GLOSSARY

Abatement: The reduction in degree or intensity of pollution.

Acid Rain: A decrease in the pH of rain water caused by the presence of unnatural amount of sulphur dioxide, nitrogen oxides and other pollutants due to the burning of fossil fuels in power plants, factories and motor vehicles. Acid rain has damaged trees, lakes and soils throughout Europe and parts of North America.

Aerated Lagoon: A waste stabilisation pond through which sewage flows, supplied with oxygen by floating surface aerations and sometimes also by diffusers or submerged air pipes. If aeration is not widespread enough, it becomes possible for parts of the lagoon to become aerobic, especially in the bottom mud.

Ambient Air Quality: A general term used to describe the air outside. No qualitative measures are associated with the term. Ambient air quality is usually considered "good" or "bad", depending upon the measurement technique employed.

Bagasse: Crushed sugar cane, left as a fibrous residue after the sugar has been extracted.

Biodegradable Material: Organic waste materials that can be broken down into their basic elements by the action of micro-organisms.

Biodiversity: A term for the variety of ecosystem, plant and animal species, and genetic differences that exist on earth. Scientists estimate the number of species as between 5 million and 30 million - a range that indicates how poor our knowledge of life on earth.

Biochemical Oxygen Demand (BOD): The amount of dissolved chemical oxygen used up by decomposing bacteria during 5 days of incubation at 20°C. When the amount of organic wastes in the sewage increases, there is corresponding increase in bacterial population and consequently an increase in the amount of dissolved oxygen utilised also. In other words, the higher the BOD the higher the organic load in the sewage. Organic wastes can be classified easily - biodegradable and slowly biodegradable substances, cellulose, lignin, etc. are examples of the latter. Hence, slowly biodegradable substance do not decompose quickly. It is difficult to estimate their BOD within five days of incubation. The method of estimation of dissolved oxygen which is required for chemical decomposition of organic substances using oxidising chemical agents like potassium dichromate. The advantage is that even slowly biodegradable substances are
oxidised in this chemical process, so that the total organic content can be easily estimated. When the BOD is high, greater is the pollution. Prescribed limit of BOD of industrial effluents is 30 mg/l.

**Chemical Oxygen Demand (COD):** The weight of oxygen taken up by the total amount of organic matter in a sample of water without distinguishing between biodegradable and non-biodegradable organic matter. The result is expressed as the number of parts per million (or milligrams per litre, or gram per cubic metre) of oxygen taken up from a solution of boiling potassium dichromate in two hours. The test has been used for assessing the strength of sewage and trade wastes.

**Chlorofluorocarbons (CFC):** A class of chemicals implicated in two major environmental problems: Ozone-layer depletion and global warming. It takes about 15 years for a CFC molecule to move up to the atmosphere, where it can last about 100 years and destroy over that time 1,00,000 ozone molecules. CFCs are used as coolants in refrigerators and air-conditioners, propellants in aerosol cans, solvents used during the manufacture of computers, and blowing-agents that inflate flexible foams.

**Coliform Count:** An estimation of the bacterial purity of a water by the number of bacteria from the coliform group per minute.

**Dissolved Oxygen:** A measure of the amount of oxygen available for bio-chemical activity in a given amount of water. When wastes discharged into water increases, dissolved oxygen will decrease.

**Emission Standard:** The maximum amount of a pollutant that is permitted to be discharged from a single polluting source over a specified period of time.

**Environmental Impact:** Any alteration of environmental conditions or creation of a new set of environmental conditions, adverse or beneficial, caused or induced by the action or set of actions under consideration.

**Eutrophication:** Excessive flow of nitrate and phosphate into a water way which leads to growth of algae. Decomposition by the microorganisms depletes the oxygen content of the water and leads to death of the water way.

**Global Warming:** The anticipated increase of global average temperature by 2.5 to 5.5°C degrees Fahrenheit) in the next century. The consequences will be rising sea levels, which could have great impact on such developing countries as Bangladesh and Egypt, shifts in the needs and location of primary agricultural areas, and the acceleration of species loss, as plants and animals are unable to adjust quickly to changes in the conditions in their habitats. Global warming is caused by the increased concentration of CO₂ and other gases in the atmosphere, which
prevents some of the sun's heat from escaping and hence, turns the world into one big greenhouse. About 45% of this is due to the burning of fossil fuels. A further 10% is caused by the clearing and burning of forests, which contain huge amounts of carbon. And some 45% stems from the accumulation of methane, nitrous oxide and CFCs in the atmosphere.

Greenhouse Effect: The property of selective absorption used in the construction of greenhouse which finds a parallel in the general atmosphere. Water vapour and CO₂ although only a minute fraction of the mass of the atmosphere, exercise considerable influence over the heat balance of the atmosphere and ground. While relatively transparent to incoming shortwave solar radiation they are relatively opaque to long wave back radiation from the earth, hence they exercise a warming or greenhouse effect. A secular increase in carbon dioxide in the atmosphere, arising from progressive industrialization and the combustion of fossil fuels, could raise the mean temperature of the atmosphere, effecting profound climatic changes.

Hazardous Waste: Pollutants that can cause very serious damages even at relatively low concentrations.

Hazen Unit: A number that define the colour of water. Drinking water should have fewer than 5 Hazen units of colour.

Non-renewable Resource: Resources that exist as finite deposits in the earth's crust which do not get replenished i.e., resources that get depleted. For example fossil fuels.

Ozone Layer Depletion: Ozone is the only gas in the upper atmosphere that limits the amount of harmful ultraviolet (UV) radiation reaching the earth. Since 1969 it has dropped 3.0-5.5 percent during the winter at northern mid latitudes. (ozone in the lower atmosphere, on the other hand, is increasing and is a pollutant). Increased UV radiation can suppress the immune system, leading to more severe infectious diseases, and can increase the number of non-melanoma skin-cancer cases and of cataracts. Higher doses of UV radiation also appear to reduce the yield of soybeans and to threaten phytoplankton and other minute organisms important in the ocean's food chain.

pH: A scale used to designate the acidity or alkalinity of solutions or soil. pH 7 is neutral. Value of pHEMA<7, reflects acidic nature of the solution. Value of pH>7 indicates increasing basicity.

Rain Forest: A dense, luxuriant, closed, mesomorphic community; a global vegetation type containing many tree species associated with high rainfall and humidity, and a relative absence of frosts. There are 3 major divisions viz., tropical, subtropical and temperate. Silent valley in Kerala is an example of tropical rain forest.
Recycling: The return of discarded or waste materials to the production system for utilization in the manufacture of goods, with a view to the conservation as far as practicable of non-renewable and scarce resources.

Renewable Resources: Resources which may be replenished by natural cycles. Resources that may be used without depletion. For example solar energy.

Scrubber: An apparatus used in sampling and gas cleaning. According to the mechanism or mechanisms used scrubbers may be spray tower, jet, venturi, cyclonic, inertial, mechanical and packed scrubbers.

Sludge: Any solid, semi-solid or liquid waste generated from a municipal, commercial or industrial waste water treatment plant.

Slurry: A watery mixture of insoluble matter that results from some pollution control techniques.


Three Mile Island: A series of breakdowns in the cooling system of the Three Mile Island nuclear power plant No. 2 reactor led to a major accident on March 28, 1979.

Threshold Limit Value - Time Weighted Average (TLV-TWA): It is the maximum concentration of an air borne constituent for a normal 8 hour work day to which workers may be exposed repeatedly without adverse effects.