GLOBAL ECOSYSTEMS ATLAS - ENVIRONMENT

NEWS: Global Ecosystems Atlas was launched at the ongoing 16th Conference of Parties (COP16) to the United Nations Convention on Biological Diversity (CBD).

WHAT'S IN THE NEWS?

Global Ecosystems Atlas(GEA)

It has been developed by the **Group on Earth Observations (GEO) as the first global tool for ecosystem mapping and monitoring.**

The atlas targets the major challenges such as biodiversity loss, climate change, and land degradation globally.

Objectives

- Its atlas aims to transform the understanding and protection of vital natural systems in the world.
- It will provide **crucial data on ecosystem health and risks associated with the ecosystem.**
- The atlas aims to enable countries in informed decision-making for sustainable management of ecosystems.

Technology features used

GEA will utilise the **Earth observation, artificial intelligence, and field data to fill data gaps in ecosystem management.**

The atlas map has been aligned with the **Global Ecosystem Typology for consistency for the International Union for Conservation of Nature.**

IUCN Global Ecosystem Typology

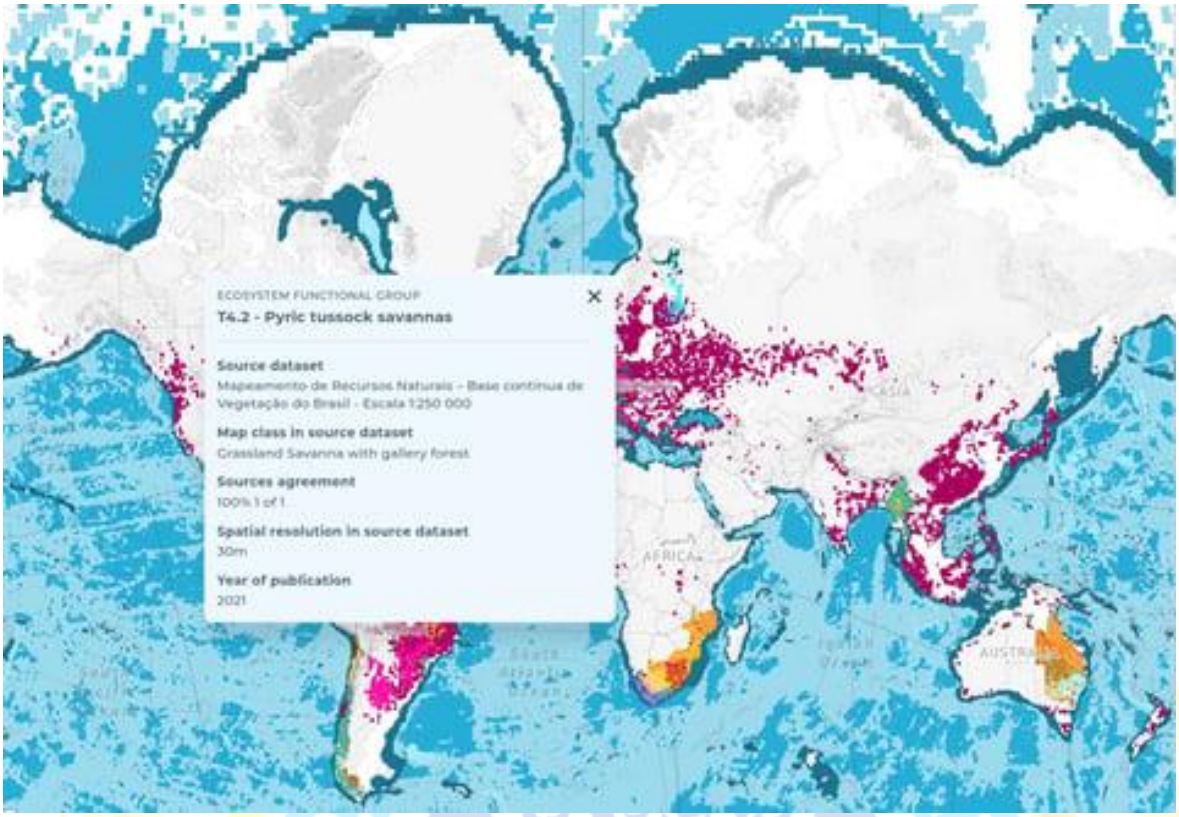
It is a detailed classification framework for Earth's ecosystems which integrates functional and compositional features of the ecosystem to identify key ecosystems for biodiversity conservation and human well-being.

In simple words, it is a **classification framework for Earth's ecosystems which helps us to identify ecosystems that are important for the conservation of biodiversity, research, and human well-being.**

Hierarchy

The typology is hierarchical with **six levels in it.**

It classifies ecosystems based on their functional characteristics and species assemblages.



Upper levels

- It Classifies ecosystems based on their functional characteristics like water regime, climatic regime, and food web structure. **This level includes realms, functional biomes, and ecosystem functional groups.**

Lower levels

- It Classifies ecosystems based on their species assemblages. The lower levels of typology include biogeographic **ecotypes, global ecosystem types, and sub globular local ecosystem types.**

The IUCN Global Ecosystem Typology

The IUCN Global Ecosystem Typology helps the countries and stakeholders to understand and compare the ecological traits of various ecosystems, which is essential for ecosystem management.

Definitions

Realm:

It is one of **five major components of the biosphere which are terrestrial, freshwater, marine, subterranean, atmospheric and transitional realms (Which is a combination of the other four realms).**

It is the broadest biogeographic division of the land surface on Earth based on the distribution patterns of terrestrial organisms. It is further subdivided into two parts- bioregions and ecoregions. The major realms around the world are:

Biome: It is a component of a realm. A biome is a community of flora and fauna that have common characteristics in the environment they exist in. **They're distinct geographical regions and have specific climate, vegetation, and animal life.**

Some examples of the biomes on land include **tundra, taiga, temperate deciduous forest, temperate rainforest, temperate grassland, chaparral, desert, savanna, and tropical rainforest.** The freshwater biomes are lakes, rivers, and wetlands, while the marine biomes include coral reefs and the oceans.

Ecosystem Functional Group: They are groups of functionally related ecosystems within a biome sharing common ecological drivers. They are grouped based on the role they play in an ecosystem. Primary producers, herbivores, carnivores, genera, species, domains, etc. are examples of functional groups.

Biogeographic ecotype: A biogeographic ecotype is a group or population of organisms which are adapted to local conditions and which can be found in patches in different regions. **Ecotypes are different from different subspecies, as they can exist in multiple habitats, and they also have no taxonomic rank.**

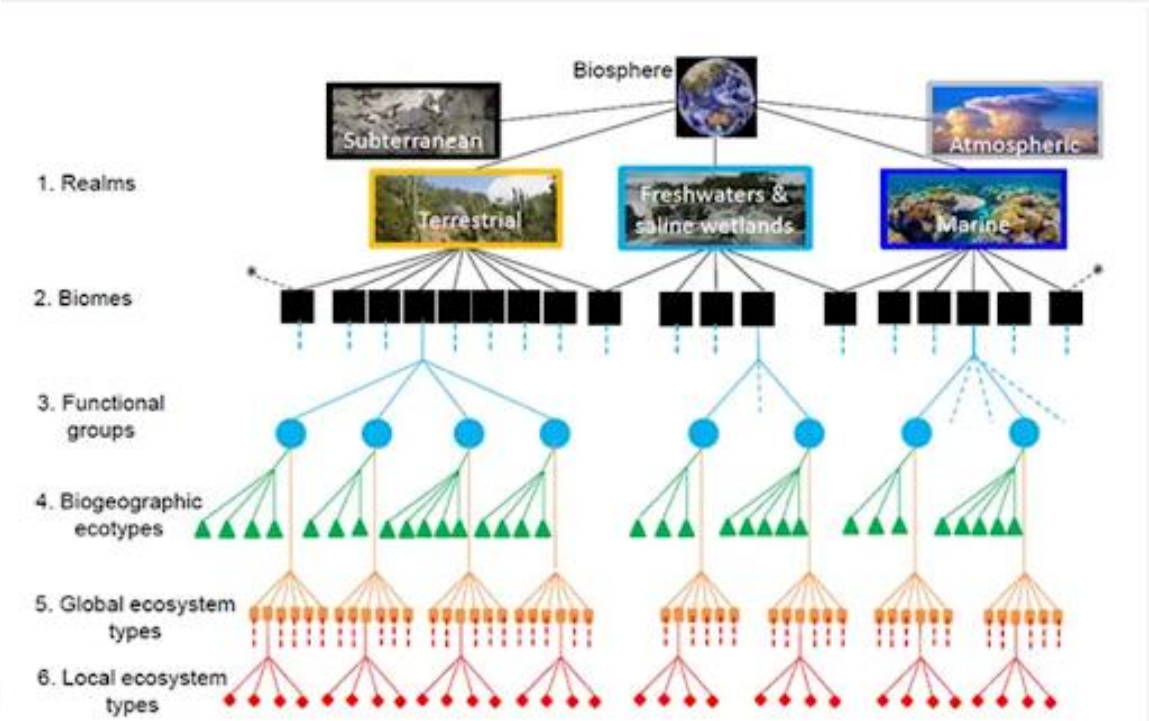
Global ecosystem types: they are complexes of organisms and their associated physical environment within a large area, which are occupied by an ecosystem functional group.

Subglobal ecosystem types: These are the subunits or nested groups of subunits within a global ecosystem type.

Importance of the Atlas for Stakeholders

Governments:

It is an essential tool for **countries, businesses, communities, and institutions for ecosystem conservation and planning.**



It supports the monitoring framework under the **Kunming-Montreal Global Biodiversity**

Framework.

It also guides the countries in compliance with the Convention on Biological Diversity(CBD) obligations on ecosystem protection.

It will help governments to monitor ecosystems, fulfil international commitments, and track biodiversity indicators.

Businesses:

Businesses and corporations can incorporate environmental risks into their business strategies.

Local Communities:

Local communities can also access data for conservation and restoration in their areas.

Financial Institutions: The atlas helps FIs to make informed investments and align their projects with sustainability goals.

Academics and Researchers:

Open data access of the Atlas will help academics and researchers for better research on ecosystems at global and regional levels.

Thus the atlas will prove to be an instrumental tool for Galba ecosystem management.

Source: https://www.downtoearth.org.in/wildlife-biodiversity/a-new-era-for-ecosystem-global-ecosystem-atlas-launched-at-cop16