with impacts that were inevitable.

The UNFCCC was established on 21 March 1994 and today it has near-universal membership with 198 member states.

II. Introduction to the topic



Soil is one of the most important resources on Earth and plays a crucial role in the survival of plants, animals, and humans.

29% of the Earth is covered with land mass. Of these, 37% are usable for agriculture purposes. On the one hand, this is because a large part of the soil is in mountains, deserts, and marshes. But on the other hand, much of the soil is contaminated by industry, agriculture, and environmental pollution, for examples by chemicals.

Contaminated soil can never be restored to the way it was before. 10 centimetres of contaminated soil takes 2000 years to be usable again.

It is therefore the duty of the UNFCCC to protect the world's soils so that it can continue to fulfil its tasks and ensure a good climate.

III. The importance of soil in our lives

Soil is extremely important for our lives, as it forms the foundation for the nutrition and livelihood of plants and animals, which in turn are important sources of food for humans. Soil is also an important storage for water and nutrients that are needed for the growth of plants and animals.

Furthermore, soil is an important factor in regulation the climate, as it stores carbon and helps to reduce the carbon content in the atmosphere. Soil is also important for biodiversity, as it provides habitat for a variety of organism.

However, soil is also at risk due to human activities such as agriculture, deforestation, and land use changes, which can lead to soil degradation and soil pollution. Therefore, it is important to protect soil as a valuable resource and promote sustainable land use practices.



IV. How agriculture affects the soil



Agriculture can have both positive and negative effects on soil, depending on the specific practices and management techniques used.

a. Fertilizers and pesticides

Most damage is done by fertilizers with chemicals that damage the soil in the long term and make it infertile.

Overuse of fertilizers can lead to soil degradation and reduces soil fertility, this occurs when excess nutrients in the fertilizers cause a build up of salts and minerals in the soil, leading to soil compaction, reduced water infiltration, and reduced soil structure.

Additionally, the production and use of fertilizers contribute to greenhouse gas emission, including nitrous oxide, a potent greenhouse gas that is produced when nitrogen fertilizers are applied to crops. These emissions contribute to climate change and its impacts, including rising temperatures, sea level rise, and more frequent and severe weather events.

Furthermore, insects and other microorganisms get killed so there is no regeneration of the soil. In this case farmers must use more and more fertilizers and pesticides to guarantee their harvest which reduces the quality of soil every year. Furthermore, it contaminates the groundwater which affects us in our daily life.

To mitigate the negative impacts of fertilizers, it's important to follow recommended application rates and to use fertilizers that are appropriate for the specific crop and soil conditions. Additionally, adopting sustainable farming practices like integrated nutrient management, conservation tillage, and crop rotation can help to reduce the need for synthetic fertilizers and promote soil health and fertility.

b. monocultures

Monocultures came along with the industrialization of agriculture because large and uniform fields can be treated better with agricultural engines. Trees, bushes and flowers, sometimes rain forest are cleared, which not only damages the soil but also affects the climate. Furthermore, the roots of the different plants can no longer hold the soil and there is erosion.

Additionally, crops in monocultures are more susceptible to diseases. If one is infected there is a high risk of losing the whole harvest. To combat this, pesticides are used which, as already mentioned, damages the soil, and contaminates the groundwater.

Moreover, monocultures make the soil infertile in the long term. This is caused by one-sided leaching of certain nutrients and the humus content of soil falls, consequently soil composition changes. In addition, yields, water absorbency and water storage capacity decrease in long term.

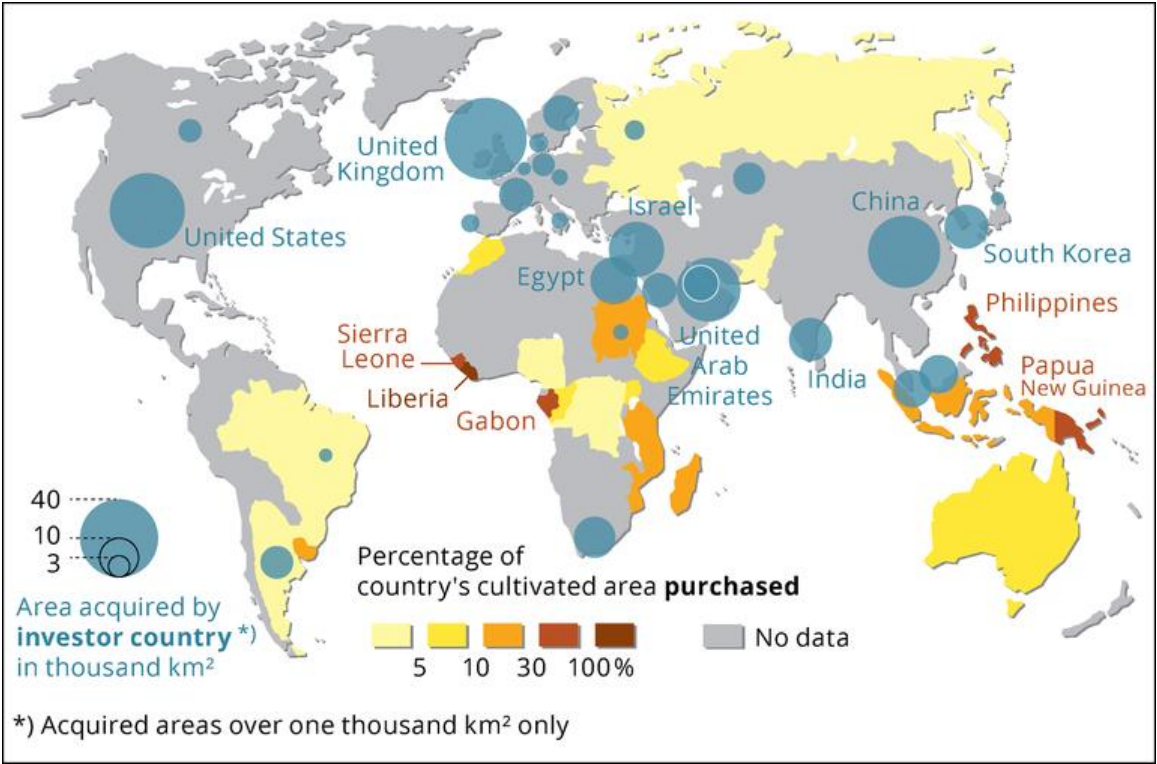
To improve agriculture regarding monocultures there are many possibilities. Of course, the best solution for our essential soil is to ban monocultures but there are some other less drastic measures as well. For example, two crops could be sown at the same time on the same area. That fixes nutrients and thus prevent them from leaching into groundwater. Furthermore, it builds up humus and protect against erosion. Additionally, with the cultivation of legumes (e.g. clover) the soil is enriched with nitrogen again.

V. Land grabbing

The growth of the world population and the concomitant increasing demand of food and fuel is the reason for land grabbing. With land grabbing, foreign private investors, and corporations secure large areas of land in developing countries by means of purchase or lease contracts. The agricultural land is used by the investors to grow food or plants to produce fuel. The entire yield is exported from the country of origin after the harvest – to the benefit of the rich industrialized countries. With the management of external arable land, the foreign companies ensure the food, water, and energy supply of their own country. In return, the county whose agricultural land is used, is exploited. Important nutrients are extracted from the soil by the use and fertilizers contaminate the groundwater. Often the investors do not bear in mind to use the soil sustainable because the county whose agricultural land is used has to bear the consequences. Furthermore, local farmers lack arable land, and they have to leave their area. In land grabbing, powerful corporations or wealthy private investors face a poor, often destitute rural population in developing countries. Often the illegal transactions remain hidden and therefore difficult to trace. Only 30% of the world's population owns legally registered ownership of their land. In Africa, for example, only 10% of the land area is registered, while the rest is undocumented and managed informally, which makes land grabbing easier.

Since 2008 ranges between 45 million and 227 million hectares globally are affected by land grabbing. The United States, United Kingdom, and China are the most active

transnational investors in land while the Philippines, Gabon, Liberia, and Papua New Guinea are the countries with the largest share of land that has been purchased by foreign investors.



<https://www.eea.europa.eu/data-and-maps/figures/transnational-land-deals-1>

VI. past actions

The Koronivia Joint Work on Agriculture (KJWA) (2017):

Involved Parties:	Conference of the Parties (UN)
Purpose:	advance discussions on agriculture in the United Nations Framework Convention on Climate Change (UNFCCC)
Outcome:	recognizing the unique potential of agriculture in tackling climate change

Proposal from the European Commission (2021):

Involved Parties:	European Commission
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Purpose:	amending Regulations (EU) 2018/841 as regards the scope, simplifying the compliance rules, setting out the targets of the Member States for 2030 and committing to the collective achievement of climate neutrality by 2035 in the land use, forestry, and agriculture sector, and (EU) 2018/1999 as regards improvement in monitoring, reporting, tracking of progress and review
Outcome:	The legislative proposals will be transmitted to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions for further consideration under the ordinary legislative procedure.

Sharm el-Sheikh joint work on implementation of climate

action on agriculture and food security (2022):

Involved Parties:	Conference of the Parties (UN)
Purpose:	Improvement in agriculture and food security based on the Koronivia Joint Work on Agriculture (KJWA)
Outcome:	new agreements on agricultural losses and damage

VII. Conclusion and solution approach

As already mentioned, this issue can affect our daily life because soil is the basis for our food and other things. This is a global issue and international cooperation is required. Not only international cooperation is needed, but also at the municipal, national, and international levels, should be put into action, along with stronger laws and rules for agriculture.

Not only higher institutions, such as governments and NGOs, play a significant role in protecting our soil, but also individuals. By making conscious choices in their daily lives, such as supporting organic farming. Organic farming is an agricultural system that uses ecologically based pest controls and biological fertilizers derived largely from animal and plant wastes and nitrogen-fixing cover crops. This method uses fewer pesticides, reduces soil erosion, decreases nitrate leaching into groundwater and surface water,

compared with conventional agriculture. Furthermore, it emphasizes techniques such as crop rotation and companion planting. In conclusion, organic farming could, for example, counteract the issue of fertilizers and pesticides.

Only having stricter laws and further research will not help regarding this issue unless public awareness is raised. For that, it is important to organize campaigns that help raise awareness about the importance of sustainable agriculture and the impacts of human activities on the soil.

In conclusion, the protection of our vital soil is a critical issue that requires urgent action. Unsustainable agriculture has far-reaching consequences for both the environment and human societies, and it is essential that we take steps to address the issue.

VIII. Helpful links

<https://www.fao.org/koronivia/about/en/>

(The Koronivia Joint Work on Agriculture (2017))

<https://climatenetwork.org/resource/climate-action-network-submission-to-the-sharm-el-sheik-joint-work-on-implementation-of-action-on-agriculture-and-food-security/>

(Sharm el-Sheikh joint work on implementation of climate action on agriculture and food security (2022))

<https://www.eea.europa.eu/data-and-maps/figures/agricultural-land-use-intensity-1>

European environment agency

<https://ourworldindata.org/land-use>

interactive charts on land use

IX. Sources

[Why are soils important? | ISRIC](#)

<https://www.developmentaid.org/news-stream/post/146088/what-is-land-grabbing>

<https://unfccc.int/decisions>

<https://blog.ica.int/en/blog/cop27-growing-roles-agriculture-and-food-security>

https://climate.ec.europa.eu/eu-action/european-green-deal/delivering-european-green-deal/land-use-forestry-and-agriculture_en

<https://www.britannica.com/topic/organic-farming>