

# UNIT:1

## Environmental Concepts in Business: Foundations & Future

Global environmental problems like climate change and shortage of natural resources are affecting how products are made, sold, and bought. Today, many investors look at Environmental, Social, and Governance (ESG) factors before making investment decisions. At the same time, businesses are under pressure from governments and customers to be more eco-friendly and responsible. Join us to learn how including environmental values in business can help protect nature and also bring financial success.

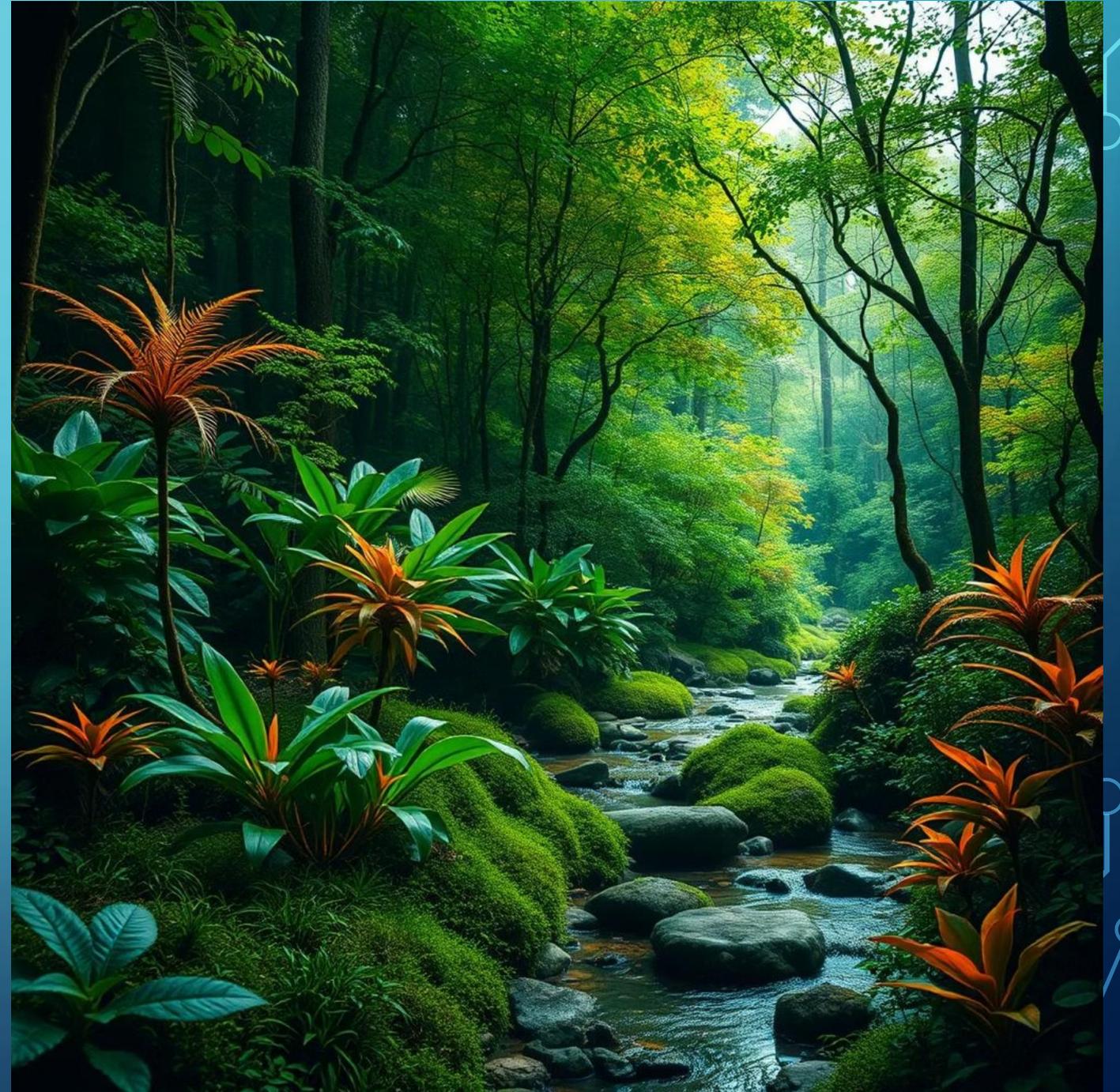
 by Priya Patel



# Environmental Fundamentals & Business Operations

At the core, **Ecology** is the scientific study of how organisms interact with each other and their surrounding environment. This leads to the concept of an **Ecosystem**, a functional unit where living organisms interact with their non-living environment, like the vast Amazon Rainforest or the vibrant Great Barrier Reef.

A key tool in environmental management is the **Environmental Impact Assessment (EIA)**, which is mandatory for over 70% of major development projects in developed nations.



# Environmental Components & Man-Environment Relationship

The environment comprises two main categories: **Abiotic components** (non-living elements like air, water, land, and climate) and **Biotic components** (living organisms such as plants, animals, and microorganisms).

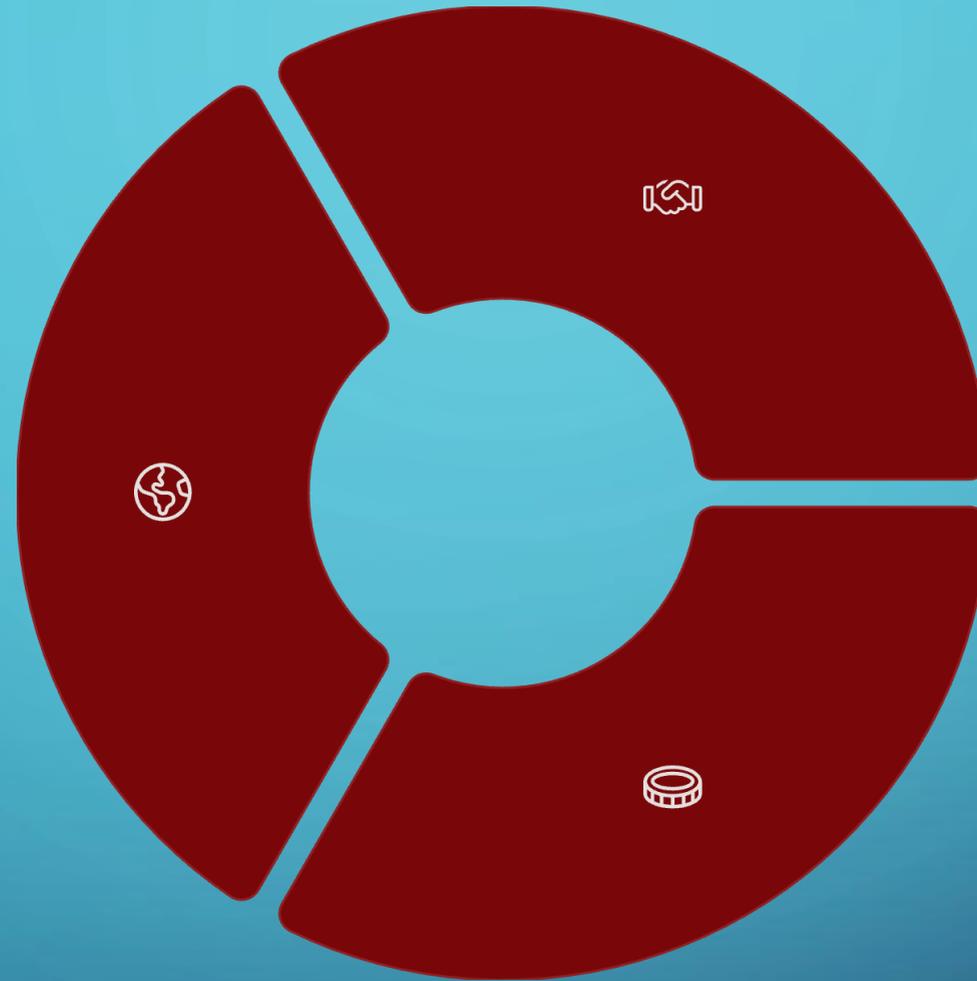
- **Atmosphere:** Composed of ~78% Nitrogen and ~21% Oxygen. Greenhouse gas emissions have increased by 50% since 1990, significantly altering its composition.
- **Hydrosphere:** Contains 97% saline water and only 3% freshwater, with 70% of freshwater globally used for agriculture.
- **Lithosphere:** Earth's crust, where human activity has degraded 33% of global land.



# Concept of Sustainability

## Environmental Protection

Preserving natural resources and ecosystems.



## Social Equity

Fairness, well-being, and community engagement.

## Economic Viability

Long-term economic growth and prosperity.

Sustainability means using resources in a way that meets our needs today without harming the ability of future generations to meet their needs. This idea was shared by the Brundtland Commission in 1987. Sustainability is based on three important areas: protecting the environment, treating people fairly, and keeping the economy strong. Together, these are called the "Triple Bottom Line."

One important part of sustainability is the **Circular Economy**. This means designing products and systems that reduce waste, reuse materials, and help nature recover. Companies support this by making their supply chains more eco-friendly, saving energy (like businesses using ISO 50001 save around 20% energy), and cutting down on waste (for example, the company Interface has reduced its waste by 90% since 1994). Today, about **85% of consumers** prefer to buy products that are environmentally friendly.

# Natural Resources: Overview & Non-Renewable Resources



**Natural Resources** are materials and substances found in nature that are used for economic gain, such as timber, oil, and various metals.

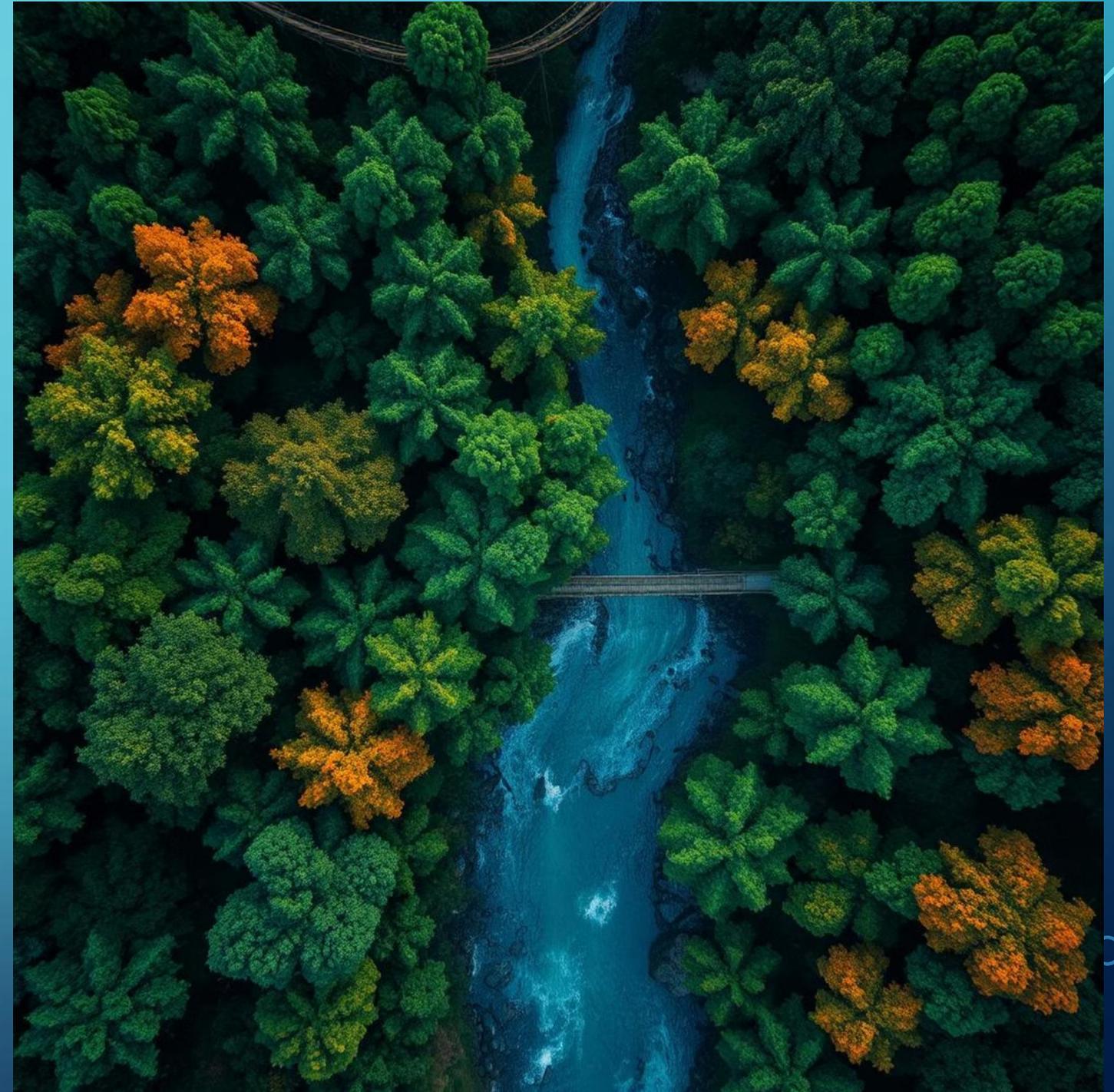
**Non-Renewable Resources** are formed over geological timescales and cannot be replenished on a human timescale.

# Renewable Resources I: Forest & Water

## A) Forest Resources

Forests are very important because they give us oxygen, absorb carbon dioxide, support many animals and plants, and provide wood. But forests are in danger. Every year, about 10 million hectares of forests are cut down, and illegal cutting of trees causes a loss of \$10 to \$23 billion.

For companies that use wood and paper, getting certified for sustainable forestry (like FSC) is very important. Also, carbon credit markets—worth \$2 billion in 2021—are giving businesses new ways to earn and grow.



# Renewable Resources II: Food, Energy & Land



## D) Food Resources

Agricultural output critical for consumption. Problems include soil degradation (33% of global land moderately degraded) and significant food waste (1/3 of food produced is lost/wasted). Businesses adopt sustainable agriculture (e.g., regenerative farming) and reduce supply chain waste (e.g., Tesco reduced food waste by 47% since 2016/17).



## E) Energy Resources

Includes solar, wind, hydro, and geothermal. Challenges involve reliance on fossil fuels and energy storage. Businesses are investing in renewables (corporate PPAs grew 24% in 2022) and improving energy efficiency through green building initiatives.



## F) Land Resources

Comprises arable land, urban areas, and natural habitats. Problems include rapid urbanization (68% global population urban by 2050), habitat destruction, and pollution. Businesses engage in land-use planning, brownfield redevelopment, and biodiversity offsetting projects.

# Role of an Individual in Conservation & Conclusion



## Reduce, Reuse, Recycle

Globally, we need 1.7 Earths to meet annual demand. Each ton of recycled paper saves 17 trees and 7,000 gallons of water.



## Conserve Energy

Switching to LED bulbs can reduce household electricity use by 75%. Unplug devices and optimize home heating/cooling.



## Water Conservation

A 5-minute shower uses 10-25 gallons; efficient fixtures save 20-30%. Fix leaks and practice mindful water use.



## Support Sustainable Businesses

Choose companies with strong ESG performance. Your purchasing power drives market change towards ethical practices.



## Advocate & Educate

Engage in policy change and foster environmental awareness within your community and networks.