Environment & Climate Change

Fundamentals of Sociology

Tashlima
Lecturer, Department of Science and Humanities
Military Institute of Science and Technology

What is Climate Change?

- “Climate change is no longer some far-off problem; it is happening here, it is happening now”- Barac Obama, Ex President of USA.
- Bangladesh is one of the world’s most populated countries, being home to over 160 million. It has been placed at the 7th position among the countries vulnerable to natural disasters due to climate change
- Climate change, the effects of greenhouse effect and global warming, is out to alter the global map with its developing prospects of sending a number of countries under the waves.
- Climate change may refer to a change in average weather conditions, or in the variation of weather around longer term average conditions.

What is global warming?

Global warming is the term used to describe a gradual increase in the average temperatures of the earth's atmosphere and its oceans, a change is believed to be permanently changing the Earth climate. It refers to the gradual rise in the earth's average temperature due to changes in the chemical composition of the atmosphere.

What is Greenhouse Effect?

The greenhouse effect is the process by which radiation from planet's atmosphere warms the planet's surface to a temperatures above what it would be without its atmosphere.

What is Environmental Pollution?

The environment refers to all the things surrounding us. Any sort of natural disorder which affects our social, economic and political life negatively is regarded as environmental pollution.

CO2 emission of various countries

Before industrial revolution, levels of atmospheric CO2 were around 280 parts per million. By 2013, that level had breached the 400 PPM mark for the first time. On 3rd June 2019 it stood at 414.40 PMP.

Rank	Countries	Percentage of Global Emissions
1	China	25%
2	United States	16%
3	European Union	10%
4	India	6%
5	Russia	5%

Causes of Climate Change

Anthropogenic Causes

1. Chemical fertilizers
2. Deforestation
3. Increase vehicles
4. Emission of GHG
5. Industries
6. Emission of CO2
7. Modern Technology
8. The impact of globalization

Natural Causes

1. Forest fire
2. Volcanic Eruptions
3. Meteorites
4. Methane emissions from animals

Pollution and waste

1. Air pollution
2. Sound Pollution
3. Water pollution
4. Soil waste
5. Odour Pollution
6. Depletion of resources
7. Soil degradation and desertification

Bangladesh's Greenhouse Gas emission Profile

Bangladesh accounts for just 0.35% of global emissions 7th most vulnerable to natural disasters due to climate change Bangladesh has pledged an unconditional 5% greenhouse gas emission by 2050.

Natural Impact of climate change

1. **Global warming & sea level rise:**

The risk sea level rise is predicted to grow to 27 million by 2050, Bangladesh lost an estimated 5.9% of GDP to storms from 1998-2009

2. Flood: International Panel on Climate Change (IPCC) states that a 45 cm sea-level rise will inundate almost 17% of the territory of Bangladesh and will displace 3.5 million population of costal regions.

3. Cyclones: Between 1877 to 1995, Bangladesh was hit by 154 cyclones.

4. Draught: Monsoon failure often brings famine to the affected regions and as a result crop production reduce drastically.

Impact of climate change

1. **Agricultural production and Food Security**: The International Panel for Climate Change(IPCC) estimates that by 2050 rice production in Bangladesh could decline by 8% and wheat by 32% against a base year of 1990. The food production will adversely affect food security and human well being.
2. **Water security:** Higher atmospheric water vapor, rising evaporation, and changes in soil moisture and runoff will ultimately reduced fresh water availability.
3. **Ecosystem and Biodiversity:** Higher salinity in the coastal belts could change the entire ecosystem.
4. **Human Health:** Climate change will increase the burden of various water-related infectious diseases.
5. **Fisheries and Livestock:** Human beings, livestock and poultry may suffer due to natural disasters, higher temperatures, and floods.

5. Migration: Climate change will have a bad impact on people livelihood, professions and sources of income so the effected people have to migrate to another country. Climate refugees will be a major problem.

6. Livelihoods of the poor: Poor people often live in places that are vulnerable to natural calamities.

7. Geopolitical instability

8. Desertification

9. The spread of disease

Step to minimize climate change

1. Adaptation and mitigation

a) Adaptation in agriculture

b) adaptation for water security

c) adaptation for ecosystem and biodiversity

d) Adaptation in health

e) Mitigations measures

2. Governments efforts in conservation and environmental protection

3. Efforts from Non-Govenrmental sectors

International initiatives on protection of climate change

Stockholm Summit: United Nations Conference on the Human Environment

Basel Convention

The Basel Convention regulates the transboundary movements of hazardous wastes and other wastes and obliges its Parties to ensure that such wastes are managed and disposed of in an environmentally sound manner. The Convention covers toxic, poisonous, explosive, corrosive, flammable, ecotoxic and infectious wastes. The overall goal of the Basel Convention is to protect human health and the environment against the adverse effects that may result from the generation, transboundary movements and management of hazardous and other wastes.

Electrical and electronic wastes (e-waste) are categorized as hazardous waste under the Basel Convention due to the presence of toxic materials such as mercury, lead and brominated flame retardants.

International initiatives on protection of climate change

Montreal Protocol

The Montreal Protocol, finalized in 1987, is a global agreement to protect the stratospheric ozone layer by phasing out the production and consumption of ozone-depleting substances (ODS). The Montreal Protocol is an international treaty designed to protect the ozone layer by phasing out the production of numerous substances that are responsible for ozone depletion. It was agreed on 16 September 1987, and entered into force on January 1989. The Montreal Protocol has been successful in reducing ozone-depleting substances and reactive chlorine and bromine in the stratosphere.

United Nations Environmental Program

UNEP (UN Environment) is a global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system. It was founded by UN General Assembly (UNGA) as a result of the United Nations Conference on the Human Environment (Stockholm Conference) in June 1972. UNEP and World Meteorological Organization (WMO) established Intergovernmental Panel on Climate Change (IPCC) in 1988 to assess climate change based on the latest science. Since its founding, the UNEP has played a key role for the development of multilateral environmental agreements (MEAs). The secretariats for the following nine MEAs are currently hosted by UNEP:

International initiatives on protection of climate change

Green Bangking: Green Banking means promoting environmental – friendly practices and reducing carbon footprint from banking activities. It is also called as ethical banking or a sustainable banking.

Green banking activities include financing green projects, using climate fund, turning bank branches online, enhancing CSR activities, promoting mobile banking etc. Provision of loans with financial concession for environment friendly products and projects has been adopted to promote green banking in Bangladesh.

Carbon Tax: A carbon tax is a fee imposed on businesses and individuals that works as a sort of "pollution tax." The tax is a fee imposed on companies that burn carbon-based fuels, including coal, oil, gasoline, and natural gas. Carbon taxes are intended to make visible the "hidden" social costs of carbon emissions, which are otherwise felt only in indirect ways like more severe weather events.

market-based solution to climate change, providing a financial incentive to reduce emissions

❑ International initiatives on protection of climate change

Green Deal: Green New Deal (GND) proposals call for public policy to address climate change along with achieving other social aims like job creation and reducing economic inequality. Climate change and environmental degradation are an existential threat to Europe and the world. To overcome these challenges, the European Green Deal will transform the EU into a modern, resource-efficient and competitive economy, ensuring:

a) no net emissions of greenhouse gases by 2050

b) economic growth decoupled from resource use

c) no person and no place left behind

IPCC

The Intergovernmental Panel on Climate Change is an intergovernmental body of the United Nations charged with advancing scientific knowledge about anthropogenic climate change. The Intergovernmental Panel on Climate Change (IPCC) is an intergovernmental body of the United Nations charged with advancing scientific knowledge about anthropogenic climate change.[1] It was established in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) and endorsed by the UN later that year.[2] It has a secretariat in Geneva, Switzerland, hosted by the WMO, and is governed by 195 member states.[3

UNFCC

The United Nations Framework Convention on Climate Change (UNFCCC) established an international environmental treaty to combat "dangerous human interference with the climate system", in part by stabilizing greenhouse gas concentrations in the atmosphere.[1] It was signed by 154 states at the United Nations Conference on Environment and Development (UNCED), informally known as the Earth Summit, held in Rio de Janeiro from 3 to 14 June 1992. Its original secretariat was in Geneva but relocated to Bonn in 1996.[2] It entered into force on 21 March 1994. The ultimate objective of all three agreements under the UNFCCC is to stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system, in a time frame which allows ecosystems to adapt naturally and enables sustainable development.

a) **Earth summit 1992:** The 'Earth Summit', was held in Rio de Janeiro, Brazil, from 3-14 June 1992. It concluded that the concept of sustainable development was an attainable goal for all the people of the world. The conference also recognized that integrating and balancing economic, social and environmental dimensions required new perceptions of the way we produce and consume, the way we live and work, and the way we make decisions.

b) **Kyoto Protocol:** The Kyoto Protocol was adopted on 11 December 1997. Currently, there are 192 Parties to the Kyoto Protocol. It monitors industrialized countries and economies in transition to limit and reduce greenhouse gases (GHG) emissions. The Convention itself only asks those countries to adopt policies and measures on mitigation and to report periodically.

c) Conference of parties (COP)

For nearly three decades the UN has been bringing together almost every country on earth for global climate summits called COPs which stands for 'Conference of the Parties'.

d) Paris Agreement

It was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015. Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.

e) Carbon trade

Govt. set cap on total allowable carbon release for a certain sector, companies are given the allowance to emit specific amount of carbon within that cap, companies that reduce their emission below their allowance can sell excess permits to companies that are struggling to stay within their limit; creates a carbon market

Carbon trade is the buying and selling of credits that permit a company or other entity to emit a certain amount of carbon dioxide. It is originated with the Kyoto Protocol, a United Nations treaty that set the goal of reducing global carbon emissions and mitigating climate change starting in 2005.

f) Climate Diplomacy: Climate diplomacy also means prioritising climate action with partners worldwide – in diplomatic dialogues, public diplomacy and external policy instruments. This includes reaching out to partner countries bilaterally and making the case for more ambitious climate action.

❑ Bangladesh's role in International climate change negotiations

- In 2015, Prime Minister Sheikh Hasina received UN's highest environmental accolade 'Champion of the Earth' – in recognition of Bangladesh's far reaching initiatives to address climate change and for her outstanding policy leadership role.
- Government of Bangladesh has approved the Delta Plan 2100 on September 4, 2018 to secure the future of water resources and mitigate the likely effects of climate change and natural disasters. It is a broad-based long-term vision about the likely changes and necessary intervention to make the Bangladesh Delta a safe by the end of the 21st Century.

- Bangladesh government is taking measures for the rehabilitation of landless and homeless people throughout the country. In 23 July, 2020 our honorable prime minister Sheikh Hasina has inaugurated world's largest rehabilitation center for climate refugees in Cox's Bazar. Total 4,400 families of climate refugees will be rehabilitated at the site as 139 five story building under the Khurushkul Ashrayan Scheme being implemented by Bangladesh Army.
- The 2021 Leaders' Climate Summit was a virtual climate summit on 22-23 of April 2021, organized by the Joe Biden administration, with leaders from various countries. In this summit, our honorable Prime Minister Sheikh Hasina put forward four suggestions to global leaders to fight against climate change challenges a strong collective response.

Environmental Pollution Management in Bangladesh

Ministry of Environment and Forestry and its organizations already implementing different activities. These are-

1. **Control air Pollution**

Government has established 11 continuous Air Monitoring Stations at various places of important cities. Brick production and Kiln establishment (regulation) Act-2013 have been passed to established modernized and fuel saving brick kiln to reduce air pollution.

2. **Industrial Pollution Control**

The Environment Conservation Act, 1995 and Environment Conversion Rule-19997 are being followed for the approval of site clearance in case of new industry as well as for issuance of Environment Clearance for the control of pollution from existing industries.

3. Bio-diversity Conservation

Bangladesh Diversity Act-2014 has been approved by the cabinet in principle, is under the process of vetting in the legislative wing. Various program are being implemented at Cox's Bazar, St. Martin's island and Hakaluki haor to ensure conservation, management and sustainable use of bio-diversity in coastal and wetland areas.

4. Ozone Layer Protection

Bangladesh has signed the Montril Protocol on 2nd August, 1990.

Sociological view about climate change

Conflict view

- Conflict theorists charge, the most serious threat to the environment comes from the global consumer class.

- A capitalist system creates a 'treadmill of production' because of its inherent need to build ever-expanding profits. This treadmill necessities creating an increasing demand for products, obtaining natural resources at minimal cost, and manufacturing products as quickly and cheaply as possible-no matter what the long-term environmental consequences.

Measures to prevent pollution

- Unplanned industrialization and Urbanization should be stopped.
- Recycling, reuse and reconstruct
- Public awareness and motivation raising program
- Attractive environmental program in electronic media
- Environment education in formal education
- Civil society
- Waste management
- Avoided using polythene
- Using CNG and renewable energy
- Fine for violation of motor vehicles law

Sustainable Development

- Sustainable development was defined as the use of renewable resources to promote economic growth, the protection of animal species and biodiversity, and the commitment to maintaining clean air, water and land.
- The Brundtland Commision regarded sustainable development as "meeting the needs of the present, without compromising the ability of future generation to meet their own needs.
- Sustainable development is also one of the Millennium Development Goals which have been agreed by 1991 states around the world as they aim to reduce many forms of poverty in the coming decades.
- It was employed at the UN Earth Summit in Rio de Janerio in 1992 and has subsequently appeared in other ecological summit meetings organized by the UN, such as the world summit on Sustainable Development in Johannesburg in 2002

Sustainable Development Criticism:

- Critics see the notion of sustainable development as too vague and as neglecting the specific needs of poorer countries.
- According to critics, the idea of sustainable development trends to focus attention only on the needs of richer countries; it does not consider the ways in which the high levels of consumption in the more affluent countries are satisfied at the expense of other people. For instance, demand of on Indonesia to conserve its rainforests could be seen as unfair because Indonesia has a greater needs than the industrializes countries for the revenue it must forgo by accepting conservation.

Green Economy:

Green economy is one whose growth in income and employment is driven by public and private investments that reduces carbon emissions and pollutions, enhance energy and resources efficiency, and prevent the loss of bio-diversity and ecosystem services. Green economy based on six main sectors-

1. Renewable Energy (solar, wind, bio-gas, water etc)
2. Green Building
3. Clean Transportation (alternative fuels, public transit, hybrid and electronic vehicles)
4. Water management (rain water, purification, no wastage)
5. Waste management (recycling, reuse, reconstruction)
6. Land Management (organic agriculture, urban forestry and park, reforestration and afforestation)

Thank You