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

Hot Topic- Climate Change & **The Water Sector**

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 significant implications for Jamaica's water sector.

FOUR Jamaican Water Facts

1. Jamaica's freshwater resources come from surface sources (rivers and streams), underground sources (wells and springs) and from harvesting rainwater. The groundwater supplies most (about 80 %) of Jamaica's water demands and represents 84 % of the island's exploitable water.

2. **Rainfall** is very important in Jamaica's water sector. The surface water resources have seasonal variability in flow which can in part be linked to rainfall. Groundwater is also directly recharged by rainfall and indirectly from rivers and streams.

3. Water resources are important to Jamaica's economy. Water supports Jamaica's important sectors including tourism and recreation, mining, food and beverage processing, irrigated agriculture and manufacturing.

4. The major users of water are irrigated agriculture (33%), residential water use (21%), and the environment (39%). Manufacturing, hotels and mining use less than 7% of the annual available water.

FIVE Things Climate Change will likely do

1. ***Increase the length of dry season and lead to less annual rainfall by the end of the century.*** This will mean less water for communities supplied by single spring or river sources.

2. ***Increase the frequency of very intense rains in the short to medium term.*** Very heavy rains will increase the amount of dirt and debris in the water flowing in watershed areas. Increased dirt and debris will mean additional work and costs to treat water for our daily use.
While rainfall may be more intense, it may occur less frequently. When this happens more water will simply run off the surface of the land and less will be available to replenish underground water sources/groundwater.

3. ***Decrease rainfall and increase temperatures.*** On a long term annual basis, decreased rainfall and increased temperatures will reduce potential groundwater recharge/ replenishment of underground water sources. Less water will be available for everyone.

4. ***Increase the intensity of hurricanes.*** Stronger hurricanes pose an increased threat to infrastructure within the water sector (pumps, wells etc), as well as to revenue after the event and during the recovery period.

5. ***Increase the sea levels within the Caribbean in general and around the coasts of Jamaica.*** Since many of Jamaica's wells used for agriculture, public water supply and industry are located near the country's coasts, sea level rise poses a threat to coastal aquifers. Increased sea levels pose the risk of saline intrusion (salt water intrusion) into the coastal aquifers, which means water quality will be compromised.

THREE Things we can do to support the Water Sector's Adaptation to a Changing Climate...

1. **Develop proper water management practices at individual, community and national levels.** Water must be seen as a valuable resource which should not be wasted. Improved water use efficiency and conservation will reduce demands on existing sources and infrastructure, reduce costs and reduce vulnerability to drought.

2. **Develop and implement watershed, catchment, and land management plans.** One of the benefits of improved land use management practices is protection of the quality and quantity of water resources. Poor land use and agricultural practices can increase the vulnerability of watershed slopes to soil erosion and sediment transport in heavy rains.

3. **Implement measures to harvest more rainfall.** Precious rainwater collected from roofs of buildings and through dams and channels can be captured and stored in above and below ground water tanks or in surface ponds. These measures ensure that even on the driest of days there will always be a water source, and they have great potential particularly for irrigation purposes.

Sources:

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

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