

## **NHAI SUSTAINABILITY REPORT 2023–24 – ECONOMY**

NEWS: The **National Highways Authority of India (NHAI)** released its **second Sustainability Report** for FY 2023–24, detailing significant achievements in integrating **Environmental, Social, and Governance (ESG)** principles into its operations.

- The report aligns with India's **Mission LiFE**, and the principles of a **circular economy**.

### **WHAT'S IN THE NEWS?**

#### **Major Environmental Sustainability Initiatives by NHAI**

##### **1. Decoupling Growth from Emissions**

- Despite a significant **20% increase in National Highway construction**, the **National Highways Authority of India (NHAI)** has reduced its **greenhouse gas (GHG) emission intensity**.
- The emission intensity has decreased from **1.0 to 0.8 MTCO<sub>2</sub>e/km**, reflecting a successful decoupling of construction expansion from carbon emissions.

##### **2. Promoting Circular Economy in Road Construction**

- In **FY 2023–24**, NHAI utilized **over 631 lakh metric tonnes** of **recycled and reused materials** in highway construction.
- Materials reused include **fly ash, plastic waste, reclaimed asphalt pavement (RAP)**, and **construction & demolition waste**, leading to:
  - Significant reduction in construction waste.
  - Increased **resource efficiency**.
  - Support for **low-carbon material transitions**.

##### **3. Water Body Rejuvenation under Amrit Sarovar Mission**

- NHAI contributed to the creation and rejuvenation of **467 water bodies** across various regions.
- This effort has led to the recovery of approximately **2.4 crore cubic meters of soil**, which:
  - Is reused in embankments and road construction.
  - Resulted in **estimated cost savings of ₹16,690 crore** in construction materials.
  - Improved groundwater recharge and local ecosystem services.

#### **4. Reduced Water Use Intensity**

- NHAI achieved a **74% reduction** in **water use intensity** in water-stressed and semi-arid regions.
- This is done by:
  - Implementing **water-saving technologies**.
  - Promoting **treated water use, stormwater harvesting, and dust suppression systems**.

### **How Infrastructure Development Can Be Synergised with Environmental Sustainability**

#### **1. Adopt Green Infrastructure Principles**

- Integrate **nature-based solutions** into infrastructure design such as:
  - **Permeable pavements** to reduce runoff.
  - **Green roofs and walls** for insulation and biodiversity.
  - **Urban forests and bio-swales** to absorb pollutants and manage stormwater.

#### **2. Integrate EIA and SEA in Project Planning**

- Conduct **Environmental Impact Assessments (EIA)** at the **planning stage**, making them tools for **project redesign**, not just regulatory clearance.
- Employ **Strategic Environmental Assessments (SEA)** for **multi-project or regional-level decisions**, ensuring cumulative and social impacts are addressed.

### **3. Promote Circular Economy and Use of Sustainable Materials**

- Mandate the use of:
  - **Recycled aggregates, fly ash bricks, geo-polymers, and locally available materials.**
  - **Reclaimed asphalt and construction & demolition (C&D) waste** to reduce virgin resource extraction.
- Encourage use of **low-carbon cement** and **green concrete**.

### **4. Enhance Green Cover and Ecological Buffers**

- Integrate **tree plantation drives, green corridors, and ecological buffers** into transport and urban infrastructure.
- Follow a **"Tree First, Road Next"** approach in **eco-sensitive zones** and forested areas.
- Develop **greenbelt zones** along highways and industrial corridors to act as carbon sinks.

### **5. Water Conservation and Efficient Water Use**

- Build **stormwater harvesting structures, check dams, and greywater reuse systems** in infrastructure projects.
- Rejuvenate **traditional water bodies** and incorporate **water budgeting** for project areas.

### **6. Wildlife and Biodiversity Safeguards**

- In linear infrastructure like roads, rails, and pipelines, integrate:
  - **Wildlife overpasses and underpasses** (eco-bridges).
  - **Animal corridors** to maintain biodiversity connectivity.
- Avoid habitat fragmentation and prioritize **minimum ecological disruption**.

### **7. Support Low-Carbon Transport Infrastructure**

- Promote **mass rapid transit systems (MRTS)**, **electric vehicle (EV) readiness**, and **non-motorized transport (NMT)** such as cycling lanes and pedestrian zones.
- Develop **dedicated freight corridors** and multimodal logistics parks to reduce emissions from road freight.

### **8. Policy Coherence and ESG Integration**

- Align infrastructure development with:
  - **Mission LiFE (Lifestyle for Environment)**,
  - **National Action Plan on Climate Change (NAPCC)**,
  - **Sustainable Development Goals (SDGs)**.
- Mandate **Environmental, Social, and Governance (ESG) reporting** by public infrastructure agencies to enhance accountability and transparency.

### **About NHAI: Institutional Role**

- **National Highways Authority of India (NHAI)** is a **statutory body** under the **Ministry of Road Transport and Highways**.
- It was established under the **NHAI Act, 1988**, and became operational in **February 1995**.

- The authority is headed by a **Chairman** and comprises **up to 5 full-time and 4 part-time members**, appointed by the **Central Government**.
- It is responsible for the **development, maintenance, and management** of **National Highways** across the country.

### **Conclusion**

- NHAI's recent sustainability initiatives signify a paradigm shift from **"build fast" to "build green."**
- This reflects a growing recognition that **economic growth** through infrastructure must be matched by **ecological responsibility**.
- India's infrastructure journey must now follow a **"Concrete with Conscience"** approach — ensuring every road, bridge, or port is built not just for speed and scale but also for **sustainability and resilience**.