

Global Assessment report on Biodiversity and Ecosystem Services

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Manifest pedagogy

Environmental reports by UN and its affiliated organisations and also prominent international NGOs like IUCN

have been asked both at the prelims and the mains stages. The findings of IPBES will be an important key area for upcoming prelims.

In news

Global Assessment Report on Biodiversity and Ecosystem Services-2019 by UN's

Placing it in the syllabus

Conservation, environmental pollution and degradation, environmental impact assessment

Static dimensions

- What is the Global Assessment report on Biodiversity and Ecosystem services?
- The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

Current dimensions

- Key findings of the report
- Suggestive measures to policy makers

Content

What is the Global Assessment Report(GAR)?

- It is a report **released by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)**, on the global state of biodiversity.
- The GAR is a global-level assessment of changes in Earth's biodiversity that have occurred over the past 50 years. It draws an extensive picture of economic development and its effects on nature in that period. The Report is prepared by a collaborative effort by 145 authors from 50 countries, produced over a three-year period. It informs better policies and actions in the coming decades.
- The IPBES Global Assessment Report on Biodiversity and Ecosystem Services is the most comprehensive ever completed. It is the first intergovernmental Report of its kind and builds on the landmark Millennium Ecosystem Assessment of 2005, introducing innovative ways of evaluating evidence.
- The report will **offer an integrated overview of where the world stands in relation to key international goals, including the Sustainable Development Goals (SDGs), the Aichi Biodiversity Targets and the Paris Agreement on climate change.** It examines causes of biodiversity and ecosystem change, the implications for people, policy options and likely future pathways over the next three decades if current trends continue, and other scenarios.
- **This report includes, for the first time, indigenous and local knowledge as well as scientific studies.**

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

- It has 132 member states
- It is the global body that assesses the state of biodiversity and nature's contributions to people, in

response to requests from decision-makers, and outlines options for the future based on different socio-economic choices.

- **The mission of IPBES: To strengthen policy and decisions through science, for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development.**
- Often described as the 'IPCC for Biodiversity', IPBES is the global science-policy forum tasked with providing the best available evidence to all decision-makers for people and nature.
- The IPBES Secretariat is hosted by the German Government and **located on the United Nations campus in Bonn**. More than 1000 scientists worldwide contribute to the work of IPBES on a voluntary basis. They are nominated by their Governments or organizations and selected by the IPBES Multidisciplinary Expert Panel.

Key findings of the report

- According to findings of the report, **one million species are at risk of extinction. It also mentions serious consequences for human beings as well as the rest of life on Earth.**
- **The report mentions that forests, oceans, and other parts of nature soak up 60 percent of global fossil fuel emissions every year.**
- It also mentions that **wetlands are down to less than 15 percent of what they were 300 years ago and coral reefs facing a global bleaching crisis.**
- Current global response insufficient, 'Transformative changes' needed to restore and protect nature;
- the report released by IPBES warns that nature is declining globally at rates unprecedented in human history – and the rate of species extinction is accelerating, with grave impacts on people around the world now likely.

- The report hints that it is not too late to make a difference, but only if we start now at every level from local to global. It mentions that “Through ‘transformative change’, nature can still be conserved, restored and used sustainably – this is also key to meeting most other global goals. By transformative change, we mean a fundamental, system-wide reorganization across technological, economic and social factors, including paradigms, goals, and values”
- The report finds that approximately 1 million animal and plant species are now threatened with extinction, many within decades, more than ever before in human history.
- As per the findings of the report, the average abundance of native species in most major land-based habitats has fallen by at least 20%, mostly since 1900. More than 40% of amphibian species, almost 33% of reef-forming corals and more than a third of all marine mammals are threatened. The picture is less clear for insect species, but available evidence supports a tentative estimate of 10% being threatened.
- The report also mentions that at least **680 vertebrate species had been driven to extinction since the 16th century** and more than 9% of all domesticated breeds of mammals used for food and agriculture had become extinct by 2016, with at least 1,000 more breeds still threatened.
- To increase the policy-relevance of the Report, the assessment’s authors have ranked, for the first time at this scale and based on a thorough analysis of the available evidence, the **five direct drivers of change in nature** with the largest relative global impacts so far. These culprits are, in descending order:
 - Changes in land and sea use.
 - Direct exploitation of organisms.
 - Climate change.
 - Pollution and
 - Invasive alien species.

- The Report notes that, since 1980, greenhouse gas emissions have doubled, raising average global temperatures by at least 0.7 degrees Celsius – with climate change already impacting nature from the level of ecosystems to that of genetics – impacts expected to increase over the coming decades, in some cases surpassing the impact of land and sea use change and other drivers.
- The Report also finds that global goals for conserving and sustainably using nature and achieving sustainability cannot be met by current trajectories, and goals for 2030 and beyond may only be achieved through transformative changes across economic, social, political and technological factors.
- The report states that With good progress on components of only four of the 20 Aichi Biodiversity Targets, it is likely that most will be missed by the 2020 deadline and current negative trends in biodiversity and ecosystems will undermine progress towards 80% (35 out of 44) of the assessed targets of the Sustainable Development Goals, related to poverty, hunger, health, water, cities, climate, oceans and land.
- According to the report, to better understand and, more importantly, to address the main causes of damage to biodiversity and nature's contributions to people, we need to understand the history and global interconnection of complex demographic and economic indirect drivers of change, as well as the social values that underpin them.
- The report mentions indirect drivers responsible for the damage to biodiversity, they are;
 - Increased population and per capita consumption.
 - Technological innovation, which in some cases has lowered and in other cases increased the damage to nature and
 - Critically, issues of governance and accountability.

- The report mentions that **three-quarters of the land-based environment and about 66% of the marine environment have been significantly altered by human actions**. On average these trends have been less severe or avoided in areas held or managed by Indigenous Peoples and Local Communities.
- It also mentions that more than a third of the world's land surface and nearly 75% of freshwater resources are now devoted to crop or livestock production.
- As per the report, The value of agricultural crop production has increased by about 300% since 1970, raw timber harvest has risen by 45% and approximately 60 billion tons of renewable and nonrenewable resources are now extracted globally every year – having nearly doubled since 1980.
- It also states that land degradation has reduced the productivity of 23% of the global land surface, up to US\$577 billion in annual global crops are at risk from pollinator loss and 100-300 million people are at increased risk of floods and hurricanes because of loss of coastal habitats and protection.
- According to it, in 2015, 33% of marine fish stocks were being harvested at unsustainable levels; 60% were maximally sustainably fished, with just 7% harvested at levels lower than what can be sustainably fished.
- It mentions that urban areas have more than doubled since 1992.
- It states that plastic pollution has increased tenfold since 1980, 300-400 million tons of heavy metals, solvents, toxic sludge and other wastes from industrial facilities are dumped annually into the world's waters, and fertilizers entering coastal ecosystems have produced more than 400 ocean 'dead zones', totaling more than 245,000 km² (591-595) – a combined area greater than that of the United Kingdom.
- Negative trends in nature will continue to 2050 and beyond in all of the policy scenarios explored in the

Report, except those that include transformative change – due to the projected impacts of increasing land-use change, exploitation of organisms and climate change, although with significant differences between regions.

Suggestive measures to policy makers

- The Report presents an illustrative list of possible actions and pathways for achieving them across locations, systems, and scales, which will be most likely to support sustainability. Taking an integrated approach:
- In **agriculture, the Report emphasizes, among others:** promoting good agricultural and agroecological practices; multifunctional landscape planning (which simultaneously provides food security, livelihood opportunities, maintenance of species and ecological functions) and cross-sectoral integrated management. It also points to the importance of **deeper engagement of all actors throughout the food system** (including producers, the public sector, civil society, and consumers) and more integrated landscape and watershed management; conservation of the diversity of genes, varieties, cultivars, breeds, landraces and species; as well as approaches that empower consumers and producers through market transparency, improved distribution and localization (that revitalizes local economies), reformed supply chains and reduced food waste.
- In **marine systems**, the Report highlights, among others: ecosystem-based approaches to fisheries management; spatial planning; effective quotas; marine protected areas; protecting and managing key marine biodiversity areas; reducing runoff pollution into oceans and working closely with producers and consumers.
- In **freshwater systems**, policy options and actions include, among others: more inclusive water governance for collaborative water management and greater equity;

better integration of water resource management and landscape planning across scales; promoting practices to reduce soil erosion, sedimentation and pollution runoff; increasing water storage; promoting investment in water projects with clear sustainability criteria; as well as addressing the fragmentation of many freshwater policies.

- In **urban areas**, the Report highlights, among others: promotion of nature-based solutions; increasing access to urban services and a healthy urban environment for low-income communities; improving access to green spaces; sustainable production and consumption and ecological connectivity within urban spaces, particularly with native species.
- Across all examples, the Report recognizes the importance of including different value systems and diverse interests and worldviews in formulating policies and actions. This includes the **full and effective participation of Indigenous Peoples and Local Communities in governance**, the reform, and development of incentive structures and ensuring that biodiversity considerations are prioritized across all key sector planning.
- It highlights the importance of, among others, adopting integrated management and cross-sectoral approaches that take into account the trade-offs of food and energy production, infrastructure, freshwater and coastal management, and biodiversity conservation.