



GOJ/EU/UNEP CLIMATE CHANGE ADAPTATION  
& DISASTER RISK REDUCTION PROJECT

# Hot Topic- Climate Change & Agriculture



## What is climate change?

Our climate is changing because as human beings we have increased the amount of certain gases, called greenhouse gases, in our atmosphere.

We burn oil, coal and gas to produce energy for homes, factories and businesses and for our transportation needs. Burning these fossil fuels also produces greenhouse gases like Carbon Dioxide, Methane and Nitrous Oxide.

Excess greenhouse gases in our atmosphere are trapping too much heat around the earth. This heat makes our earth warmer, like a greenhouse. This is what is known as global warming. It is this increase in temperature over time which results in climate change. Climate change has serious implications for the local agricultural sector.

## Agriculture is...

**Central to the Jamaican economy:** Agriculture is important for employment and foreign exchange earnings. Agriculture accounted for 6.8 per cent of GDP in 2012.

**Diverse:** The main traditional export crops produced in Jamaica are sugar cane, bananas, coffee, citrus, cocoa and pimento with sugar cane contributing to 45% of earnings from all export crops.

**An important employer:** Agriculture is particularly important for providing employment in rural areas. Workers in agriculture, hunting, forestry and fisheries made up approximately 33% of the total employed labour force in 2012.

**Sensitive to climate variations:** Climate change impacts have already resulted in lower yields and more diseases among local crops. The Planning Institute of Jamaica reports that between 1973-2003 Jamaica's agriculture sector suffered losses amounting to \$27.8 million USD because of severe weather events.



## Climate change will likely...

**Cause more extreme events and stronger hurricanes.** The passage of more extreme weather events such as storms and hurricanes will damage agricultural assets including livestock, crops and infrastructure. The impact of storms is especially severe for standing export crops like bananas, coffee and sugar cane.

Extreme events will also affect many livelihoods due to loss of employment in farming communities and in the agricultural and agro processing sectors.

**Increase drought conditions.**

Agriculture relies heavily on local water supply which in turn relies heavily on rainfall. Longer periods of drought will incur higher water and production costs for food production.

Drought will also affect the quantity and variety of agricultural produce available for consumption and this will increase the costs of food.

Longer periods of drought can lead to large scale losses of cattle and lower reproduction rates among livestock.

The risk of degradation and reduced productivity of the soil will increase due to droughts.

**Increase temperatures.** Warmer temperatures will result in reduced crop yield and growth of weeds, pests, bacteria and diseases.

Citrus and root crops are sensitive to changes in temperature and precipitation (moisture). With projected increases in drought conditions and up to 2.8 degree Celsius rise in temperature in the next 60 to 70 years, Jamaica's domestic crops will be under stress and food security will be threatened.

**Result in a rise in sea level.** Rising sea levels could lead to increased incidence of salt water intrusion in coastal agricultural areas and salinization of water supply.

## Jamaica could consider...

- **Cultivating various crop varieties** that are able to withstand increasing temperature, the growth of pests and drought conditions.
- **Improving agricultural infrastructure** so that it can be climate sensitive e.g. develop water saving irrigation systems; water management systems; construct on-farm water storage (ponds, tanks etc) island wide.
- **Modifying the crop calendar for short-term crops** which take a shorter time to recover from severe weather events such as storms and hurricanes.
- **Adopting improved technologies** for soil conservation.
- **Using modeling approaches and tools to assess the impacts of climate change** on domestic and export crops and meat production and inform policy.
- **Mainstreaming climate change issues** into agricultural management.
- **Establishing systems of food storage** to ensure food security in times when agricultural output is affected by extreme weather events.

### Sources:

Climate Studies Group, Mona (CSGM), 2012: **State of the Jamaican Climate 2012: Information for Resilience Building (Full Report)**. Produced for the Planning Institute of Jamaica (PIOJ), Kingston Jamaica.

**The Second National Communication of Jamaica To The United Nations Framework Convention on Climate Change 2011**  
<http://unfccc.int/resource/docs/natc/jamnc2.pdf>

PIOJ (2012) **Economic and Social Survey of Jamaica**

UNECLAC (2011) **The Economics of Climate Change in the Caribbean Summary Report**

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