

Secondary Engagement Programme

Christmas Term

Grade 10

Activity Sheets

Agricultural Science



MINISTRY OF EDUCATION



**MINISTRY OF EDUCATION
SECONDARY ENGAGEMENT PROGRAMME
OCTOBER 2020
WEEK 6**

LESSON # 2

GRADE :10

Subject : Agricultural Science

Topic : Problems in the Local and Regional Agriculture

Sub Topic : Major issues that affect global agriculture

Objective

To understand the major issues that affect global agriculture.

1. Biodiversity

This is the variation of life forms (plants and animals) on earth and their different habitats.

The biodiversity found on earth is made up of million of different species.

There are three levels of biodiversity;

- genetic (diversity of genes and organisms)
- species (the populations of organisms in an ecosystem)
- ecosystem (the range of habitats on earth)

Clearing vegetation for agricultural purposes results in loss of ecosystems.

Biodiversity affects air quality, climate and erosion.

Agricultural Biodiversity

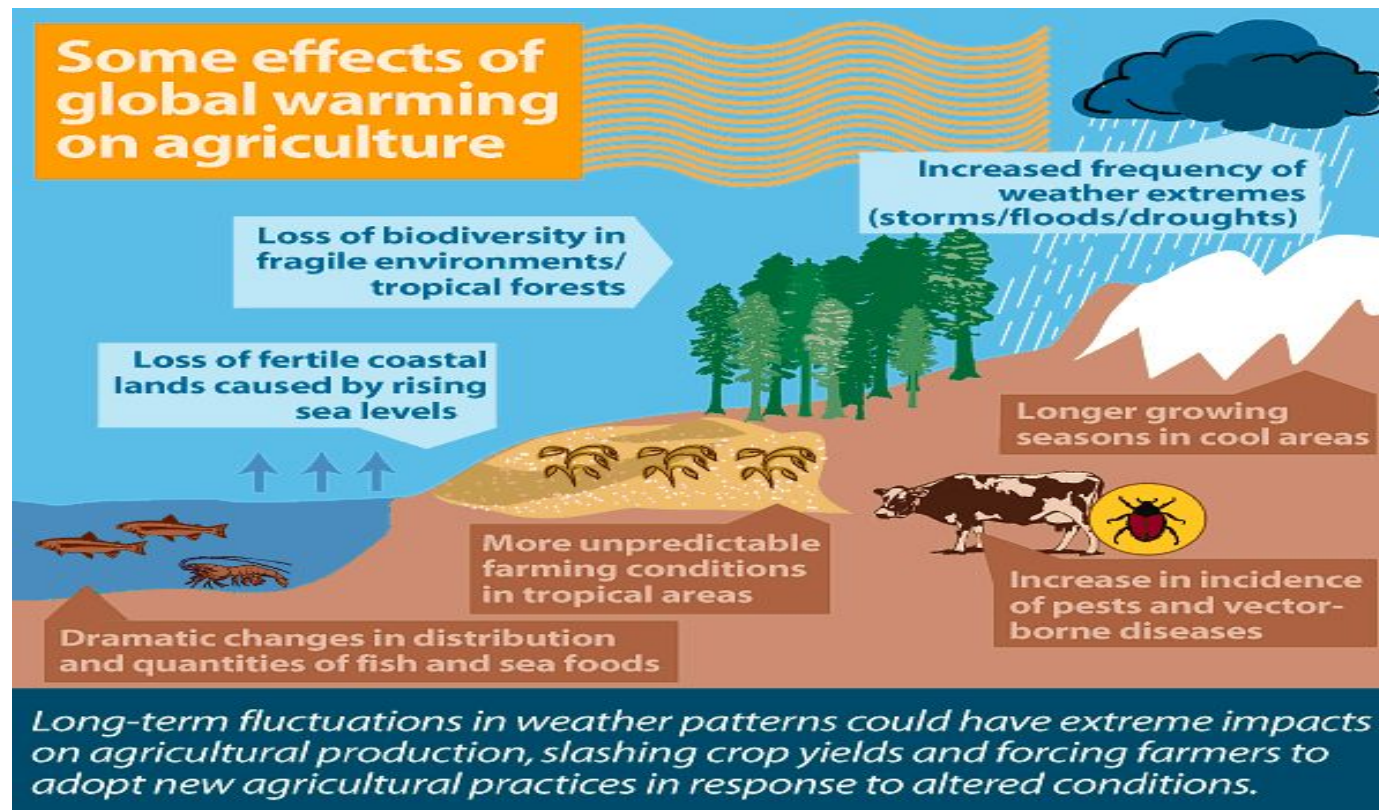
- Agricultural biodiversity includes all components of biological diversity of relevance to food and agriculture.
- It encompasses the variety and variability of species of animals, plants and micro-organisms, and the variety of ecosystems, which are necessary for food production and food security.
- Agricultural biodiversity is essential to satisfy basic human needs for food and livelihood security;
- Agricultural biodiversity is actively managed by farmers; and many components need human interference;
- Encompasses indigenous knowledge and culture.

Global Warming

The earth is surrounded by a blanket of air known as the atmosphere.

Carbon dioxide and methane are greenhouse gases.

When the sun's rays strike the earth, some is absorbed and some is radiated back into space.



Bio-terrorism

The intentional use of microorganisms to bring ill-effects or death to humans, livestock or crop.

Bio-terrorism is hard to protect against or to prevent because small quantities of the organisms are easy to hide and can be spread quickly.

Rules are designed to protect against the spread of these diseases.

Some diseases that were spread are Smallpox and Anthrax.



Food security

Food security is a measure of the availability of food and individuals' ability to access it.

The final report of the 1996 World Food Summit states that food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

Food security incorporates a measure of resilience to future disruption or unavailability of critical food supply due to various risk factors including droughts, shipping disruptions, fuel shortages, economic instability, and wars.

Household food security exists when all members, at all times, have access to enough food for an active, healthy life.

The United Nations, or FAO, identified the four pillars of food security as availability, access, utilization, and stability.

With the increasing food import bill placing significant strain on CARICOM economies, achieving food security is a regional priority.

Food security in the Caribbean requires the revitalization of sustainable local food production systems.

World wide people lack food security due to;

- poverty
- global population growth
- climate change
- increased production of biofuels on agricultural land
- loss of agricultural land to industry and residential areas.

Environmental Degradation

The environmental impact depends on the production practices of the system used by farmers.

The connection between emissions into the environment and the farming system is indirect, as it also depends on other climate variables such as rainfall and temperature.

Some other factors can include types of machinery used for agricultural purposes as well as the farmer's choice of how they handle their livestock.

Environmental degradation is brought about by:

- Natural hazards
- Atmospheric pollution
- Water pollution
- Land pollution
- Global warming
- Coral reef destruction
- Deforestation



Review questions

1. What are the benefits of globalization to farmers.
2. Distinguish between genetic, species and ecosystem diversity.
3. Explain what is meant by Global Warming.
4. What is the relationship between Global Warming and Greenhouse gases.
5. Why should deforestation be controlled.

References

- S. Ragoonanan, agriculture for C.S.E.C revision course. Caribbean educational publishers.
R. Ramharacksingh, agricultural science for C.S.E.C examinations macmillan publishers.

Internet

<https://www.Cbd.Int/agro/whatis.Shtml>
https://en.Wikipedia.Org/wiki/environmental_impact_of_agriculture

video Link

https://www.Youtube.Com/watch?V=d7ci_eoow-k
<https://www.Youtube.Com/watch?V=eratb1amisu>
<https://www.Youtube.Com/watch?V=AOALAWCJ2Y0>