

COMMITTEE GUIDE

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Valentina Martinez & Mariana Moreno

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Presidents' Letter

Dear Delegates,

We are delighted to extend you a cordial greeting to the twenty-first version of CCBMUN, and we are honoured to have you as a part of the United Nations Environment Program Committee. Our names are Valentina Martínez and Mariana Moreno, students in 10th and 11th grade at Colegio Americano and Colegio Berchmans. As your presidents, our highest goal is to provide you with the best UN model experience and be a source of help, not only in understanding the guide and procedures but also as a guide for you to become an exceptional delegate. We hardly believe that MUN is a valuable and unforgettable life experience.

Both of us have participated in multiple models in the past, so we can relate to you as delegates. The fear and nerves are feelings that we have experienced, so we expect that you can find support in us, as we are here to help you increase your argumentation and debate skills. We would be satisfied to accompany you, delegates, to take your research to the next level, and encourage you to give your finest endeavour to have the greatest time sharing your thoughts and defending your ideals to the committee. Be aware that the MUN community is more than just debating and finding resolutions, it is a place to make new friendships and to expand your social circle.

We strongly believe that you will trespass your own expectations as a delegate, by researching in detail more than provided, and use that as your advantage to create by yourself those high standards that you must have created. As your president, we will dispense you with all the resources and guides you need in order to complete this process successfully. We are here to sympathize with you and to assist you, not only through the three days of the model, also since before.

Lastly, but not less important, since UNEP is a middle school commission, we must mention that experience and a whole knowledge of procedures are not the main requirements to be an excellent delegate; The only aptitude you need is passion- the rest it will arrive along with your experience! We are thrilled and excited to meet you, and have you as our delegates, as



it is our first time being presidents, we really hope to reach your expectations. Keep in mind that we are here to support you, so if you have any questions do not hesitate to contact us via the following email: unep@ccbcali.edu.co

Sincerely,

Valentina Martínez & Mariana Moreno

(UNEP) Chair

Simulation: *Monoculture*

I. History/Context

A monoculture is known to be the practice of cultivating large extensions of land with crops of a single species, where they apply **the same patterns** of cultivation, watering, fertilisation, and collection; This results in the production of large quantities of a single product at a very **low cost**.

The constant population growth and the increase of the capitalist economy seek to supply the market of agricultural products, so it is essential to find methods that allow the realisation of large-scale production while at the same time being cost-effective. For this reason, and taking advantage of the growing industrial development, monoculture is the most **economically viable alternative**; that is to say, the monoculture economy is based on higher productivity with low labour costs.

II. Current Situation

However, this practice can be a danger to the surrounding **ecosystems**, as they are large extensions of land, all types of habitats and terrestrial species that are located in them must be eliminated, and in this way, only one type of cultivar will survive.

Also, it is of utmost importance to highlight the destabilization of the soil, since these constant plantations produce a depletion, and gradually begins to lose nutrients, provided

by the same substances of the components of monoculture, losing its essence; since the practice of monoculture is not based on natural environments, if not imitations, these gains are synthetic, so the consumption of its products in high quantities can be harmful to human consumption. In addition, due to the large amount of waste they emit, these degrade the quality of groundwater.

This process also requires high amounts of pesticides, so another of its negative consequences is the contamination of the environment, water, and air. At the same time, this provides food for other species, but in the absence of diversity, these species feed on a single type of plant, and can easily become pests, which tend to grow excessively. A wide variety of flora and fauna provides the necessary amount of vital nutrients, which ensures that a single species does not damage too many crops.

In addition, the process of constant harvesting and cultivation does not allow the soil to recover nutrients that give way to more plantings, which results in erosion; Nature activates its natural defense mechanisms, thereby increasing resistance against synthetic compounds. This is not a good thing, as it drives food producers to integrate more inorganic countermeasures, and as a result, more chemicals are poured into monoculture crops, causing more damage to the environment. Also, the process of constant harvesting and cultivation does not allow the soil to recover the nutrients that allow more planting, which results in soil fertility depletion and erosion.

Environmental and economic consequences

In a conventional/traditional monoculture environment, ground humidity is extremely unstable, which drives the need to take huge amounts of water to irrigate plantations, resulting in unstable drainage of rivers and reservoirs, and as a final consequence, contaminating natural resources and aquatic life.

The risks of this practice are not only environmental, but also socioeconomic, as it has become an excuse to expropriate farmers in order to obtain cultivable land. Similarly, the phenomenon of erosion does not allow the land to be reused by a small number of farmers, and the industrialization of the process requires minimum labor, and consequently does not generate enough employment in the region. But by allowing the production of large quantities of product, this also allows its market price to fall, making it much more



affordable to the market for basic necessities. The use of fossil fuel energy is a key part of this, since the packaging and distribution of crops requires its use, which contributes significantly to climate change. The human population is on the rise, and as mentioned before, there is a need for higher yields of plantations so that people living on the planet can have access to organic and nutrient-rich food at affordable prices.

Monoculture acts contrary to the ecological cycle of traditional farming. For this reason, multiple models have been presented that seek to replace this practice, and among them are "regenerative agriculture" where work is done according to the natural pace of nature.

This is expected to strengthen soils that have been damaged by the excessive and constant use of fertilizers as in monoculture, thus mitigating the impacts of this practice. Countries such as the United States use methods such as direct sowing, so the soil health can improve and the ecosystems can grow proper. Brazil uses techniques such as agroecology to restore the biodiversity hurt by monoculture and improve the soil quality. India in the last decade has been implementing direct sowing and conservative agriculture, also Kenya and Australia. France has quite a giant pesticide problem, so they are implementing those methods to reduce pesticides use and improve the biodiversity, which is the main goal of those countries that are highly recognized for their constant use of this practice.

Alternative solutions

Regenerative agriculture emphasizes the conservation and enhancement of biodiversity, and as its main features: nutrient-abundant crops, crop resilience, safer working environments, pollinator enhancement, livestock, and farmland profitability. Therefore, the question of the efficiency of monocultures is in a continuous comparison with its opposite practice.

NASA statistics predict direct impacts on corn and wheat production in the United States by 2030, in addition to the fact that higher temperatures will increase pest infestations and decrease the effectiveness of the pesticides so widely used by monoculture.

Is food demand a sufficient reason to reduce the quality of life by deteriorating the environment?

Positive Effects



The positive effects of this farming method are often seen in the cultivation of rice, which is grown in humid-like conditions, and in the cultivation of wheat, which is grown in flat areas with a high amount of sunlight.

Plants that manage to thrive and resist in diverse climatic conditions, such as drought, wind or cold temperatures, are the focal points of the monoculture system, while, on the contrary, traditional agriculture seeks a more complex and extensive program to maximize the production of different crops, but despite traditionalist efforts, the efficiency of monoculture tends to be higher.

For monoculture maximization, farmers seek additional financial resources to consult new agronomic technologies. Among these solutions are drones and ground sensors, which are used for complex monitoring of specific fields and to manage all stages of planting.

Industrial crop planting allows growers to specialize in a specific crop, and its greatest advantage is that it increases profits and reduces costs, since being a specific type does not require special or additional machinery, but only the necessary implements for the type of crop to be planted.

When a single type of plantation is grown, it is much easier to monitor it by satellite. Some types of crops such as cereals are considered to have better yields and fruits when grown as monocultures, i.e. without other additional crops in a field.

Monoculture is much easier compared to polycultures, since cultivating only one type of crop requires less effort, knowledge, resources and time than cultivating several types of plantations, as well as the use of machinery, pesticides, soil preparation and so on.

Generally these homogeneous practices give higher profits, since they are better adapted to the development in specific climatic conditions, giving better yields, and thus, better income.

Pesticides and pests

Farmers who adhere to these practices face more difficulties in terms of pests, which are known to increase over the years.

Pest management, increased use of pesticides and soil degradation and loss of soil fertility are among the major problems that monoculture brings with it.

When too many species of the same category are planted in a field area, they begin to steal nutrients, decreasing the bacteria and microorganisms that are needed to maintain soil fertility.

If there is only one type of crop for a given area, the systems will not be sufficient and will not be able to maintain the soil structure around the plants, causing erosion and loss of water absorption. For this reason, the soil around these plantations often lacks the necessary layers of topsoil, causing imbalances in water retention in these croplands, and unfortunately, to combat this damage, farmers must take large amounts of this important resource, and this depletion has extremely serious consequences for the ecosystems of these water sources.

Diversity and Pollinators

Biological diversity and the agricultural sector are no exception when talking about key points of this practice. For an ecosystem to be rich and functional, diversity is needed, but the problem with this agricultural strategy is that it promotes the elimination of ecological diversity, and this is problematic in every sense, since a wide variety of beings controls the proliferation and excessive spread of pests.

The impact on pollinators is another effect of this agronomic project. Pollinators are very important participants in the natural reproductive cycle like bees and so on. But, the increasing use of pesticides, herbicides and other harmful chemicals, damages the health of these beings, and in most occasions, kills them, and those who do not suffer from this unfortunate fate, because of the homogeneous food, suffer deficiencies due to the low diversity of their food diet.

Economic deficiencies

As mentioned above, the environmental issue is not the only one that concerns this concept, since the economic part must also be taken into consideration as a fundamentally remarkable point.

By concentrating only on plantations of the same category, the farmer puts at risk the entire potential harvest of the given hectares of land, and the reason for this is quite simple. By not having certainty about the weather conditions, and only having a specific type of plantation, there will be no way for some to survive because they proved to be more resistant than the others, since they are the same. So, in this way, monocultures can lose their entire crop, and clearly, their income for the season.

Some examples of the use of this crop are Ireland, where the exclusive use of one variety of potato led to an event known as "The Great Famine" which occurred from 1845-1849, where potatoes were propagated with little or no genetic variety, which caused the almost total failure of the crop at the time, thus generating a severe famine.

Impact of the United Nations

A 2021 joint report by the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP) and the Food and Agriculture Organization (FAO) found that 87 percent of the \$540 billion spent annually on agricultural support distorts prices or is harmful to nature and human health. It is not necessary to increase the budget, but to put it to better, more equitable, and sustainable use in both economic and social terms.

Modern agriculture has had large-scale achievements in reducing poverty and improving food security, but at the same time, it generates climate degradation, which is why multiple agricultural practices must be taken into account and their performance and investments carefully analysed; financial support for producers amounts to almost 540 billion a year, and this is not being adequately divided in order to generate a sustainable form of cultivation. That is why the United Nations recommends redirecting these subsidies so that they can be used to build better-used, fairer global food systems rather than distorting prices and generating unacceptably high costs for the environment, nutrition, health, and equity.

Summit, UNEP (2021) "If policy reforms in support of agriculture are put forward, they can be part of a global redesign that puts nature at the centre of our future survival."



In developed countries, the dairy and meat industry is initially sponsored, while in developing countries, fertilizers and pesticides are mostly sponsored where they encourage the growth of monocultures of staple food basket products.

Although the reorientation of this economy will not be the same for every nation, since each one has its own economic and social model, and must be evaluated according to its context, there are some basic principles that should be established among nations, some of these existing ones are those presented below by the United Nations environmental committee: Measure the financial support provided; understand its positive and negative impacts; identify reuse options; forecast its impacts; refine the proposed strategy and detail its implementation plan; and, finally, monitor the implemented strategy.

III. Key points of the debate

- Impact of pesticides, fertilization, and erosion on the environment.
- Security in the food sector (dependence on a single crop and its economic and food damage)
- Economic impact (both for the farmer and the United Nations)
- Social Impact (Farmers and society in general)
- Sustainability of this practice
- Sustainable alternatives/ different practices
- Large scale production
- Elimination of regulations
- Agreements between Nations

IV. Guiding questions

1. What is the practice of monoculture and what are its main characteristics (economic, social, environmental)?
2. What role does your delegation play in monoculture?

3. Does your delegation support this practice economically? If so, in what way (monetarily or technologically)?
4. Has your delegation suffered damage from monoculture?
5. What alternatives does your delegation propose for economic improvement?
6. What solutions does your nation propose for the damage caused by pesticides (either in your nation or in an allied country)?
7. Does your delegation agree with regularisation and agreements for their use?
8. Does your country have agricultural companies that strongly support this practice?
9. How can your nation meet the affordable demand for this product without increasing its labour force?
10. What is your nation's role in this issue with respect to the United Nations?
11. How can your delegation foster international support and ideological and technological exchange?

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