

Removal of Carbon Dioxide:

1. **Photosynthesis** – rainforests trap carbon dioxide through photosynthesis and have been important in maintain the low level of atmospheric carbon dioxide. Humans have upset this balance by deforesting vast areas of forest for agriculture and timber production. This means that less carbon dioxide is absorbed and quite often the vegetation is burnt so more carbon dioxide is released.
2. **Dissolves** in oceans.

Formation of Water Vapour:

1. Water from oceans **evaporates**.
2. **Transpiration** in plants.

Removal of Water Vapour:

1. **Precipitation**.

Methane:

- Produced by human activity when **organic waste decomposes** in landfill sites.
- Comes from **rice fields** as bacteria respire anaerobically – more rice is being planted as the human population increases.
- Comes from **cattle farming** – more cattle are being farmed for meat. Cattle release methane from their digestive systems as they process their food.
- Each methane molecule is **23 times more effective at trapping heat energy** compared to a molecule of carbon dioxide but has **less of an impact on global warming** because it is present in much **smaller amounts** in the atmosphere.

Damage of Greenhouse Gases:

Two things determine how damaging a greenhouse gas is:

- The **concentration** of the gas in the atmosphere.
 - This is affected by the rate at which it is released and how long it remains there.
- How **good it is at absorbing** long wave radiation.

HFCs as Greenhouse Gases:

Chlorofluorocarbons (CFCs) were used in aerosols and as refrigerants but were found to **damage the ozone layer** when released into the atmosphere. They are being replaced by **hydrofluorocarbons (HFCs)**, but this is leading to an additional problem because HFCs are greenhouse gases. Damage to the ozone layer is not a cause of the greenhouse effect of increased global temperature.

Effects of Global Warming:

- **Melting** ice caps and glaciers.
- A rise in **sea levels**, causing flooding to low lying areas.
- Changes in the **pattern of climate and winds**, leading to changes in ecosystems and the distributions of plants and animals. Some parts of the world may experience more storms and hurricanes. Changes in rainfall could lead to drought in some areas and flooding in others.
- **Extinction** and resultant loss of biodiversity.