

Biodiversity conservation during a global crisis: RSTV- Big Picture

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Participants:

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Context:

The 22nd of May is observed as the International Day for Biological Diversity – a day marked in the global calendar to raise and create awareness about biodiversity and its issues.

The theme of Biodiversity Day 2021 is – **We're part of the solution.**

Background:

Biodiversity encompasses the variety of life on Earth at all its levels, from genes to ecosystems, and evolutionary, ecological, and cultural processes that sustain life. In short, it is the foundation of ecosystem services of which human beings are a small part, along with the variety of animals, plants, and microorganisms. For almost every aspect of our lives, we depend on biodiversity.

Significance of biodiversity:

- An equilibrium in biodiversity is pertinent for the stability of ecosystems (every organism has an important role to play in the ecosystem services).
- Biodiversity forms the basis of life support systems like agriculture (agroforestry), carbon cycles, etc.
- The economic significance of [biodiversity](#) includes tourism, horticultural exports, etc.
- Numerous ecosystem services are provided by biodiversity, such as nutrient cycling, carbon sequestration, pest regulation and pollination, and sustaining agricultural productivity.
- Living in harmony with **Nature** has been an integral part of **Indian culture**. This has been abundantly reflected in a variety of traditional practices, religious beliefs, rituals, folklore, arts and crafts, and in the daily lives of the **Indian** people from time immemorial.

The extent of the damage: Despite biodiversity being critical to our survival, this ecosystem has come under severe stress over the last few decades – largely due to human activity.

- According to [WWF's Living Planet Report](#), biodiversity is being lost at an alarming rate and states that the numbers of mammals, birds, fish, plants and insects have declined by an average of 68% between 1970 and 2016.
- **The State of the World's Plants and Fungi 2020** assessment says two-fifths of the world's plants are at risk of extinction.
- We are in the age of the 6th mass extinction.

Challenges to the conservation of biodiversity:

- Role of humans in biodiversity extinction:
 - Human Greed: Use of animal products in consumption (tortoise – aphrodisiac, religious practices (pangolin – in black magic).
 - Ambition and superiority: [Green revolution](#) – replacement of traditional seeds by HYVs.
 - Population explosion and the increasing needs of humans resulting in the intrusion of humans into the safe spaces of biodiversity.
- Policy Lacunas: We do not have any provisions for securing IPR for traditional knowledge w.r.t genetic resources.
- Poor project implementation and follow-ups.
- Poor connectivity between protected areas and enhanced traffic (air, noise and light pollution) leads to animal deaths.
- Incessant climate change has disturbed the ecological niches of species.
- Man animal conflict due to proliferation of human habitat. Read more on [human-animal conflict](#).
- Invasive species like Whitefly, army bollworm, etc. cause irreparable damage to native crops.
- Aichi targets remain unachieved – Only 6% of India's area is under 'protected areas'.
 - (Aichi Target 11: By 2020, at least 17% of terrestrial and inland water, and 10% of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, to be conserved through well-connected systems of protected areas and other effective area-based conservation measures.)
- A dearth of financial resources to carry out prolonged action plans.
- Plantation of green deserts – Monocultures of Eucalyptus thereby resulting in reduced biodiversity in the name of afforestation.

Efforts at biodiversity conservation:

- **National**
- The [Biological Diversity Act, 2002](#) was passed by the Parliament of India to protect biodiversity and facilitate the sustainable management of biological resources with the local communities.
- Formation of the **National Biodiversity Authority**.
- **Wildlife Protection Act, 1972**: Provides for the protection of the country's wild animals, birds, and plant species, in order to ensure environmental and ecological security. Among other things, the Act lays down restrictions on hunting many animal species.
- Species-specific conservation programs like [Project Elephant](#).
- Phasing out single-use plastics.
- **Global**
- **Bonn Convention** aims to protect the migratory species of wild animals and their habitats.
- **United Nations Convention on Biological Diversity (UNCBD)** aims for:
 - Conservation of Biological Diversity

- Sustainable use of the components of the Biodiversity
- Fair and equitable sharing of benefits arising from the genetic resources
- The **Nagoya Protocol** on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity is an international agreement that aims at sharing the benefits arising from the utilization of genetic resources in a fair and equitable way.
- The '**Aichi Targets**' were adopted by the Convention on Biological Diversity (CBD) at its Nagoya conference. It is a short term plan that provides a set of 20 ambitious yet achievable targets.

Way forward: How can we be part of the solution?

- Sustainable development and sustainable harvesting of benefits from biodiversity.
- Ensuring the element of sustainability in business models because industries invariably make use of natural resources (land, water, raw material) to manufacture products and also are a major source of pollution.
- Special efforts to conserve the species which are on the brink of extinction.
- Research and partnership with **IUCN** are required for a net gain in biodiversity.
- Sensitization of the global community about the threats emanating from the loss of biodiversity.
- Separate action plans need to be employed for the different categories in the red data book.
 - Incentivizing and partnering with local communities in the conservation of biodiversity. It creates a sense of ownership, thereby promoting conservation.
 - For example, Maldharis & Rojandars live with Asiatic lions in the Gir forest and help in conservation.
- Reinventing our approach –
 - Mainstreaming **EIA** in our development activities.
 - Legislative impact assessment to assess the impact on environment and biodiversity.
- Better management of protected areas.
- Re-emphasizing conservation of the sacred groves which serves the twin purpose of conservation of tribal culture and protection of environment and biodiversity.
- Following the **one health approach**:
 - One Health is “the collaborative efforts of multiple disciplines working locally, nationally, and globally, to attain optimal health for people, animals and our environment.”
- Using advanced techniques like ex-situ conservation methods of biodiversity. **Ex-situ conservation** is the technique of conservation of all levels of biological diversity outside their natural habitats through different techniques like zoo, captive breeding, aquarium, botanical garden, and gene bank.
- Use of efficient techniques of afforestation – **Miyawaki method** (In this technique, various native species of plants are planted close to each other so that the greens receive sunlight only from the top and grow upwards rather than sideways. As a result, the plantation becomes approximately 30 times denser, grows 10 times faster and becomes maintenance-free after a span of 3 years.)

- Promoting the **3 R's**: The three R's – **reduce, reuse and recycle** – all help to cut down on the amount of waste we throw away. They conserve natural resources, landfill space and energy.

