Module X

Biodiversity-Peace-Conflict
Environmental Issues of Bangladesh

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Understanding the connections among biodiversity, peace and conflict

Trajectories of human conflict have direct and indirect impacts on biodiversity and ecosystem function.

These occur across terrestrial, marine and freshwater systems via the well-established drivers of biodiversity loss; land and sea-use change, climate change, overexploitation, pollution and invasive species.

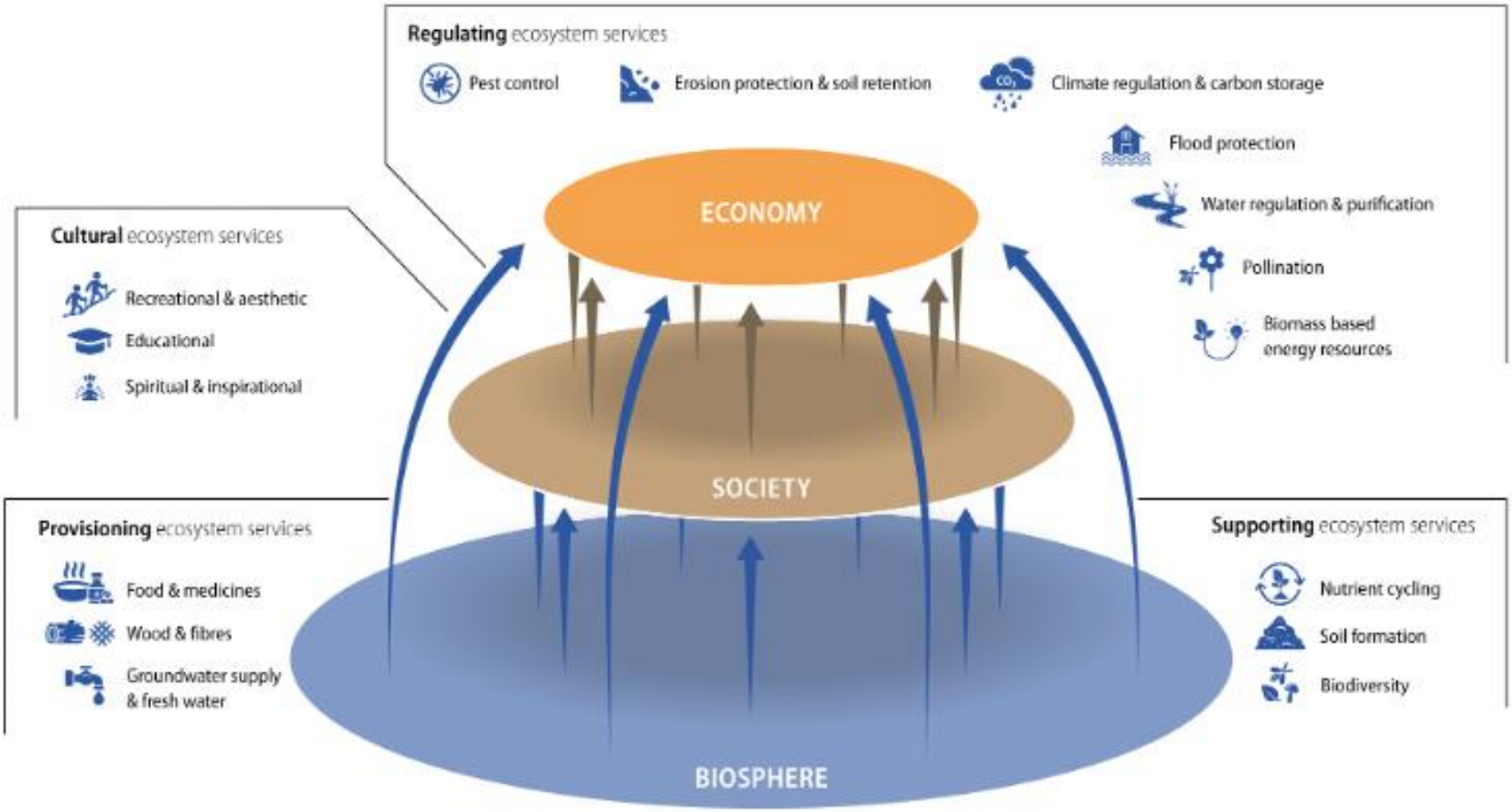


Figure. The biosphere as the foundation of all needs and activities in modern society and economy

A. The influence of conflict on biodiversity

1. A full spectrum of impacts

Severe biodiversity loss is a known consequence of war and related military activities. Ecological impacts from the first and second world wars continue to be understood.

For example, World War II was responsible for an acceleration in the North Atlantic Fisheries and subsequent collapse of herring stocks, as well as the unsustainable exploitation and opening up of forest areas in Malaysia.

In more recent history the Gulf War demonstrated both the sheer spatial scale and temporal extent of environmental devastation resulting from war.

This story is now repeating for military actions in both Afghanistan and Iraq [24, 25]. Civil conflicts, as well as rebel or militia activities in biodiverse regions are also known to have serious ecological impacts.

2. Impacts of uncertain magnitude

It is not only active conflict which has serious negative consequences. Military training and the maintenance of military institutions have considerable and largely overlooked impacts.

These include carbon emissions which dwarf many national domestic carbon budgets, climate change being expected to become a serious driver of biodiversity loss.

The connection between militarisation and carbon emissions has also been identified by economists, and a recent report has estimated the total military carbon footprint to be approximately 5.5% of global emissions.

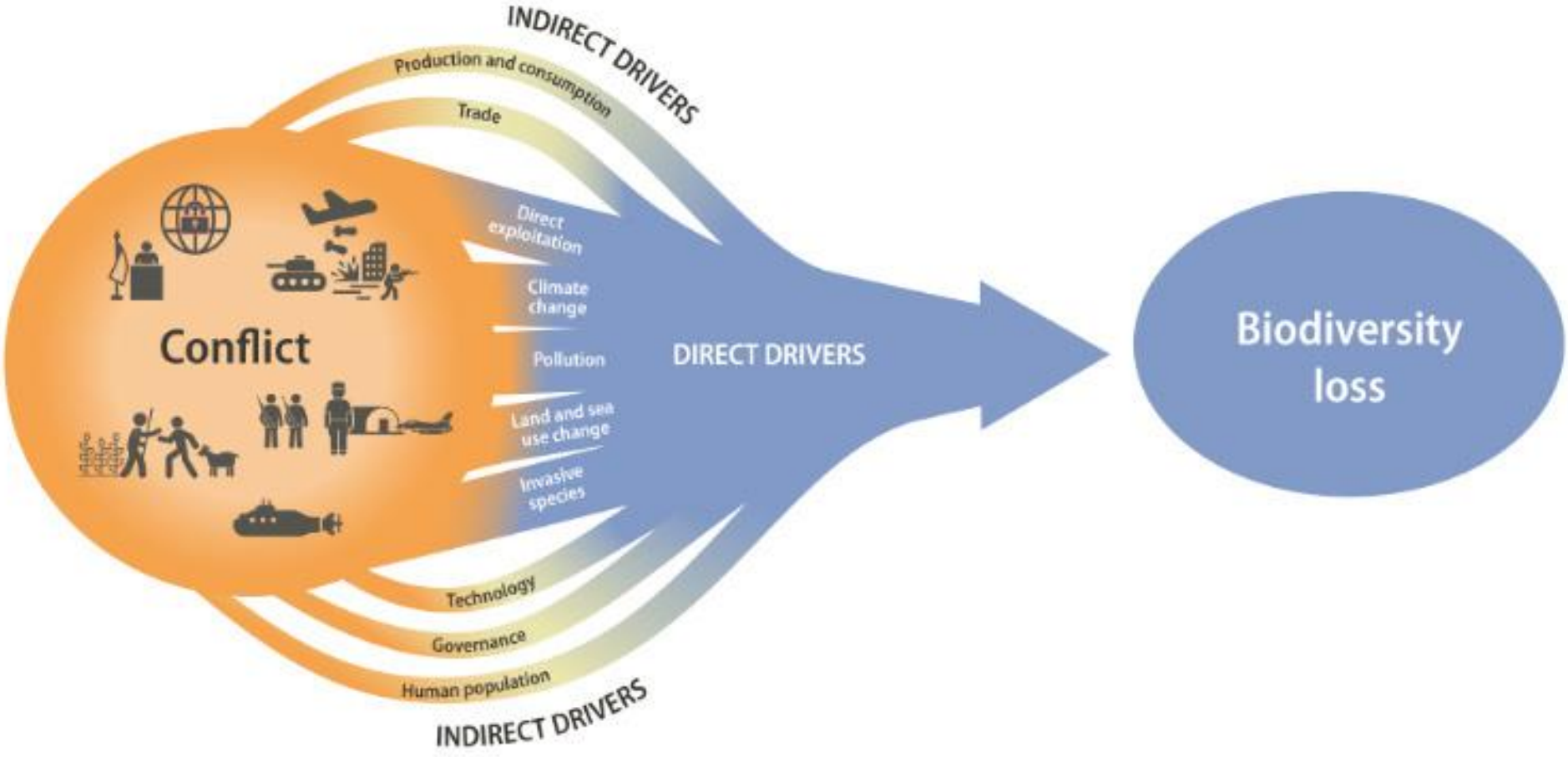
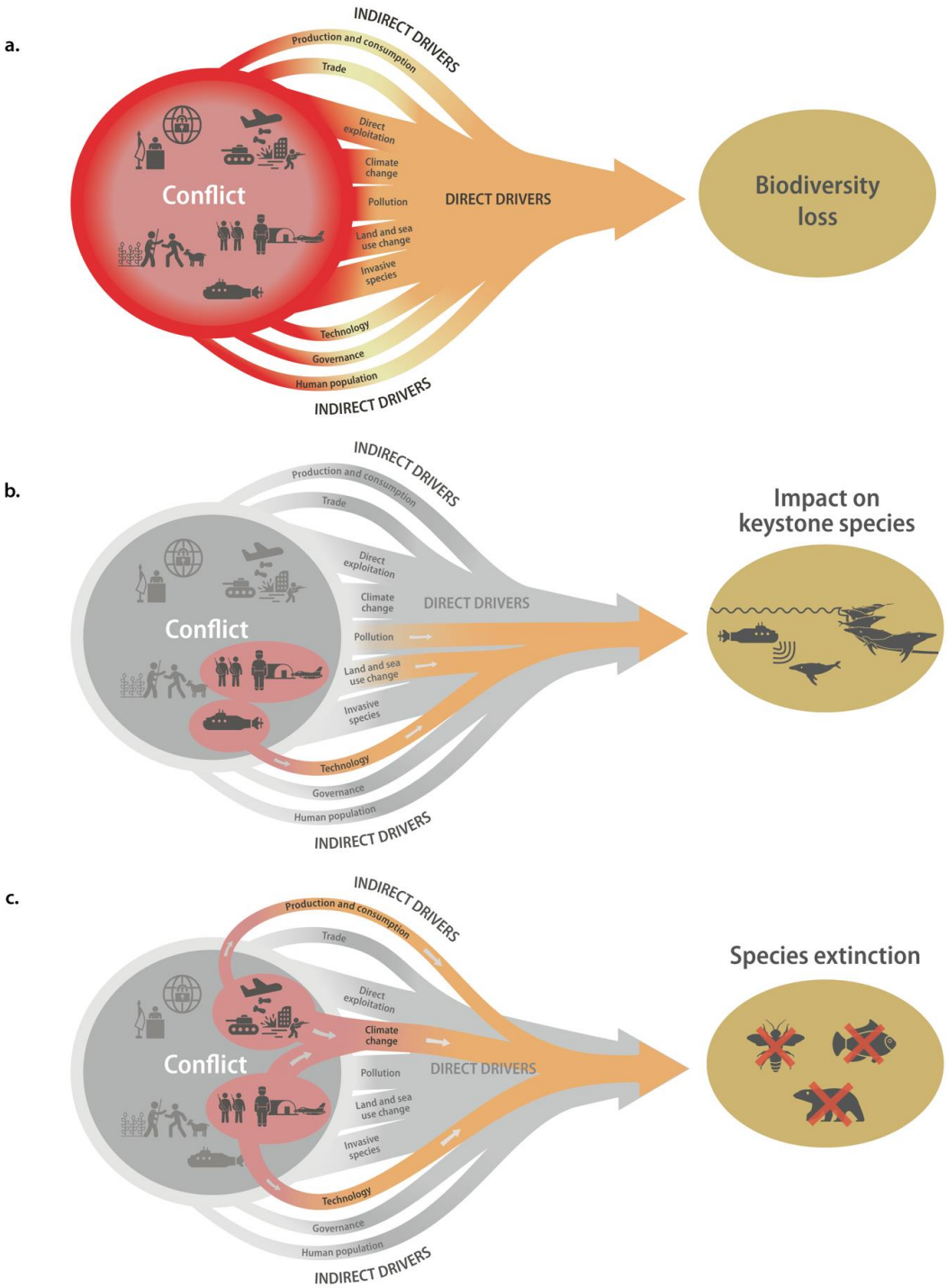


Figure. How conflict can lead to biodiversity loss


a.
INDIRECT DRIVERS
Production and consumption
Trade
Direct exploitation
Climate change
Pollution
Land and sea use change
Invasive species
Technology
Governance
Human population
INDIRECT DRIVERS
Conflict
DIRECT DRIVERS
Biodiversity loss
b.
INDIRECT DRIVERS
Production and consumption
Trade
Direct exploitation
Climate change
Pollution
Land and sea use change
Invasive species
Technology
Governance
Human population
INDIRECT DRIVERS
Conflict
DIRECT DRIVERS
Impact on keystone species
c.
INDIRECT DRIVERS
Production and consumption
Trade
Direct exploitation
Climate change
Pollution
Land and sea use change
Invasive species
Technology
Governance
Human population
INDIRECT DRIVERS
Conflict
DIRECT DRIVERS
Species extinction

B. The influence of biodiversity on conflict

While the negative impact of war and conflict on biodiversity has been a consistent focus in the literature, interest has also developed in the other direction. This has included understanding how biodiversity itself may be a source of conflict, and conversely, how its protection may contribute to peacebuilding and conflict reduction.

1. Conflicting values and uses

One long standing interest has been how the protection of biodiversity can lead to conflict, for example via the exclusion of livelihood uses or forced relocation of communities in biodiverse regions.

Conflicts around protected areas (e.g., national parks, tiger reserves and wildlife sanctuaries) in India is one well-studied example.

2. Biodiversity protection supporting peacebuilding

Biodiversity conservation efforts might support peacebuilding processes.

Doing so by serving as entry points for cooperation and as the foundation for greater relational stability and trust building between states or groups, or within communities themselves.

Perhaps the most common example being transboundary protected areas or so called “peace parks”.

3. Biodiversity loss exacerbating conflict

There has been significant speculation about the potential for environmental degradation to create or exacerbate conflict.

An orientation that has become mainstream in recent years via a strong focus on climate change. Most commonly articulated as the “security implications of climate change” or the “environment-security nexus”.

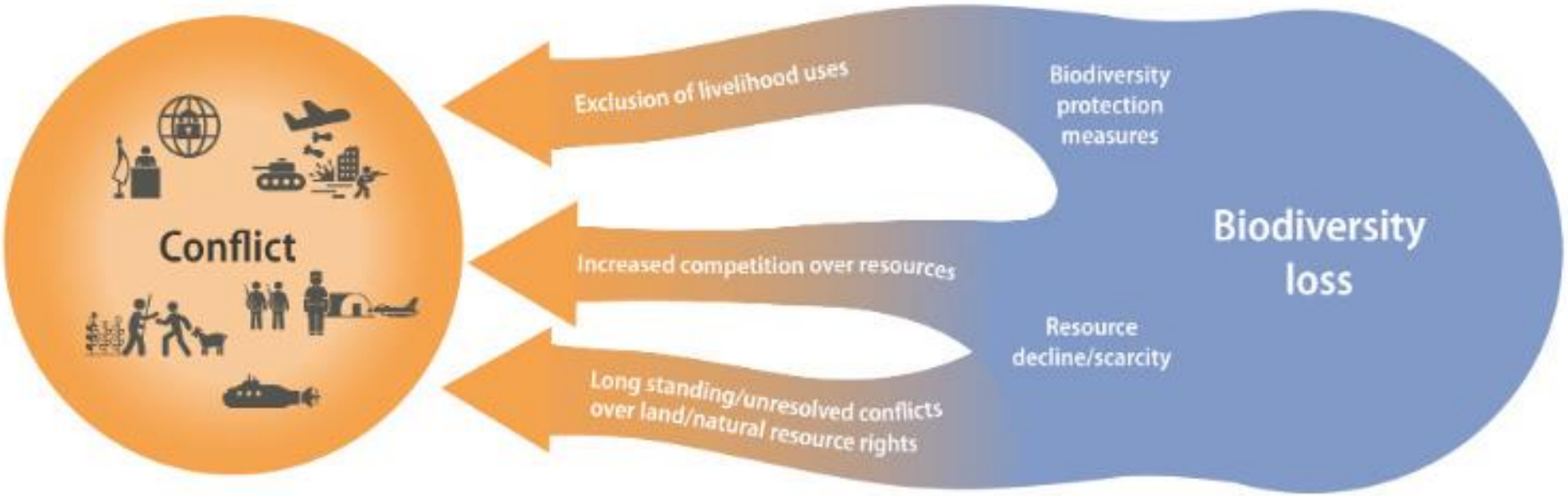


Figure. How biodiversity loss can lead to conflict

Environmental Issues of Bangladesh

Bangladesh is one of the developing countries of Asia which has been facing serious environmental deterioration due to disposal of solid and liquid wastes here and there in the nature without any treatment, gaseous emissions to the atmosphere and exposure to noise.

Air, water and noise pollution and disposal of solid wastes are the major environmental problems of Bangladesh.

Environment of Bangladesh is mainly polluted due to deficiency of standard waste management system and land use, rapid urbanization, over population, exploitation of natural resources, industrialization and capitalization.

It is needed to take necessary preventive measures and actions to polluters to improve the environmental quality for ensuring healthy living of citizens of the country.

1. Air pollution

Air pollution is a great environmental concern for Bangladesh particularly in big metropolitan cities like Dhaka and Chittagong.

Ambient levels of Particulate Matter, SO2and Pb far exceed the levels of Bangladesh air quality standards and WHO guidelines. Recorded data on air pollution in Dhaka city confirms that the annual mean of PM10 and PM2.5 is highly significant.

According to Mahmood, the volume of lead concentration in atmosphere of Dhaka city is 463 nanograms per cubic meter which is ten times higher than the permissible limit. Burning of fossil fuels, emissions from brick kiln, industrial emissions and emissions from vehicles are the main causes of atmospheric pollution in Bangladesh.

According to Dewan *et al.*, "Leather, food, pulp and paper, textile industries around the Dhaka city largely contribute to SO2, NO2, CO, PM and Volatile Organic Chemicals (VOC) to the air, for example, the estimated emission of SO2bythe brick kilns and manufacturing industries is 28.8% and 10%, respectively."

2. Water pollution

In Bangladesh, most of the industries release hazardous wastewater to the surrounding water courses apart from sense of environment. In most of the cases, wastewater are discharged from point sources without any treatment. Moreover, the residential and commercial establishments near the river banks directly discharge wastewater into the rivers or their discharges subsequently find way into the rivers.

The main water pollutants in Bangladesh are a) liquid organic and inorganic wastes, b) nutrient substances, c) synthetic compounds, d) inorganic chemicals, e) silt and sediment, f) hot water and i) industrial, municipal and urban wastes.

According to the Institute of Environment and Development Studies, “about 900 polluting industries in Bangladesh dis-pose their untreated industrial wastes directly into the rivers, although the effluent contain 10 to 100 times higher than the allow-able permissible limits.”

It was found that the rivers around the Dhaka Metropolitan City were highly polluted in the months from January to May.

Seven thousands industries situated near the rivers discharge daily 15,00,000 m3of wastewater into the Buriganga, the Shitalakhya, the Balu and the Turag rivers of Dhaka city and other 5,00,000 m3 of wastewater come into these rivers from different non-industrial origins.

Halder and Islam found, “the maximum concentration of turbidity, BOD, hardness, TDS and COD of Turag river of Dhaka is much higher than the acceptable limits.”

Study revealed that the concentration of DO and BOD has exceeded beyond the standard limits in cases of the Buriganga and the Shitalakhya rivers during 2000 to 2010.

The Karnaphuli is the main river of commercial capital Chittagong district of Bangladesh where the river is polluted in several ways particularly through industrial and sewerage disposals and municipal wastes from different drainage systems without any treatment. Quality of riverine water is polluting day by day.

3. Solid Waste Disposal

Per capitia waste generation rate is 0.41 kg/day in the municipal area of Bangladesh although in total waste collection situation is not very satisfactory.

In Dhaka city, each day over 3000 tons of household waste is being produced, but Dhaka City Corporation collects less than half of it [28]. Enayetullah *et al.* mentioned, “existing infrastructure for waste management shows that waste collection efficiency in different urban areas varies from 37% to 77% with an average of 55%.”

3. Noise Pollution

As mentioned by Ahmed and Rahman [30], “noise level of busy streets in Dhaka city has been estimated 60 to 80 dB, with the sound of vehicles being 95 dB, loud speakers 90 to 100 dB, mills and factories 80 to 90 dB , restaurants and cinema halls 75 to 90 dB, scooter or motorbike 87 to 92 dB, trucks and buses 92 to 94 dB.

However, the desired sound level is 25 dB in the bedroom, 40 dB in the dining or drawing room, 35-40 dB in the office, 30-40 dB in the classroom, 35-40 dB in the library, 20-35 dB in hospital, 40-60 dB in a restaurant and 45 dB in the city at night.”

Efforts to combat environmental pollution in Bangladesh

In Bangladesh, policies, rules and laws concerning environmental problems have been formulated. Some important steps were taken to protect environment like- adoption of National Environment Policy in 1992, initiation of National Environment Management Action Plan (NEMAP), enactment of the Environmental Conservation Act 1995 and obtaining environmental clearance for operation of each and every industrial units and projects.

Major environmental policies, rules and laws of Bangladesh are given below:

a. The Motor Vehicles Rules, 1940 (Extracts)
b. The Building Construction Act, 1952
c. Water Pollution Control Ordinance, 1970 [Repealed by Ord. XIII of 1977]
d. Environmental Pollution Control Ordinance, 1977 [Repealed by Act I of 1995]
e. Motor Vehicles Ordinance, 1983 (Extracts)
f. Industrial Policy, 1991
g. Bangladesh National Environmental Policy, 1992
h. National Conservation Strategy, 1992
i. National Environmental Management Action Plan (NEMAP), 1995
j. Bangladesh Environmental Conservation Act, 1995 [Act I of 1995]

k. Bangladesh Environmental Conservation Rules, 1997
l. National Policy for Safe Water Supply and Sanitation, 1998
m. The National WaterPolicy, 1999
n. Bangladesh Environmental Court Act, 2000
o. Bangladesh Environmental Conservation (Amendment) Act, 2000
p. Bangladesh Environmental Conservation (Amendment) Act, 2002
q. Bangladesh Environmental Court (Amendment) Act, 2002
r. Ozone Depleting Substance (Control) Rules, 2004
s. National Energy Policy, 2004
t. Sound Pollution Rules, 2006
u. Building Construction Rules, 2006

v. Medical Waste (Management and Handling) Rules, 2008
w. Mobile Court Act, 2009
x. Bangladesh Environmental Conservation (Amendment) Act, 2010
y. Bangladesh Environmental Conservation (Amendment) Rules, 2010
z. Bangladesh Environmental Court Act, 2010
aa. National Urban Sector Policy, 2011
bb. Hazardous Waste and Ship Breaking Waste Management Rules, 2011
cc. Bangladesh Water Act, 2013