Economic Growth and Environmental Sustainability For Viksit Bharath 2047

Main Syllabus: GS I – Climate Change, GS III – Indian Economy, Sustainable Development.

Why in the news?

Recently Budget 2025 was presented in the parliament with aim to become a developed nation by 2047 and achieve net zero emission by 2070.

Why does India need to balance economic growth and environmental sustainability to achieve Viksit Bharath 2047?

- **Preventing Economic Slowdowns** – Climate disasters (floods, droughts, heatwaves) threaten agriculture, manufacturing, and energy, potentially reducing India's GDP by 2.8% by 2030.
- Overall, extreme heat could cut 2.5-4.5% from GDP by 2030, climbing to a 10 % plunge by 2050.
- **Labour Productivity** - Labour productivity loss due to extreme heat could cost the economy $220 billion by 2030.
- **Reducing Fossil Fuel Dependence** – Coal (55-60% of power) raises costs, import reliance, and emissions.
- **Energy Security -** Over reliance on imported fossil fuels — 85 % of crude oil and 50% of natural gas are imported — could leave the economy exposed to price volatility, and geopolitical and supply chain shocks.
- Renewables (solar, wind, hydro, hydrogen) ensure cheaper, stable, and self-sufficient energy.
- Energy security puts India in a stronger position to weather global shocks and to stand more firmly on the geopolitical stage.
- **Job Creation & Green Economy** – Green growth contributes to fast growth and can create jobs — 50 million new jobs in India by 2070 — according to the World Economic Forum's Mission 2070 report.
- This translates to $1 trillion in additional economic value by 2030 and up to $15 trillion by 2070.
- **Trade Benefits** – High-carbon economies face trade restrictions such as EU's Carbon Tax).
- Carbon cost penalties imposed by importers of Indian goods could cost $150 billion annually in export revenues by 2040 if industries are not decarbonised.
- **Global Investments -** Green policies attract funding from banks (World Bank, IMF), green bonds, and private investors.

- **Public Health** – Carbon-intensive industries cause air pollution, water contamination, and health issues.
    - Clean energy reduces health costs and boosts productivity.
- **Meeting Climate Pledges** – India's net-zero by 2070 goal requires 50% emission reduction and 500 GW renewables by 2030, avoiding global pressure and trade risks.
- **Long-Term Competitiveness** – Investing in green hydrogen, EVs, and battery storage positions India as a global leader in future industries, ensuring sustainable economic growth.

What are the challenges persisting in India's efforts towards sustainable development?

- **High Dependence on Fossil Fuels -** 55-60% of power generation still depends on coal, with peak demand expected around 2035.
    - **Import Dependence**: Heavy reliance on oil & gas imports increases economic vulnerability.
- **Slow Renewable Energy Expansion -** Large-scale solar & wind projects face land acquisition and grid integration hurdles.
    - **Intermittency** - Renewable energy generation is weather-dependent, requiring better storage solutions.
- **Industrial Carbon Intensity -** Steel, cement, and manufacturing remain carbon-intensive due to outdated technologies.
    - **Cost of Transition** - Shifting to green technology requires heavy investments, discouraging MSMEs.
- **Challenges in Electric Mobility -** EV adoption is hindered by a inadequacy of charging stations & battery recycling.
    - **High Upfront Costs** - EVs remain expensive despite subsidies, limiting widespread adoption.
- **Agricultural Sustainability Issues -** Over-extraction of groundwater for irrigation threatens long-term agricultural productivity.
    - **Methane Emissions** - Livestock and mono scale paddy, wheat farming contributes significantly to greenhouse gases.
- **Financial & Investment Barriers -** Green projects require significant upfront investments, limiting participation.
    - **Limited Green Financing** - Private investors remain hesitant due to uncertain returns and policy risks.

What are the steps India needs to take to achieve the balance?

- **Clean Energy Transition -** Renewable energy can be expanded by scaling up solar, wind, hydro, nuclear (500 GW by 2030).
    - Example- National Solar Mission
- **Green Hydrogen Development** – Investments can be made in production & storage for industries & transport.
    - Example - National Green Hydrogen Mission
- **Decarbonize Industries -** Sustainable manufacturing can be adopted to make cleaner processes, carbon capture, circular economy.

- **Green Construction** – Low-carbon materials can be used for energy-efficient buildings.
- **Transport Electrification** – Electric Vehicles and charging infrastructure can be expanded in public and private transport.
    - Example - Faster Adoption and Manufacturing of Electric Vehicles (FAME-II)
- **Climate-Resilient Agriculture -** Sustainable farming can be promote with precision farming, resilient crops, organic fertilizers, water conservation.
    - Example - National Mission for Sustainable Agriculture
- **Green Investments -** Green bonds can be expanded to attract more investments to the green economy.
- Guarantees can be obtained from multilateral development banks to encourage private sector players in key risky sectors, such as green hydrogen and grid modernisation.

Reference

Indian Express | Where Viksit Bharat meets green growth