



Forum: General Assembly 3

Issue: Preparation for the changing in farming practices to cope with climate change.

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Introduction

The issue of climate change continues to rage on, resulting in there being a need in the transformation or improvement of farming practices. It is imperative to understand the effects that climate change has on agricultural systems. Climate change is inextricably linked to energy scarcity and water paucity, therefore adversely affecting the amount of yield that a country produces. In addition to this, farming cannot be disconnected to the economy and food security of a nation. Therefore, considering these two factors, agricultural systems should move towards modes of farming that are not only highly productive but highly sustainable considering the problem of climate change.

13% of GHG (Green House Gas) emissions come from agricultural operations. Current farming methods are depleting the earth's resources and at the same time increasing global warming, affecting climate change.

(100-250 words)

Key Terms

- Sustainable - able to be upheld or defended
- Depletion - reduction in the number or quantity of something
- Climate Change - a change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.
- Farming methods – agricultural concepts that are implemented
- Adaptation - adjustment or preparation of natural or human systems to a new or changing environment which moderates harm or exploits beneficial opportunities
- Adaptive Capacity - The ability of a system to adjust to climate change (including climate variability and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences.

- Aerosols - Small particles or liquid droplets in the atmosphere that can absorb or reflect sunlight depending on their composition.
- Albedo - The amount of solar radiation reflected from an object or surface, often expressed as a percentage. (The use of solar may be less harmful to the environment)
- Alternative Energy - Energy derived from nontraditional sources (e.g., compressed natural gas, solar, hydroelectric, wind)
- Agroecology – The application of ecological science to the study, design for the management of sustainable agriculture.
- Mitigation – the act of relieving or alleviating a harmful practice
- Anthropogenic - Made by people or resulting from human activities. Usually used in the context of emissions that are produced as a result of human activities

- Anthropogenic climate change - Man-made climate change - climate change caused by human activity as opposed to natural processes

- AR5 - The Fifth Assessment report from the Intergovernmental Panel on Climate Change (IPCC) was published over 2013 and 2014. It says scientists are 95% certain that humans are the "dominant cause" of global warming since the 1950s.

- Bali roadmap - A plan drawn up at the UN Climate Change Conference in Bali, in December 2007, to pave the way for an agreement at Copenhagen in 2009 on further efforts to reduce greenhouse gas emissions after the expiry of the Kyoto protocol Protocol. The roadmap gave deadlines to two working groups, one working on the Bali action plan, and another discussing proposed emission reductions by Annex I countries after 2012.

- Cap and trade - An emission trading scheme whereby businesses or countries can buy or sell allowances to emit greenhouse gases via an exchange. The volume of allowances issued adds up to the limit, or cap, imposed by the authorities

- Carbon footprint - The amount of carbon emitted by an individual or organisation in a given period of time, or the amount of carbon emitted during the manufacture of a product

- Dangerous climate change - A term referring to severe climate change that will have a negative effect on societies, economies, and the environment as a whole. The phrase was introduced by the 1992 UN Framework Convention on Climate Change, which aims to prevent "dangerous" human interference with the climate system

- **Global Warming vs Climate Change** - Many people use these two terms interchangeably, but we think it's important to acknowledge their differences. Global warming is an increase in the Earth's average surface temperature from human-made greenhouse gas emissions. On the other hand, climate change refers to the long-term changes in the Earth's climate, or a region on Earth, and includes more than just the average surface temperature. For example, variations in the amount of snow, sea levels, and sea ice can all be consequences of climate change.
- **Factory Farming** - a system of rearing livestock using highly intensive methods, by which poultry, pigs, or cattle are confined indoors under strictly controlled conditions.

Agriculture can be divided into three main types:

Arable farming grows crops, eg wheat and barley

Pastoral farming is raising animals, eg cows and sheep

Mixed farming is both arable and pastoral

Agriculture can be intensive or extensive:

Intensive agriculture uses small areas of land with lots of expensive inputs, such as market gardening

Extensive agriculture uses large areas of land with fewer inputs needed, such as hill sheep farming

Countries and Organizations Involved

All countries under this Annex will be affected by the topic and countries are summoned to consider the Kyoto protocol protocol before deciding on how to prepare for changing in farming methods. It may be possible that a change in farming methods has already started in Annex I countries because of the cap on GHG's that they have because of the Kyoto protocol Protocol.

Annex I, Annex B Countries/Parties

Definition: Annex I and Annex B Countries/Parties are the signatory nations to the Kyoto protocol Protocol that are subject to caps on their emissions of GHGs and committed to reduction targets—countries with developed economies. Annex I refers to the countries identified for reduction in the United Nations Framework Convention on Climate Change (UNFCCC) while the Annex B is an adjusted list of the countries identified under the more recent Kyoto protocol Protocol.

Annex B:

Australia	Greece	Poland
Austria	Hungary	Portugal
Belarus **	Iceland	Romania
Belgium	Ireland	Russian Federation **
Bulgaria	Italy **	Slovakia **
Canada	Japan	Slovenia **
Croatia **	Latvia	Spain
Cyprus	Liechtenstein **	Sweden
Czech Republic **	Lithuania	Switzerland
Denmark	Luxembourg	Turkey **
Estonia	Malta	Ukraine **
European Union	Monaco **	United Kingdom of Great Britain and Northern
Finland	Netherlands	Ireland
France	New Zealand	United States of America
Germany	Norway	

Annex B:

Country	Target (1990** - 2008/2012)
EU-15*, Bulgaria, Czech Republic, Estonia, Latvia, Liechtenstein, Lithuania, Monaco, Romania, Slovakia, Slovenia, Switzerland	-8%
US***	-7%
Canada, **** Hungary, Japan, Poland	-6%
Croatia	-5%
New Zealand, Russian Federation, Ukraine	0

Norway	+1%
Australia	+8%
Iceland	+10%

All the countries above are involved because of the Kyoto protocol Protocol that indicates that they ought to reduce their GHG's. In addition to this, most of these countries have begun to change some of their farming methods by making it more scientifically intense.

Other countries – mainly African nations that have fertile lands immediately become involved as they play a key role in the world changing farming methods. Currently, the farming methods of most African countries are not protecting the environment.

An interaction of the Annex I and Annex B countries with African countries, could yield a fruitful resolution in the general assembly three because the Annex I countries will aide some African and Asian countries to adopt a more green approach to the land they farm on.

Organizations involved:

UNEP (United Nations Environment Program)

UNFCCC (United Nations Framework Convention for Climate Change)

FAO (Food and Agriculture Organization)

IPCC (Intergovernmental Panel on Climate Change)

UNDP (United Nations Development Program)

WFP (World Food Program)

HLTF (High level task force on global food and nutrition security)

General Overview

1. To fully comprehend the matter of preparing for the change in farming practices considering climate change. One must understand that farming is inextricably linked to food security, therefore linked to people – millions of lives. The act of changing farming methods requires careful measuring and planning – therefore “preparation” as stated in the question is imperative. In addition to the fact that farming and food security are connected, the issue of climate change is also linked to the matter. Climate change by definition is long term, therefore, the question of climate change will continue to affect mankind for infinity and will therefore affect farming methods and the amount of food available for the whole world. The UN promotes farming methods that give high yields but that are also environmentally friendly.

2. The issue of farming methods has evolved throughout the ages, it continues to be an issue.

Studies from 2015 reflect:

Mean global temperature is 14.8°C, the warmest in thousands of years. Level of CO₂ in the atmosphere reaches 400 ppm, the highest in millions of years.

It is to further increase in the years to come.

Current farming methods are emitting 13% of GHG emissions.

3. The current situation, including:

What has been done so far:

- Kyoto protocol Agreement ensures that countries are limited in their GHG emissions, therefore an alteration of some farming methods has already begun in places such as America and most of Europe.
- To address climate change, countries adopted the Paris Agreement at the COP21 in Paris on 12 December 2015. In the agreement, all countries agreed to work to limit global temperature rise to well below 2 degrees Celsius, and given the grave risks, to strive for 1.5 degrees Celsius.
- Implementation of Carbon Capture: Carbon Capture and Storage (CCS) is a technology that can capture up to 90% of the carbon dioxide (CO₂) emissions produced from the use of fossil fuels in electricity generation and industrial processes, preventing the carbon dioxide from entering the atmosphere. Furthermore, the use of CCS with renewable biomass is one of the few carbon abatement technologies that can be used in a 'carbon-negative' mode -- actually taking carbon dioxide out of the atmosphere. The CCS chain consists of three parts; capturing the carbon dioxide, transporting the carbon dioxide, and securely storing the carbon dioxide emissions, underground in depleted oil and gas fields or deep saline aquifer formations. – However, while the idea may seem effective, it is expensive and would not prove sustainable for nations that are not naturally economically privileged e.g. Third World Countries
- Countries that are the largest emitters of GHG emissions are taking responsibility and making conscious efforts to plant more and more trees to reduce climate change. Focusing on reforestation and an implementation of more technological approach has allowed China to continue farming well.
- Due to climate change, farming is proving to be difficult as the increase in temperatures has reduced the amount of rainfall. Other farmers, in different regions have changed to the dry farming method – It does not rely solely on water.
- The situation proves to be a situation that will get worse if not managed better. A solution would be to set a goal of making the agriculture sector "broadly carbon neutral" by 2030. The earth can avoid emitting 2 gigatonnes – 2 billion metric tonnes of carbon dioxide by practicing sustainable agriculture, along with reducing deforestation, which is far more effective, and billions of dollars cheaper, than investing in carbon cap and storage at the world's power plants.

- Small scale farmers require immediate help to adapt to climate change. Failure to act now will sabotage food production and 2030 development agenda. "Agriculture holds the key to solving two of the greatest problems now facing humanity: eradicating poverty and hunger, and contributing to maintaining the stable climatic conditions in which civilization can thrive," Most small scale farmers, farm for their livelihood. However, innovative approaches exist that can help them improve yields and build their resilience, he said, such as green manuring, greater use of nitrogen-fixing cover crops, improving sustainable soil management, agroforestry techniques, and integrating animal production into cropping systems.
- Farmers face major barriers, such as the lack of access to credit and markets, lack of knowledge and information, insecurity about land tenure, and high transaction costs of moving away from existing practices – As noted by the director-general of the FAO

Solutions for the **Preparation** of changing farming methods include:

1. Promote Awareness

The first step in protecting the environment – farm lands is to promote awareness. Informing the general population about the multitude of benefits of changing farming methods will encourage farmers to be more conscious of the environment.. Many farmers who destroy environments do so either unintentionally or are forced to do so. By providing education, farmers can be taught about the delicate balance of maintaining food security but also reducing climate change. Education is the first step in getting more farmers to protect the international environment. This can be done through deploying more members of the UNEP into regions where this knowledge lacks and holding free workshops which will provide farmers with more sustainable methods of farming.

- **The situation remains prominent in the regions of Africa :**
 - ✚ Lesotho
 - ✚ Kenya
 - ✚ Zimbabwe
 - ✚ Zambia
 - ✚ Libya
 - ✚ Equitorial Guinea
 - ✚ South Africa
 - ✚ Cameroon
 - ✚ Mali
 - ✚ Democratic republic of Congo
 - ✚ Ethiopia
 - ✚ Gambia



- ✚ Chad
- ✚ Nigeria
- ✚ Mozambique
- ✚ Malawi

Europe:

- ✚ Bulgaria
- ✚ Sweden
- ✚ Germany
- ✚ Estonia
- ✚ Spain
- ✚ France
- ✚ Italy
- ✚ Latvia
- ✚ Russia
- ✚ Lithuania
- ✚ Luxemburg
- ✚ Hungary
- ✚ Poland
- ✚ Portugal
- ✚ Slovenia

Asia and Islands:

- ✚ China
- ✚ Taiwan
- ✚ Indonesia
- ✚ Japan

4. Other forms of representation (so as to support the information highlighted in the report) can be used such as: <http://data.worldbank.org/topic/climate-change?end=2013&start=2003> (Follow link to view adjustable diagram).

Co2 emission per metric tonne - <http://data.worldbank.org/topic/climate-change?end=2013&start=2003>

<http://data.worldbank.org/topic/climate-change?end=2014&start=2003>

<http://data.worldbank.org/topic/climate-change?end=2015&start=2003> –

Increase in world population calls for a higher level of food security – this affects farming, however, farming is not coping with the increase in population due to climate change.

Related UN resolutions and Previous Approaches to Solving the Issue

Attached pdf – United Nations Framework Convention on Climate Change Handbook

Number 13 of the UN SDG's – "Take urgent action to combat climate change and its effects"

<https://sustainabledevelopment.un.org/?menu=1300>

<http://data.worldbank.org/topic/climate-change?end=2013&start=2003>

Works Cited

Where possible use in-text citations when listing facts or information drawn upon for this report. List your works cited in this section, preferably in MLA or APA format.

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