

## **M.Sc. ZOOLOGY**

### **SEMESTER 2**

#### **CORE COURSE 5**

### **TOPIC: ANTHROPOGENIC SOURCES OF GLOBAL ENVIRONMENTAL CHANGE**

Anthro means human, so anthropogenic sources are related with all kind of human activities which are the drivers of climate change or likely to be.

**Following is listed below:**

1. Fossil fuel combustion.
2. Industrial activity (maximum combustion of CO<sub>2</sub> emission).
3. Agricultural style.
4. Changing land use pattern.
5. Waste decomposition.
6. Release of greenhouse gases during mining.

We will deal with every point individually:

#### **1. FOSSIL FUEL COMBUSTION:**

The combustion of fossil fuel in automobiles is primary source of consumption of fossil fuel and production of carbon di – oxide in the environment as the by product of the process. Other than this, fossil fuel is also used in household purposes.

Example ; kerosene stoves.

#### **2. INDUSTRIAL ACTIVITY:**

So many chemical reactions continuously go on in order to perform industrial activity and to meet the demand of the current society. This is the highest contributor of the CO<sub>2</sub> in the environment.

#### **3. AGRICULTURE:**

- In paddy fields, water inundation (logging) is commonly seen. This inundation blocks the oxygen supply to the soil pores leading to decomposition of plant part wastes without any use of oxygen resulting in the release of methane(CH<sub>4</sub>).
- In agricultural system carbon di -oxide is also produced whenever the material is decomposed aerobically. When the plants live in the reproductive phase, it does not absorb CO<sub>2</sub> in spite releases it. So, CO<sub>2</sub> emission occurs. This phenomenon does not occur in vegetative phase.
- 68% of N<sub>2</sub>O is produced by agricultural system, when urea and other fertilizers used in surplus amount. The unused (left

ones) urea was denitrified by specific micro-organisms. This denitrification process involves conversion of nitrate and nitrite into  $N_2O$ . This Released  $N_2O$  is a very strong greenhouse gas.

#### **4. CHANGING LAND USE PATTERN:**

Forest converted into industrial area, agricultural field, urbanization or any other such changes, come in this category.

- This leads to the loss of greenery.
- Landslides.

#### **5. WASTE DECOMPOSITION:**

Produced methane and  $N_2O$ .

#### **6. MINING:**

These are the sources of polluting gases and greenhouse gases.

In the next class we will deal with Greenhouse effect.

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