Forum: United Nations Environmental Program (UNEP)

Issue: Implementing Measures to Improve Sustainable Agricultural Productivity

Chair: Sean Kim

Introduction

Sustainable agriculture is an ecosystem approach to agriculture, rather than viewing agriculture based on the needs of humanity. In this aspect of agriculture, the environment always comes first based upon the principle that if certain agricultural practices are destructive in nature, there will be nothing left for humanity to work within the future. Therefore, sustainable agriculture can be seen as a way to guarantee a safe and reliable source of food in the future. Practices that cause damage to the soil which causes excessive tiling and practices that cause salinization due to inadequate drainage systems are some examples of practices that are highly discouraged upon by the idea of sustainable agriculture.

The United States of America exhibits much expertise in this field. The USDA Natural Resources Conservation Service, a federal agency of the United States, provides monetary and technical assistance to farmers that are willing to practice sustainable agriculture. The USDA also has laws that prohibit certain practices that are too harmful to the environment. It also funds research and other extensions. Integrated Pest Management, rotational grazing, soil conservation, water quality, cover crops, crop/landscape diversity, nutrient management, agroforestry, and alternative marketing are all methods and programs that are supported by the USDA.

As this is an issue that cannot be forced upon due to multiple reasons, delegates must find a way to make compromises but also advocate for the passing of certain crucial solutions at the same time. Results may not be good if certain solutions pass, due to the massive economic shift it may bring.

Definition of Key Terms

Sustainability

Sustainability is the process of not looking at matters in a way that benefits humans the most but benefits the ecosystem and humans at the same time. As humans are living on Earth, humans cannot simply exhaust Earth and move on — they must find ways to keep the ecosystem healthy. For a long

time, humans have not taken good care of the environment and the ecosystem, not knowing that this might all come to an end. Therefore, it is the current generation and future generations' duty to take care and restore balance.

Agricultural Practices

Agricultural practices can be divided into two parts: good agricultural practices (GAP) and agricultural practices that are harmful. In general, agricultural practices are a collection of ideas that are applied to agriculture to receive a better (both qualitative and quantitative) product. Good agricultural practices are supported by and given subsidies by many governments. GAPs are used to create food for consumers that are safe and good for the environment at the same time.

Agroecology

Agroecology is the study of techniques and methods applied to agriculture. Unlike popular perception, agroecology does not ban the use of technology being applied to agriculture but rather pertains to when and where technology should be used to increase the productivity of sustainable agriculture. Agroecology stresses that there is no solution that applies to all regions (universal solution) and solutions should be region-specific.

Gentically Modified Crops (GMCs)

Genetically Modified Crops are plants used in agriculture that is modified to yield better plant to fruit/grain ratio or targeted to resolve certain diseases that might be plaguing a certain species. It instills a new trait in the crop which does not naturally occur in the species. However, much conflict has gone in this, as there are ethical issues and environmental impacts, notably that GMCs disrupt the environment as there are certain organisms feeding on the crop, but the crops possess a repellant trait and therefore causes a disruption.

Values-Based Consuming

Rather than consumption for the reason that it is cheap etc., values-based consumption is consumption that considers the value aspects before consuming. One example of this is consuming animals that are not abused. There are many cases where animals are fed certain nutrients in order to grow faster or in the case of chicken, put into cages the size of a small box for their entire life to lay eggs. Because of this, values-based consumers object to this and do not consume these products.

Background Information

Development

Development in society has lead to an increase in research on new methods to raise crops and new genetic modifications for crops. As technology increases, humans have gained the ability to live longer and subsequently, leading to a growth in population after the industrial revolution. Also, human development is highly dependent on the number of resources it is provided with. However, with only a limited amount of space to grow resources such as crops, humans have turned to technology to solve the problem. Technology has been mostly beneficial, but with severe downsides. Technology such as pesticides harm the environment greatly and disturb natural balance, even though it helps farmers yield a greater amount of grains and crops.

Pollution

Pollution is a serious problem that is present when viewing methods to increase the productivity of agricultural solutions. These are usually byproducts of agricultural methods that result in contamination of the environment and surrounding ecosystems, sometimes dealing irreparable damage. There are many ways the environment can be polluted: point source water pollution, non-point source pollution, etc.

Pesticides and herbicides in order to control pests and unwanted plants is a major factor in polluting the environment. Even though this is effective to kill pests and unwanted grass, it causes toxicity to organisms residing in the soil. Pesticide also builds up when animals consume grass or other organisms that took in pesticide, and some doses can be lethal to animals.

Fertilizers are another problem. As only a little amount of fertilizers get converted into plant matter, the excess becomes runoff into streams and rivers. This causes groundwater pollution to happen when water gets mixed in with the nitrogen-based fertilizer at high amounts. This has lead to reported cases of blue baby syndrome, where the baby has multiple problems at the time of birth and onwards, and also causes airborne pollution as ammonia is released into the air.

Green Revolution

The Green Revolution, also known as the third agricultural revolution, is a revolution where research and initiatives began to take place in order to increase agricultural production. It has been met with good opinions and criticisms at the same time, due to reasons similar to others. The Green Revolution had become the stepping stone for high-yielding varieties (HVYs) in grains, and new methods of cultivation. Although certain methods outlined in the Green Revolutions are beneficial, there has been some over usage of others, leading to a significant environmental impact.

Major Countries and Organizations Involved

Brazil

Brazil is a case where sustainability plunged alongside the economy. Before the economic plunge of Brazil, Brazil did have certain hints of sustainability, as it was and is one of the biggest exporters of food in the world. However, sustainability became an issue to deal after the country had recovered from its economic plunge, and outbreaks of diseases within livestock, and methods of agriculture that are not sustainable are prevalent today.

China

Being the biggest exporter of foods in the world, China is always subject to criticism. China has been infamous for leaving farmers alone to grow foods in methods that arenâ€™t environmental friendly, although the government does touch upon certain major corporations. China is currently in the process of trying to make improvements in their infrastructure so that they can better facilitate environmental-friendly methods of agriculture.

France

France is currently perceived as the most sustainable in the field of agriculture than any other nation. France currently implements many compensation solutions and subsidies for farmers that are utilizing methods that are environmentally friendly. Even though France does not export much food, it is still the global leader in agriculture sustainability.

United States of America

Agriculture is a significant industry of the United States of America, as the USA is a big exporter of food. Hybridization and improvements in agricultural productivity started in America from the times of George Washington Carver, where he modified and studied peanuts to yield better crops. Over the years, much development has taken place, and the USA is one of the biggest countries to support agricultural methods that are environmental-friendly.

Timeline of Events

Date	Description of event
1970s~1980s	Green Revolution Begins leading to an increase in agricultural productivity.
15 July 2015	Addis Ababa Action Agenda passed after 2015 Third International Conference

	on Financing for Development was held in Addis Ababa The agenda created infrastructure for foreign funds to invest in sustainable development
17 August 2015	Resolution A/RES/69/313 adopted This resolution aims to exemplify the Addis Ababa Action Agenda
2 December 2015	Resolution A.C.2.70/L.12/Rev.1 is passed This resolution advocates for marine resources to be used adequately in order to better sustain environmentally friendly agriculture
26 July 2011	ECOSOC 2011/17 resolution passed This resolution aims to target governments that are inactive in implementing environmentally friendly agricultural methods

Relevant UN Resolutions and Treaties

- **A/C.2/70/L.12/Rev.1**
- **ECOSOC 2011/17**
- **A/RES/51/171**
- **A/71/283(Report)**
- **A/RES/69/313**

Possible Solutions

Delegates are reminded that even though many solutions can seem viable, there can be small aspects of the solution where it does not become viable, due to economic and social reasons. Even though the United Nations Environmental Program should be focused on environmental issues, it also has to consider other aspects of the solution that determines it viable or not.

Reviewing solutions and government structure to facilitate more sustainability as well as sharing this information with other member nations is crucial in the status quo. Currently, there hasn't been much communication that has been facilitated between member nations. Also, inefficient

government structures have been inhibiting the process of the development of more comprehensive solutions. When governments shift their gear towards a stance where they are more willing to take on economic and social impacts for environmental benefits, that allows for better development of solutions. With that, countries should also shift their gear towards providing subsidies and compensation for farmers that exercise good agricultural practices, as these usually tend to make up for the economic loss farmers might have when implementing good agricultural practices.

Education of the young on sustainable agricultural practices. Although short term solutions are existent, delegates should also focus on long term solutions. Currently, not many countries implement education on sustainable agricultural practices, and even in the places it exists, does not provide much impact. Due to this, delegates should mainly target rural areas to educate the youth about the advantages of sustainable practices and discourage practices that can harm the environment. However, this does not mean that the education should only pertain to rural areas. Educating the youth is a necessity, even in urban and suburban regions.

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