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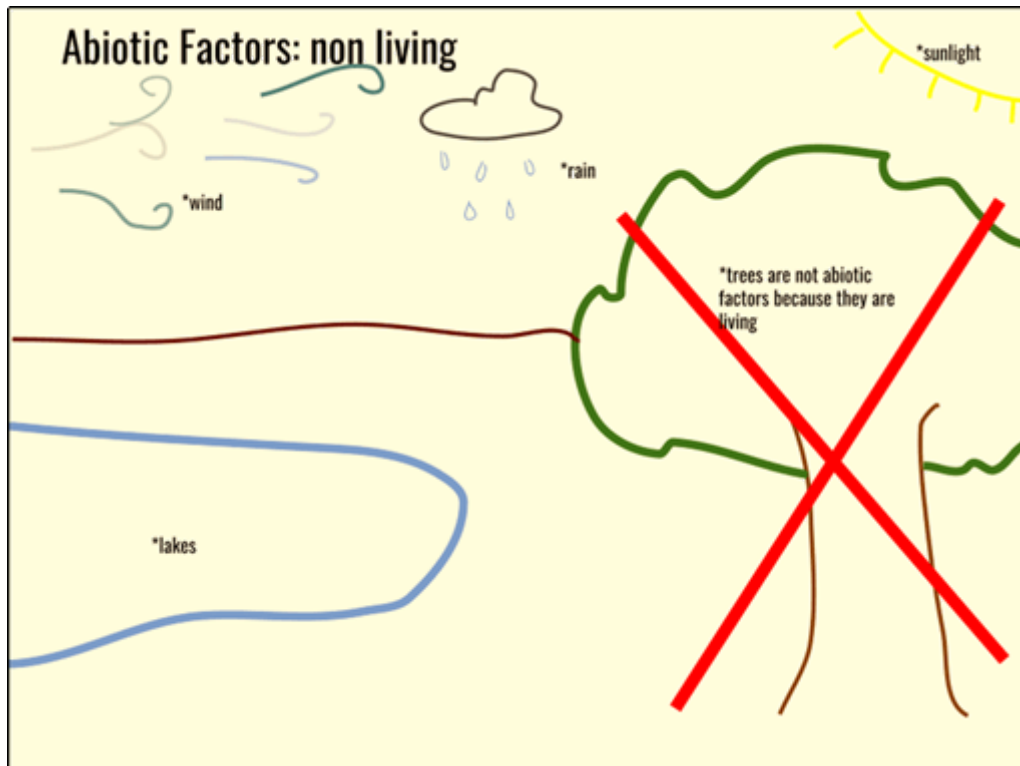
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Biotic and Abiotic Factors: Meaning and Introduction, Examples of Abiotic Factors (For CBSE, ICSE, IAS, NET, NRA 2022)

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Abiotic Factors Meaning and Introduction

- Abiotic means non-living and therefore the abiotic factors can be defined as the all the non-living factors present in an ecosystem.
- Examples are Sunlight, water, soil, etc.
- Non-living includes chemical and physical factors present in the atmosphere, hydrosphere, and lithosphere.
- These factors are completely independent of biotic factors.



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Examples of Abiotic Factors

Abiotic Factors in an Aquatic Ecosystem

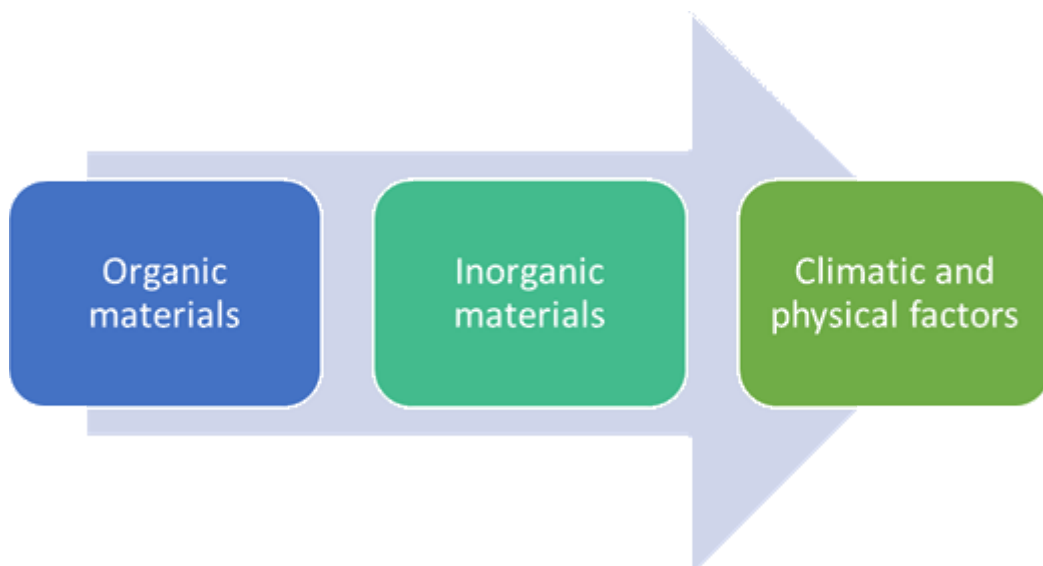
- Water Ph.
- Water depth
- Sunlight
- Turbidity

- Salinity
- Nutrients
- Dissolved oxygen

Abiotic Factors in a Terrestrial Ecosystem

- Soil
- Soil types
- Temperature
- Rain
- Altitude
- Wind
- Nutrients
- Sunlight

Abiotic Components of an Ecosystem



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Organic Materials

- This includes proteins, carbohydrates, lipids, humic substances (organic compounds that are important components of humus) , etc.
- They are responsible for linking the abiotic compounds with the biotic factors.

Inorganic Materials

- This includes carbon, nitrogen, Sulphur, phosphorous, water, etc.
- They are also responsible for the cycling of materials in an ecosystem.

Climatic and Physical Factors

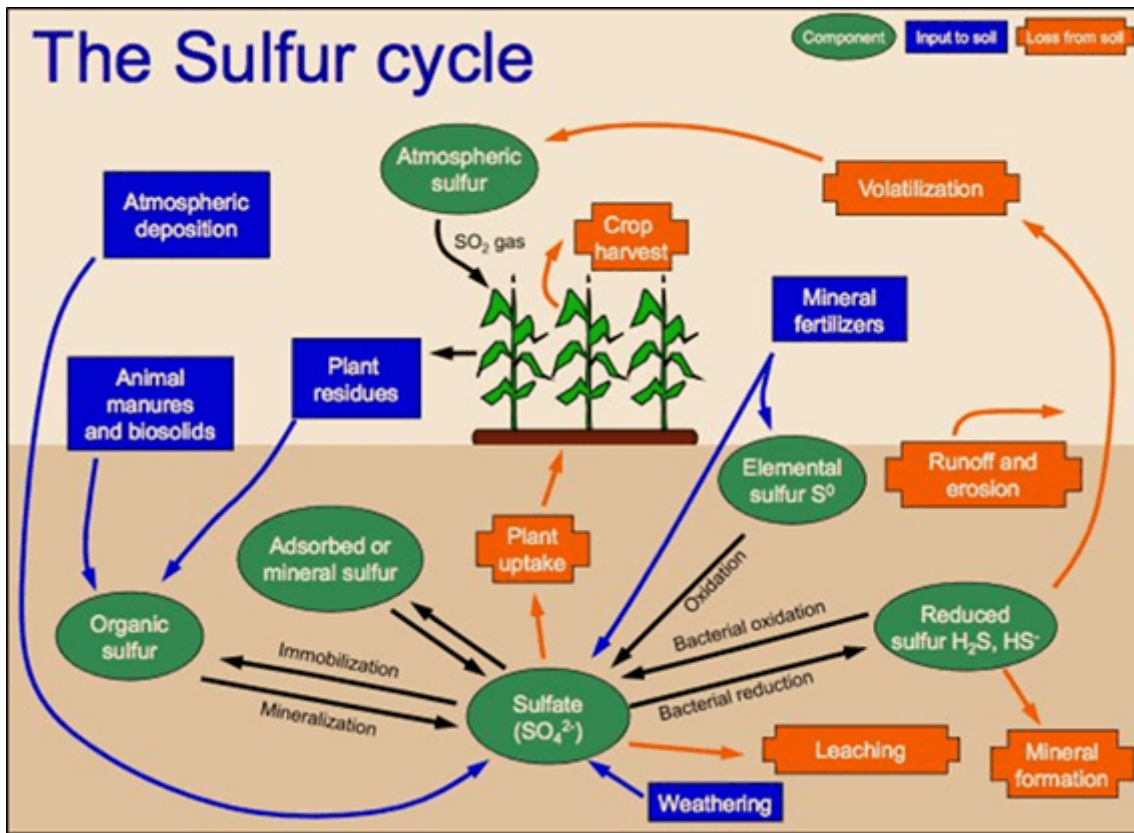
This includes soil texture, air, water, soil and sunlight, rainfall, temperature, humidity, etc.

Limiting Factor

- The single factor which can limit the range of an organism.
- For e. g. poor soil is the limiting factor as despite good rains and vegetation seeds do not germinate quickly in evergreen rain forests as the nutrients get washed away by the running water.
- Another example is the absence of sunlight as in case of a germinating tree with dense canopy which may not survive due to lack of sunlight.

Biogeochemical Cycle

- Biogeochemical is a combination of Biological Chemical and Geological Process.
- Here the chemical elements are recycled, energy flows through an ecosystem and is released as heat.
- Biogeochemical cycle can be defined as the ways in which an element or compound for e. g. water moves between its various living and non-living forms and locations in the biosphere.
- This cycle further includes the water, carbon, nitrogen, phosphorus, and Sulphur cycles.
- Some of the important biogeochemical cycles are The Carbon Cycle, The Oxygen Cycle, The Nitrogen Cycle, The Phosphorus Cycle, The Sulphur Cycle, etc.



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FAQs

Q. 1. What are the abiotic factors?

Answer: Abiotic factors are all those non-living components or factors present in an ecosystem. This further includes physical conditions and chemical factors that influence an ecosystem.

Q 2. List out some of the examples of abiotic factors.

Answer: Some of the examples of abiotic factors are:

Water, air, humidity, salinity, precipitation, dissolved oxygen, mineral nutrients, Type of soil, etc.

Q 3. What are the abiotic components of an ecosystem?

Answer: The abiotic components of an ecosystem are:

- i) Organic materials
- ii) Inorganic materials
- iii) Climatic and physical factors
- iv) Limiting factors

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