



## EDITORIAL: **THE HINDU**

**GENERAL STUDIES 3: ENVIRONMENT**

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**TOPIC: ECOLOGY**

### Ecology is the world's permanent economy

#### 1. Context and Significance

- Climate change and biodiversity loss are accelerating, threatening economic stability and human well-being.
- Recognizing the **role of nature as a foundation for the economy** is now more crucial than ever.
- The phrase “**Ecology is the World's Permanent Economy**”, popularized by **Sunderlal Bahuguna**, emphasizes that **ecological health is central to sustainable economic growth**.

#### 2. Understanding Ecology

- **Definition:**
  - Ecology is the **scientific study of interactions between living organisms and their environment**.
  - It includes understanding **ecosystems, biodiversity, energy flows, and conservation**.
- **Two perspectives from HEFS:**
  - A branch of **Biology** studying relationships between organisms and their environment.
  - A **complex network** of these relationships, extending to human-environment interactions.
- **Levels of biological organization** in ecology:
  - Organisms
  - Populations
  - Communities
  - Biomes
- **Applications:**
  - Helps understand **species distribution, habitat use, climate impacts, and conservation planning**.



- **Indian context:**
  - **Ramdeo Misra** is known as the **Father of Indian Ecology**.
  - The **Wildlife Institute of India** uses habitat ecology for species conservation strategies.

### 3. Ecology's Role in Supporting Economic Growth

- **Natural Resources Fuel the Economy:**
  - Forests, rivers, and oceans are critical to agriculture, tourism, water supply, and fisheries.
  - Overexploitation results in resource depletion, food insecurity, and energy crises.
- **Climate Resilience and Disaster Prevention:**
  - Healthy ecosystems act as buffers against floods, droughts, and cyclones.
  - Conservation reduces disaster-related losses and builds economic resilience.
- **Green Jobs and Sustainable Industries:**
  - Examples like **Karnataka's Climate Action Plan** create jobs via afforestation and clean energy initiatives.
  - Businesses adopting sustainability benefit from **higher efficiency and better branding**.
- **Biodiversity and Human Well-being:**
  - Ecosystem services like **pollination, water purification, and soil fertility** are crucial for agriculture and health.
  - Conservation prevents environmental degradation and supports public health.

### 4. Related Case Studies

- **Economic Valuation of Tiger Reserves:**
  - Highlights how protecting biodiversity contributes to **local economies** via tourism and ecosystem services.
- **Natural Resource Accounting of Pollution:**
  - Shows the **financial burden of air and water pollution** on productivity.



- Demonstrates that **sustainable practices reduce economic losses** and increase long-term gains.

## 5. Challenges in Balancing Ecology and Economy

- **Deforestation and Habitat Loss:**
  - Industrial growth often overlooks ecological concerns in pursuit of short-term profits.
- **Pollution and Resource Depletion:**
  - Air, water, and land degradation reduce natural capital and future economic potential.
- **Policy and Governance Gaps:**
  - Inadequate environmental regulations and enforcement mechanisms.
  - Lack of long-term ecological vision in mainstream economic policy.

## 6. Policy Measures for Eco-Economic Balance

- **Climate Finance and Green Investments:**
  - India's **Climate Finance Taxonomy** guides capital flows into eco-friendly sectors.
  - The **Union Budget 2024–25** prioritizes renewable energy and carbon neutrality.
- **Carbon Market and Emission Targets:**
  - India has committed to a **45% reduction in emissions by 2030** under the Paris Agreement.
  - The **Indian Carbon Market Framework** promotes emission reductions through tradable carbon credits.
- **Sustainable Agriculture and Biodiversity:**
  - **National Biodiversity Action Plan** supports agroecological methods and conservation.
  - The **PM-KUSUM scheme** promotes solar-powered irrigation to reduce fossil fuel dependency.
- **Urban and Coastal Sustainability:**
  - **Shoreline Assessment Programme** helps mitigate coastal erosion and habitat loss.
  - **Smart Cities Mission** integrates **green buildings, urban forests, and water conservation** systems.



## 7. Way Forward

- **Ecology in Economic Planning:**
  - Include environmental metrics in GDP accounting and development goals.
  - Ecological costs must be internalized in economic decision-making.
- **Promoting Green Innovation:**
  - Encourage **clean energy, waste-to-wealth technologies, and circular economy models.**
- **Strengthen Grassroots Conservation:**
  - Involve **local communities, panchayats, and civil society** in ecological stewardship.
  - Create incentives for **sustainable lifestyles and eco-friendly consumption patterns.**

## 8. Conclusion

- Ecology is not separate from the economy — it is its **permanent foundation.**
- Protecting nature ensures **long-term economic security, climate stability, and human well-being.**
- A **nature-centric development model** can achieve growth that is inclusive, resilient, and sustainable.

Source: <https://www.thehindu.com/opinion/op-ed/ecology-is-the-worlds-permanent-economy/article69572346.ece>