

Piame Uppala Bentarage
Assistant Director
Education, Training and Research Division

Climate Change and How it Relate to the Human

Climate Change issues have been discussed in long term in global arena since mid-1970'. Scientists have developed a model to establish the existence of greenhouse gases (GHG) that is caused by the Carbon Dioxide concentration persist in the atmosphere due to human action. This effect is a long term resulting with global warming. The prolong effect of global warming caused by greenhouse effect led to climate change, which need proactive adaptation and mitigation strategies to protect the well being of human and other eco-systems.

Climate Change is a global challenge which does not respect to any national borders. Water vapour, Carbon Dioxide, Methene, Nitrous Oxide, Ozone and Choro flouro Carbon are collectively causing to Green House effect as primary facts. Small percentage of overall atmosphere play vital rall in trapping heat which required for life on earth by absorbing and emitting radiation with the thermal infrared - rage to create a Green House effect. However, trapping extra heat by increasing GHG emission leads to global warming which refers to rise of average temperature which lead to Climate Change.

Earth been warming up gradually except there had been mini ice age between 1940 to end 1980. Acceleration of global warming have been identified as catastrophic and impacted with several natural disasters. Some of the common can be expressed as follows.

- Drought
- Extreme heat
- Extreme rain
- Hurricane
- Tornadoes
- Floods
- Wild fires

As a main factor of Green House Gas, global warming, rise of sea level can be identified by melting of glaciers in the Northern and Southern Poles. It had been claimed proponent of a climate change will led to submerge the Islands in under water and also the coastal belts of lower plains of Sri Lanka as well. This causes many problems in socio- economic conditions and for activities of the coastal ecosystems.



Ice Melting

Sea level rise will impact on Coral Reefs of Sri Lanka and damage to coral reefs due to increase of sea water temperature in the ocean as well.

One of the important factor of ocean is to absorb CO₂ in the atmosphere as Carbon sink and allow to die or break it back to atoms over a period. Also high level of unusual gases emitted into atmosphere change the acidity of the ocean. Such process is harmful to Algae in the Coral Reefs.

Some of the gradual desertification of the earth, loss of productivity of agriculture, rising sea level, salt water intrusion, submerging many sea level countries under water, unexpected and sporadic forest fires finally makes the earth an uninhabitable place for species. Natural disasters that arises a consequence of climate change make inclusively grown and development goals are untenable to achieve with the displacement of vulnerable groups in the society.

United Nations Inter Governmental Panel on Climate Change (IPCC) has provided data on Hurricane visit to USA Since 2000.

Table – events of world hurricane in past few years.

Event of Hurricane	Date
Ida	August 2021
Irma	September 2017
Harvey	August 2017
Maria	September 2017
Sandy	August 2012
Ike	September 2008
Katrina	August 2005
Wilma	October 2005
Rita	September 2005
Charley	August 2004
Ivan	September 2004
Frances	

In the context of Sri Lanka, climatic changes mostly affect the plantation and food crop industry such as coconut cultivation, tea, rubber industry, paddy farming etc. ; hence it needs to adopt special measures to solve water problems, drought and floods as rain fall pattern has serious impact of food production in the country. Decrease of rainfall might experience the shortage of water. Hence it is required to tap the rain water and storing the same in cascade of small tanks to maintain soil moisture.



And also Sri Lanka should also make a proper Assessment of Risk by undertaking 03 important risk assessments namely Hazard, Vulnerability and Capacity for Climate Change.

Climate Change such as extreme heat waves, rising sea levels, melting glaciers, salt water intrusion, changes in precipitation resulting with flooding and droughts, intense hurricanes and degraded air quality, affect directly and indirectly to the physical, social and psychological health of the humans.

Health impact of Climate Change

1. Heat related Morbidity and Mortality
2. Asthma, respiratory Allergies and Airway Diseases
3. Cancer
4. Cardiovascular disease and Stroke
5. Food bone diseases and nutrition
6. Mental disorders
7. Vector bone and zoonotic diseases
8. Water bone diseases

1. Heat Related Morbidity and Mortality

Prolong exposure to extreme heat can cause heat exhaustion, heat cramps, heat stroke and death as well as exacerbate pre-existing chronic conditions such as various respiratory, cerebral and cardiovascular diseases.

2. Asthma, Respiratory Allergies and Airway Diseases

Some of the pollutants can directly cause respiratory disease or exacerbate existing conditions in susceptible populations for children or the elderly and impact on respiratory system include the Chest Pain, Coughing, Throat irritation and Lung Inflammation due to increased of ground level Ozone, CO₂ consecration and fine particles.

3. Cancer

Increase of Cancer by exposure to toxic chemicals susceptible to Cancer by heavy inflow of rainfall or flooding. Also depletion of Ozone layer leads to increase of Ultra Violet (UV) exposure and temperature leading to increase the risk of skin Cancer and Cataracts. Decline of air quality and rise in concentration of air pollutants increases the risk of Lung Cancer.

4. Cardiovascular Disease and Stroke

Extreme cold and extreme heat directly affect the increase of Cardiovascular diseases such as Chest pain, Strokes and Cardiac dysrhythmical (irregular heart beat). The elderly and isolated individuals are at a great risk of Cardiovascular disease and stroke when triggered by temperature extremes.

5. Food bone diseases and Nutrition

Extreme weather event and changes in temperature and precipitation can damage or destroy produces and interrupt the transportation and delivery of food. Recent heavy flood in Sri Lanka 2017 affected to the most of the parts of Sri Lanka and destroy the yield heavily.

6. Mental Disorders

Extreme weather such as floods, Cyclones, and other climatic related events rangers from acute Traumatic stress to Chronic mental disorders such as depression, Post Traumatic stress disorder, sleep difficulties, social avoidance, irritability and drug or alcohol abuse.

7. Vector bone and Zoonotic diseases

Changes in temperature and precipitation directly affect the vector bone and zoonotic diseases pathogen host interaction. The rapid spread of vector bone diseases such as Dengue and Malaria, has been attributed to a warmer climate favoring to build-up of harmful vectors.

8. Water bone Diseases

High temperature of water, scarcity of water and water abundance due to flood may linked to increase Diarrheal diseases.

In final, proactive adaptation and mitigation strategies are needed to be taken to protect the human and other eco-systems on climate change issues to ensure the existence of the man kind and the plant earth.

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