

Funding India's climate future, a trillion-dollar question

Prelims: General Studies Paper - 1
Current events of national and international importance.

Mains: General Studies - 3
Conservation, environmental pollution and degradation, environmental impact assessment

1. What is the scale of India's climate finance requirement?

- India needs **₹162.5 trillion (about \$2.5 trillion) by 2030** for its **Nationally Determined Contributions**.
- The **long-term net-zero target (2070)** will cost approximately **\$10.1 trillion**, nearly **three times India's current GDP**
- RBI estimates **additional 2.5% of GDP annually** needed till 2030.
- **Decarbonising four key sectors (steel, cement, power, road transport)-which contribute over 50% of emissions-requires:**
 - » **\$467 billion additional capex (2022–2030)**
 - » **Around \$54 billion annually (roughly 1.3% of GDP)**
- Developing countries need **\$5-6 trillion by 2030**.
- Hence, **India must mobilise most finance domestically**.

2. What progress has India made in climate finance?

- India issued **\$55.9 billion green & sustainability debt by 2024 (+186% since 2021)**.
- **Green debt = 83%**, focused on **energy & transport**.
- **₹477 billion sovereign green bonds** boosted **benchmarks and investor confidence**.
- Existing instruments:
 - » Green bonds, sovereign green bonds
 - » Sustainability-linked bonds
 - » Blended finance, transition finance, Infrastructure Investment Trusts

Blended finance is the strategic use of **public or concessional funds to de-risk** projects and **attract private co-investment** for sustainability and climate initiatives.

- Gap lies in:
 - » **Taxonomy, guarantees, liquidity, and incentives favouring green finance**

3. What role has RBI played in shaping climate finance?

- **2025 RBI framework** mandates:
 - » Integration of **climate risk in banking**
 - » **Green activities under PSL (Priority Sector Lending)**
 - » Recognition of **sovereign green bonds**
- **PSL norm: ₹4,000 per ₹10,000 crore lending (40%)** → strong policy lever.
- Proposed steps:
 - » Green bonds as **collateral with flexibility**
 - » **Lower capital for green, higher for brown lending**
- Other steps:
 - » **Climate Risk Information System**
 - » **Sustainable finance sandbox**
- Need: **Climate stress-testing framework (e.g., flood risks)**

4. What are the key gaps and policy priorities?

- **Climate Finance Taxonomy (Budget 2024–25)** is critical for:
 - » Defining “green”, preventing **greenwashing**, attracting investors
- **Blended finance underused**
- **State-level challenge:**
 - » Adaptation is state-driven but **states lack capacity & access**
 - » Examples: **Tamil Nadu, Kerala**
- **Key actions:**
 - » Finalise **taxonomy urgently**

- » RBI to **mandate green finance** (capital norms, PSL expansion, stress tests)
- » Create **State Climate Finance Facility (with NABARD, Centre, global funds)**
- » **Scale sovereign green bonds + include in SLR(Statutory Liquidity Ratio)**
- **Not lack of capital, but lack of institutional capacity to deploy at scale** is the core issue.

A national environmental survey whose time came

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1. Why is India Facing an Environmental Crisis?

- Human activities have accelerated environmental degradation, reflecting the Anthropocene era.
- A **Yale survey (2024–25) found widespread exposure to heat waves, droughts, pollution, and power outages.**
- Nearly half of monitored rivers show **unsafe levels of toxic heavy metals.**
- **Air pollution reduced average life expectancy by about 3 years** in 2022.
- About **29.7% of India's land is affected by desertification and degradation.**

2. What are the Gaps in India's Environmental Governance?

- The Ministry of Environment, Forest and Climate Change **receives only 0.07% of the Union Budget, indicating low priority.**
- **Environmental institutions are understaffed** and work with overlapping mandates.
- **Reports focus on schemes like the National Afforestation Programme and REDD+,** but provide limited data on deforestation and biodiversity loss.
- **Environmental information is fragmented** across multiple agencies.
- **Poor transparency in fund use, compliance,** and preparedness weakens policymaking.

- **National Afforestation Programme (NAP)** is a Government of India scheme launched in 2000 to restore degraded forests and increase forest cover through community participation.
- **REDD+ (Reducing Emissions from Deforestation and Forest Degradation)** is a UNFCCC mechanism formally adopted in 2010 to reduce forest-related emissions while promoting forest conservation, sustainable management, and enhancement of forest carbon stocks.

3. What is the Proposed Annual Environmental Survey of India (EnvSI)?

- EnvSI is **proposed as an annual assessment of India's environmental health, on the lines of the Economic Survey.**
- It **would integrate data from government agencies, research institutions, private organisations,** and field studies.
- The **survey would conduct independent audits and evaluate environmental performance.**
- It would **operate under a statutory mandate with autonomy and expert leadership.**
- It **would combine environmental indicators with livelihood and social impact assessments** for a holistic evaluation.

4. How Can EnvSI Benefit India?

- It **would help curb environmental degradation and strengthen climate resilience.**
- **Better monitoring would support climate commitments** and improve access to climate finance.
- It **would promote balanced development by integrating conservation** with economic growth.
- It **would protect tribal rights, traditional livelihoods, and vulnerable communities.**
- By **making environmental losses measurable,** it would improve public awareness and policymaking.

Evolving public health strategies to address under and over nutrition

Prelims: General Studies Paper - 1
Economic and Social Development-Sustainable Development, Poverty, Inclusion, Demographics, Social Sector Initiatives, etc.

Mains: General Studies - 2
Issues relating to development and management of Social Sector/ Services relating to Health, Education, Human Resources.

1. Double Burden of Malnutrition in India

- India is facing a **double burden of malnutrition**, where both **undernutrition** and **overnutrition (overweight/obesity)** coexist.
- According to the **WHO**, malnutrition includes:
 - » **Undernutrition** (stunting, wasting, underweight)
 - » **Micronutrient deficiencies**
 - » **Overweight and obesity**
 - » Diet-related **non-communicable diseases (NCDs)**.
- Findings from **NFHS-6** and the **Vellore study** confirm this growing challenge.

2. Key Findings of the Vellore Study

- Conducted by **CMC Vellore** and **ARUMDA-TIFR** among **251 children** from urban slums.
- Followed children from **birth to 9 years**.
- Around **45%** of children were **stunted at age 2**.
- By **age 7**:
 - » **26.3%** were **thin**
 - » **5.2%** were **overweight/obese**
- By **age 9**:
 - » **21.6%** were **underweight**
 - » **14.6%** were **overweight/obese**
- The study found that problems of **thinness and obesity begin as early as 7-9 years of age**.

3. Causes and Health Implications

- Mother's Body Mass Index (BMI)** was found to be an important predictor of child nutrition outcomes.
- 30.7% of Indian women (15-49 years)** were overweight or obese (National Family Health Survey (NFHS - 6), indicating a **trans-generational nutrition burden**.
- Easy access to:
 - » **Packaged foods**
 - » **Sugary drinks**
 - » **Deep-fried snacks**

- » contributes to childhood obesity.
- Poor access to **fruits, vegetables and protein-rich foods** worsens nutrition.
- Health risks:
 - » Persistent undernutrition can lead to **stunting, poor insulin secretion, and lean diabetes (Type 5 diabetes)**.
 - » Overnutrition increases the risk of **diabetes, hypertension, and cardiovascular diseases**.

4. Policy Implications and Way Forward

- Nutrition policies should address **both undernutrition and overnutrition**, not just hunger and stunting.
- Continuous monitoring of children's growth is needed **beyond the first 1,000 days** of life.
- Children's diets should be **tailored according to nutritional needs**, rather than a one-size-fits-all approach.
- Greater emphasis on:
 - » **Healthy diets**
 - » **Physical activity**
 - » **Nutrition education**
- Programmes such as **Integrated Child Development Services (ICDS), school meals, and the Public Distribution System (PDS)** should be redesigned to tackle:
 - » **Calorie and micronutrient deficiencies**
 - » Rising consumption of **ultra-processed, high-sugar and high-fat foods**.

Is the war in Ukraine escalating?

Prelims: General Studies Paper - 1
Current events of national and international importance

Mains: General Studies - 2
Effect of policies and politics of developed and developing countries on India's interests, Indian diaspora.

1. Escalation of the Russia-Ukraine War

- The war has entered a **more dangerous and volatile phase** despite global attention shifting elsewhere.
- Since **May 2026**, both Russia and Ukraine have intensified **long-range drone and missile attacks**.
- Ukraine has targeted:
 - » Russian **oil refineries** (Ilsky, Novoshakhtinsk)
 - » **Military logistics hubs**

- » Deep targets **inside Russian territory**.
- Russia has responded with large-scale strikes on Ukrainian cities, damaging **civilian infrastructure**.
- The shift to long-range warfare has increased **civilian casualties** and **collateral damage**.

2. Rising Risks of Wider Conflict

- A drone strike on a building in the Romanian city of **Galați** raised concerns about a possible violation of **NATO airspace**.
- A drone attack near the **Zaporizhzhia Nuclear Power Plant** increased fears of a **nuclear accident**.
- Russia has **warned that its response could extend beyond Ukraine**.
- There is growing concern that:
 - » A **miscalculation**
 - » An **accidental strike**
 - » Or **attacks on NATO territory**
- could trigger a broader regional war.

3. Stalled Peace Talks and Deadlock

- A **U.S.-led peace talks** in Geneva and the UAE failed to achieve a breakthrough.
- Both sides maintain **maximalist positions**:
 - » **Russia** demands:
 - Recognition of its control over **Crimea, Donetsk, and Luhansk**.
 - **Strict limit on the size and capability of the Ukrainian armed forces**
 - A guarantee that **NATO** will never deploy troops in Ukraine.
 - » **Ukraine** demands:
 - **Strong security guarantees**.
 - **No territorial concessions to Russia**.
- **Europe is considering communication channels with Russia**, but Moscow remains distrustful of European mediators.
- As a result, the conflict remains at a **military and diplomatic stalemate**.

4. Pressure on Putin and Future Scenarios

- The prolonged war is placing **pressure on both economies**:
 - » Ukraine remains dependent on **Western aid**.
 - » Russia faces a large **budget deficit, inflation, high interest rates, and labour shortages**.
- Ukrainian drones can now reach areas inhabited by nearly **70% of Russia's population**, forcing Russia to

strengthen homeland air defences.

- Reports suggest growing:
 - » **Economic strain**
 - » **Public dissatisfaction**
- Russia has **warned that European facilities helping Ukraine produce drones** and missiles could become **legitimate military targets**.
- Key future possibilities:
 - » **Escalation into a broader NATO-Russia conflict** if Article 5 is invoked.
 - » **Prolonged conflict**
 - » A **negotiated settlement** if both sides acknowledge the battlefield stalemate.

KEYWORDS

Great Nicobar Island Development Project

- The Great Nicobar Island Development Project is a **mega infrastructure initiative worth about ₹72,000–81,000 crore, conceived by NITI Aayog and being implemented by Andaman and Nicobar Islands Integrated Development Corporation Limited (ANIIDCO)**.
- The project **covers around 16,610 hectares in the southern part of Great Nicobar Island** near Indira Point, India's southernmost tip.
- It **aims to leverage the island's strategic location near the Malacca Strait**, one of the world's busiest shipping corridors.
- **Major components include an International Container Transshipment Terminal at Galathea Bay, a greenfield international airport, modern townships, and a gas-solar hybrid power plant.**
- The **project seeks to transform Great Nicobar into a strategic economic, logistics, tourism, and defence hub** under India's broader Indo-Pacific vision.

El Niño

- El Niño is the **warm phase of the El Niño–Southern Oscillation (ENSO), marked by abnormal warming of surface waters in the central and eastern tropical Pacific Ocean**.
- During El Niño, **weakened or reversed trade winds allow warm water to shift eastward, reducing the upwelling of nutrient-rich cold water along the South American coast**.
- This **disrupts marine ecosystems by lowering phytoplankton production, affecting fish**

populations and the wider ocean food chain.

- The **warming of the Pacific alters global atmospheric circulation, leading to droughts in Australia and Indonesia** and increased rainfall and flooding in parts of the Americas.
- In India, **El Niño is often associated with weaker southwest monsoon rainfall, higher temperatures, drought-like conditions**, reduced agricultural output, and stress on water resources

Indus Water Treaty

- The treaty was signed on **September 19, 1960**, by **Jawaharlal Nehru** and **Ayub Khan**, with the **World Bank** acting as broker and signatory to specific provisions.
- It allocates the **Eastern Rivers (Ravi, Beas, Sutlej)** to India for **unrestricted use**, while Pakistan receives the **Western Rivers (Indus, Jhelum, Chenab)**, giving it **around 80% of the total basin water**.
- India retains **limited agricultural use** and **unrestricted non-consumptive use**, allowing **run-of-the-river hydropower projects** such as **Kishanganga and Ratle**, subject to **strict design criteria**.
- **Permanent Indus Commission (PIC)**: The treaty establishes a **bilateral body** with commissioners from both countries that must **meet annually**, exchange **hydrological data**, and conduct **inspections**.
- **Three-Tier Dispute Mechanism**: Disagreements are resolved progressively with **"questions" handled by the PIC**, **"differences" referred to a World Bank-appointed Neutral Expert**, and **"disputes" taken to a Court of Arbitration**.

Small Modular Reactors (SMRs)

- **Small Modular Reactors (SMRs)** are **advanced nuclear reactors** with a **power capacity of up to 300 MW per module**, making them **much smaller than conventional nuclear plants**.
- Their **modular design** allows **factory assembly and transport to site**, reducing **construction time, capital costs, and land footprint**.

- They are being promoted in energy strategies alongside **closed-loop reactors developed by Bhabha Atomic Research Centre (BARC) to scale up clean power generation**.
- They provide **stable, continuous, and affordable base-load power**, essential for **energy-intensive sectors** like **artificial intelligence, data centres, and cloud computing**.
- SMRs have **enhanced passive safety features**, using **natural forces like gravity and convection** to ensure **safe shutdown without external power or human intervention**.

National Family Health Survey (NFHS)

- The **National Family Health Survey (NFHS)** is a **large-scale, nationally representative, multi-round survey** conducted across households in India.
- Since its inception in **1992-93**, **five rounds** of the survey have been completed.
- The survey generates **national and State-level data** on key **health and demographic indicators**, including **fertility, infant and child mortality, family planning, maternal and child health, reproductive health, nutrition, and anaemia**.
- It also provides information on the **utilisation and quality of health and family welfare services** across the country.
- Each round of the **NFHS** aims to:
 - » Provide **reliable data on health and family welfare** to support the **Ministry of Health and Family Welfare (MoHFW)** and other agencies in **policy formulation and programme implementation**.
 - » Generate information on **emerging health and family welfare concerns** in the country.
- The **Ministry of Health and Family Welfare (MoHFW), Government of India**, has designated the **International Institute for Population Sciences (IIPS), Mumbai**, as the **nodal agency** for the **National Family Health Survey (NFHS)**.
 - » The **IIPS** is responsible for the **coordination, technical guidance, and implementation** of the survey.

Places in News

Nabatieh

- Nabatieh is a **major city in southern Lebanon** and serves as the administrative center of the Nabatieh Governorate.
- It is **located near the Israel–Lebanon border and overlooks the strategically important Litani River** region.
- The city **lies in the historic region of Jabal Amel** and has long been an important commercial and cultural center in southern Lebanon.
- **Beaufort Castle (Qalaat al-Shaqif) is a 12th-century Crusader-era fortress overlooking the city of Nabatieh** and the Litani River, making it a site of immense historical and strategic significance in southern Lebanon.
- Nabatieh has **recently been in the news due to military operations and clashes linked to the Israel–Hezbollah conflict.**

