



Acid Rain

ACID RAIN

ABOUT

- ↘ A broad term that includes any form of precipitation that contains acidic components i.e. sulfuric acid or nitric acid.

CAUSES

- ↘ SO₂ and NO_x emissions
- ↘ Industrial activities
- ↘ Burning of biomass and agricultural residues
- ↘ Volcanic eruptions
- ↘ Transportation emissions
- ↘ Formation of acid precursors in atmosphere

FORMS OF ACID DEPOSITION

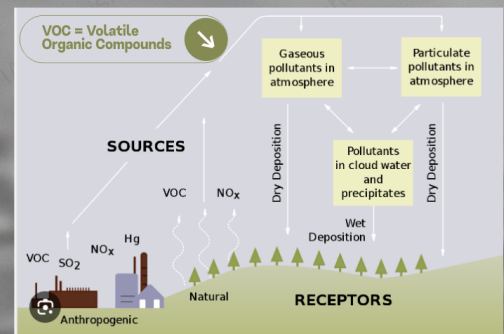
- ↘ **Wet Deposition:** When rain, sleet, snow, or fog become more acidic than normal
- ↘ **Dry Deposition:** When gases and dust particles become acidic

MEASUREMENT OF ACID RAIN

- ↘ Normal Rain (pH=5.6); Acid Rain (generally below pH 4.5)

EFFECTS

- ↘ Impacts on human health (skin and respiratory diseases)
- ↘ Soil degradation, water pollution and deforestation
- ↘ Aquatic ecosystem harm
- ↘ Corrosion
- ↘ Lower visibility



Acid Fog: When airborne pollutants, primarily acidic in nature, form a mist/fog that can have corrosive effects on surfaces and ecosystems.

SOLUTIONS

- ↘ Reducing emissions from vehicles, industries, etc.
- ↘ Adopting alternative energy sources
- ↘ Restoring acid rain damage through liming process

Convention on Long-Range Transboundary Air Pollution (LRTAP), 1979

A multinational accord to address transboundary air pollution, establishing a regional framework across Europe, North America, Russia, and former East Bloc nations.

◆ India is not a party.

Gothenburg Protocol to LRTAP (2019):

- ◆ **1st binding agreement** to include emission reduction commitments for fine particulate matter
- ◆ It seeks to reduce harmful effects of air pollution such as **acid rain** by targeting emissions of SO₂, NO_x, and VOCs.

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