



ECOSYSTEM AND ITS CONSERVATION

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ABSTRACT

All nations are really concerned about the ecosystem since we are on the brink of extinction right now as a result of climate change and global warming. Numerous hazardous problems, such as climate change and global warming, are all around us. Humans, animals, and plants cannot coexist happily on our auspicious universe without a healthy ecology. The study aims to comprehend the significance of ecosystems and their preservation. The paper also examines collective efforts of government of India in sustaining ecosystem.

Keywords: *Ecosystem, ecosystem conservation, ecosystem impact.*

INTRODUCTION

It has been noted that the ecosystem is the foundation of every living thing. It has suffered severe harm worldwide in recent years, particularly due to human-caused activities that have endangered the ecology.

“Climate change is a long-lasting change in the weather arrays across tropics to polls. It is a global threat that has embarked on to put stress on various sectors”.(Kashif Abbas and Muhammad Qasim ,42541) It affects ecosystem seriously. All countries expressed their concern over the depletion of ecosystem and decided to come together to set up some protocols to save ecosystem.

An ecosystem is a complex network of living organisms (plants, animals, microorganisms) interacting with each other and their physical environment (air, water, soil) in a specific area.

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Ecosystems can range in size and type, including forests, grasslands, deserts, wetlands, oceans, and urban areas. An ecosystem is a naturally occurring grouping of the environment and life. The term "life" refers to the biotic community, which includes all living things, including plants and animals.

Importance of Ecosystems:

1. Biodiversity: Ecosystems support diverse life forms, which maintain ecological balance.
2. Ecosystem Services: They provide resources like clean air, water, food, and materials.
3. Climate Regulation: Forests and oceans act as carbon sinks, reducing global warming.
4. Cultural and Recreational Value: Ecosystems offer spiritual, aesthetic, and recreational benefits.
5. Support for Agriculture and Livelihoods: Ecosystems enable soil fertility, pollination, and water cycles critical for farming and human livelihoods.

Threats:

Other imminent threats include the alteration of the Earth's carbon, nitrogen, and other biogeochemical cycles through the burning of fossil fuels and heavy use of nitrogen fertilizer; degradation of farmland through unsustainable agricultural practices; squandering of fresh water resources; toxification of land and waterways; and overharvesting of fisheries, managed forests, and other theoretically renewable systems. These threats to ecosystem services are driven ultimately by two broad underlying forces. One is rapid, unsustainable growth in the scale of the human enterprise in population size, in per-capita consumption, and also in the environmental impacts that technologies and institutions generate as they produce and supply those consumables (Ehrlich et al. 1977). The other underlying driver is the frequent mismatch between short-term, individual economic incentives and long-term, societal well-being. Ecosystem services are generally greatly undervalued for a number of reasons: many are not traded or valued in the marketplace; many serve the public good rather than provide direct benefits to individual landowners; private property owners often have no way to benefit financially from the ecosystem services supplied to society by their land; and, in fact, economic subsidies often encourage the conversion of such lands to other, market-valued activities. Thus, people whose activities disrupt ecosystem services often do not pay directly for the cost of those lost services. Moreover, society often does not compensate landowners and others who do safeguard ecosystem services for the economic benefits they lose by foregoing more lucrative but destructive land uses. There is a critical need for policy measures that address these driving forces and embed the value of ecosystem services into decision making frameworks.



Conservation of Ecosystems

Conservation involves protecting ecosystems from degradation, restoring damaged ones, and promoting sustainable use of their resources.

Strategies for Ecosystem Conservation

1. **Afforestation and Reforestation:** Planting trees to restore degraded areas.
2. **Protected Areas:** Establishing national parks, wildlife sanctuaries, and biosphere reserves.
3. **Pollution Control:** Reducing emissions, managing waste, and preventing chemical spills to protect land and water systems.
4. **Sustainable Resource Use:** Encouraging practices like regulated fishing, sustainable farming, and renewable energy adoption.
5. **Community Participation:** Involving local populations in conservation efforts for shared benefits.
6. **Restoration Projects:** Rehabilitating ecosystems through actions like wetland restoration or coral reef protection.
7. **Legislation and Policies:** Enforcing environmental laws to prevent activities like deforestation, overfishing, and illegal mining.
8. **Education and Awareness:** Promoting environmental education to foster a culture of conservation.

Successful Conservation Efforts:

The Government of India has been undertaking number of steps aimed at protecting the ecosystem and implementing conservation which have a direct/indirect impact on combating climate change. India has updated its Nationally Determined Contribution (NDC) in 2022 and enhanced its target of electric power generation installed through non-fossil fuel to 50% by 2030 and to reduce the emission intensity of the GDP by 45% as compared to 2005 levels and has set a target for creation of carbon sink of 2.5 – 3 billion tons by 2030. The Government of India has also included a non quantitative target in the updated NDC namely LiFE - 'Lifestyle for Environment' as a key to combating climate change by involving people's everyday actions. Besides, India has also submitted its LongTerm Low Emission Development Strategy (LT-LEDS) in COP 27 which has declared its goal of becoming net-zero by 2070.



The Government of India is also implementing National Action Plan on Climate Change (NAPCC) which comprises missions in specific areas of solar energy, energy efficiency, water, agriculture, Himalayan eco-system, sustainable habitat, green India, human health and strategic knowledge on climate change. These Missions are institutionalized and implemented by their respective nodal Ministries. Most of these Missions, inter-alia, focus on adaptation to combat the adverse impacts of climate change. The National Mission for a Green India (GIM) is one of the eight Missions outlined under the NAPCC. It aims at protecting, restoring and enhancing India's forest cover and responding to Climate Change by undertaking plantation activities in the forest and non-forest areas. The Department of Science and Technology is implementing two National Mission - National Mission for Sustaining the Himalayan Ecosystem (NMSHE) and National Mission on Strategic knowledge for Climate Change (NMSKCC). Under these Missions' support is being provided to various Institutions and Universities to carry out R&D studies related to climate change science and adaptation strategies. In order to address the problem of climate change, various mitigation and adaptation strategies have been suitably incorporated under several flagship Urban Missions/ Schemes of Ministry of Housing and Urban Affairs (MoHUA) viz. Swachh Bharat Mission - Urban (SBM-U), Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Smart Cities Mission (SCM), Pradhan Mantri Awas Yojana - Urban (PMAY-U) and Metro Rail Projects. The Government has announced the scheme AmritDharohar to encourage optimal use of wetlands, and enhance bio-diversity, carbon stock, eco-tourism opportunities and income generation for local communities. Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI) is being undertaken through NCM for protection of the shoreline and as a climate mitigation and adaptation measure.

DST has also supported 29 States/Union Territories to strengthen State Climate Change Cells (SCCCs) to take up vulnerability & risk assessment and State's specific issues relating to climate change which outline sector specific and cross sectoral priority actions under State Action Plan on Climate Change (SAPCC).

Government of India (GoI) has launched the Namami Gange Programme in 2014-15, to accomplish the twin objectives of effective abatement of pollution, conservation and rejuvenation of National River Ganga and its tributaries. The main objective of river rejuvenation programme is to meet the primary water quality criteria for outdoor bathing notified by the Ministry of Environment, Forest & Climate Change (MoEF&CC).

There are some other projects safeguards the ecosystem.

- 1 Project Tiger (India): Aimed at conserving tigers and their habitats.
2. Wetland Restoration in Ramsar Sites: Protecting wetlands globally under the Ramsar Convention.



3. Marine Protected Areas (MPAs): Safeguarding marine biodiversity and coral reefs. By integrating conservation with sustainable development, ecosystems can continue providing essential services, ensuring the survival of countless species, including humans.

CONCLUSION:

Our ecology can only remain more vibrant and attractive if we all work together to create a sustainable environment. All living things are worthless without an ecosystem. The ecosystem is the lifeblood of our world.

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