

Course Code: CE 447

Course Title: Climate change and sustainable development

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LECTURE: 04

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Lecture plan

- Environmental issues and priorities
- Control global warming
- Biodiversity
- Loss of habitat

Environmental Issues & Priorities

1. Global
 2. Regional
 3. Local
- **Global warming** is the increase in the average temperature of Earth's near-surface air and oceans since the mid-20th century and its projected continuation. According to a report by the Intergovernmental Panel on Climate Change (IPCC) global surface temperature increased 0.74 ± 0.18 °C (1.33 ± 0.32 °F) between the start and the end of the 20th century.

Global warming

What are the Effects of Global Warming?

- Earth's average temperature will increase by 1.4 – 5.8 C by the year 2100 (IPCC)
- Sea level will rise, caused by the melting of glaciers and polar ice , with increased temperature
- Increased flooding in coastal wetlands
- Worst impact on agriculture, ecosystem
- Worldwide average rainfall will increase, but the rainfall pattern will be disrupted
- Impact on bio-diversity
- Threats to human health
- 15-17% of Bangladesh could be under water for a one metre sea level rise

What responses are taken to control global warming?

- Response:
 - Kyoto protocol, 1997 shows an agreement is necessary between nations to cut greenhouse gas emission
 - Switch over to non fossil fuel energy sources such as solar, nuclear, wind, hydro etc. from fossil fuel energy source
 - Increase afforestation and decrease deforestation
 - Carbon tax
 - Carbon Trading
 - Copenhagen summit, 2009 attempted to make legally binding to the developed nations to reduce greenhouse gas emission without any legal accord

What responses are taken in Bangladesh to control global warming?

- Responses: Adaptation and Mitigation measures for Bangladesh
 - BD Govt. has formulated the National Adaptation Programme of Action (NAPA) in 2005 and Bangladesh Climate Change Strategy and Action Plan (BCCSAP) in 2008
 - BCCSAP, 2009 has identified six priority areas: food security, social protection and health; disaster management; infrastructure; research and knowledge management; mitigation and low carbon development; capacity building and institutional strengthening

❑ Write the name of areas where Adaptation policies and measures are required?

- Adaptation policies and measures are required in the following areas:
 - Agriculture, forestry and fisheries
 - Water supplies
 - Extreme events
 - Capacity building including research
 - Coastal zones
 - Infrastructure
 - Human health
 - National policies

BIODIVERSITY

- Biodiversity provides resources for food, construction and raw materials for industry. It provides the basis for improvement for domesticated species, maintains functions of ecosystem, stores and cycles nutrients essential for life, absorbs and breakdowns pollutants, recharge groundwater, protects catchment basins, protect soil from excessive erosion etc.
- Natural and Anthropogenic activities are responsible for the loss of Biodiversity

How loss of habitat occurs for biodiversity?

- Habitat degradation/loss is one of the major causes of biodiversity loss. Habitat loss occurs in three ways:
 - i) whole ecosystem is destroyed or converted into farmlands, exotic forests and settlements
 - ii) ecosystem is partially removed, creating islands surrounded by farmlands,
 - iii) ecosystems are degraded by the loss of species and disruption of their ecological processes. The habitat degradation can occur in many ways, like in patches, in waves or as linear.