



## **DAILY CURRENT AFFAIRS 18-02-2026**

### **Mapping Perspective**

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## **Pugad Island**

**Syllabus: Prelims Bits – Mapping.**

### **Context:**

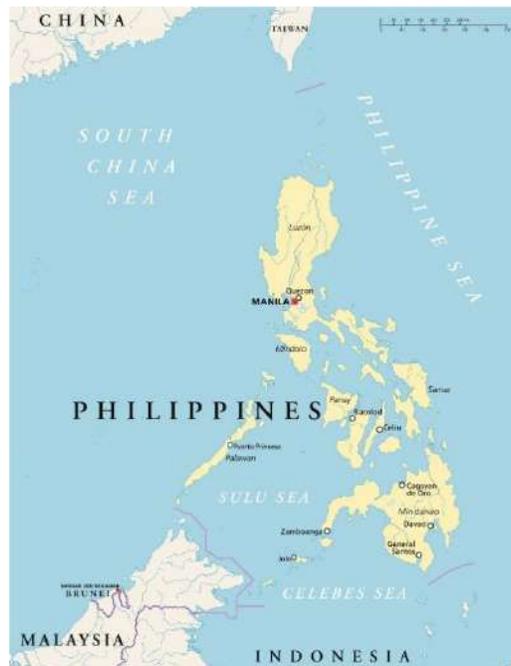
The Philippine Island of Pugad is facing severe land subsidence (up to 11 cm/year) and rising sea levels, putting its 2,500 residents at risk of displacement.

### **What it is**

- A **7-hectare low-lying island** in **Manila Bay** under **Hagonoy municipality**, Bulacan province.
- Population: ~2,500 residents.
- Economy: Primarily **fishing and aquaculture**.

### **Geographical Setting**

- Located at the **mouth of the Angat–Pampanga River Delta**.
- Historically surrounded by **mangroves and marshlands**, which acted as natural buffers.



### **Major Issues**

- **Land Subsidence:**
  - Sinking at ~**11 cm/year** (among fastest globally).
  - Driven mainly by **excessive groundwater extraction**.

- **Sea-Level Rise:**
  - Philippines' sea level rising at **~3× global average** (global ≈ 3.6 mm/year).
  - May accelerate to **13 mm/year** in coming decades.
- **Climate Hazards:**
  - Frequent **typhoons, flooding, and storm surges**.
  - Increased risk of **permanent inundation and displacement**.
- **Mangrove Loss:**
  - Conversion to fishponds reduced coastal protection, intensifying vulnerability.

## About Philippines

### Key Facts

- **Archipelago** of 7,000+ islands in the western Pacific.
- Capital: **Manila** (Quezon City most populous).
- Coastline: ~36,290 km → highly climate-vulnerable.
- ~50 volcanoes; highest peak: **Mount Apo (2,954 m)**.
- Tropical climate; prone to **typhoons, earthquakes, and volcanic eruptions**.

## Piton de la Fournaise Volcano

### Syllabus: GS-1: Physical Geography – Volcanoes.

#### Context:

- Piton de la Fournaise erupted **second time in 2026**.
- Among the **most active volcanoes globally**.

#### About Piton de la Fournaise

- **Location:** East-southeastern part of **La Réunion**, Western Indian Ocean (French overseas territory).
- **Type:** Massive **basaltic shield volcano**.
- Built on flank of older volcano **Piton des Neiges**.
- **Age:** ~500,000 years.
- **Eruption Style:**
  - Frequent but **short-lived eruptions**.

- Begins with **lava fountains** → extensive **lava flows**.
- **UNESCO Status:** Part of World Heritage (since 2010).

### Shield Volcano – Key Facts (Prelims Focus)

- **Largest volcano type** on Earth.
- Broad with **gentle slopes** (not steep conical peaks).
- Lava type: **Basalt (low viscosity, highly fluid)**.
- Lava spreads over **large distances** → wide base.
- Formed by **repeated intermittent eruptions** over long periods.
- Classic example: **Hawaiian Islands** shield volcanoes.

## Exposome

### Syllabus: GS-3: General Science – Health Science.

#### Context:

Scientists launching a **global initiative** to map the “**Human Exposome**”.

Objective: Identify **lifetime environmental & chemical exposures** responsible for majority of **non-communicable diseases (NCDs)**.

Complements the **Human Genome Project** by focusing on *environmental determinants* of health.

#### About Exposome

- **Definition:** Totality of all exposures of an individual **from conception to death** and their relation to health.
- As per **International Human Exposome Network (IHEN)**:

“Integrated compilation of all physical, chemical, biological and psychosocial factors, and their interactions.”

#### Components

##### Internal

- Metabolism, hormones, microbiome, inflammation.

##### External

- Physical (radiation, noise)
- Chemical (pollution, pesticides, heavy metals)

- Biological (pathogens)
- Social/behavioral (diet, stress, lifestyle)

### **Exposomics**

- **Exposomics** = Scientific study of the exposome.
- Integrates biology, epidemiology, environmental science, and data analytics.

### **Methods of Exposure Assessment**

#### **A. Internal Exposure Assessment**

Relies on advanced “-omics” technologies:

- Genomics
- Transcriptomics
- Proteomics
- Metabonomics
- Lipidomics

#### **Common Features:**

- Biomarkers to track:
  - Exposure levels
  - Disease progression
  - Susceptibility factors
- High-throughput technologies generating large datasets
- Use of AI and data mining to detect associations between:
  - Exposure
  - Genetics
  - Disease outcomes

#### **B. External Exposure Assessment**

Measures environmental stressors directly:

- Direct-reading instruments (e.g., air quality monitors)
- Laboratory-based chemical analysis
- Surveys & geospatial data mapping

### **Why Mapping the Exposome Matters**

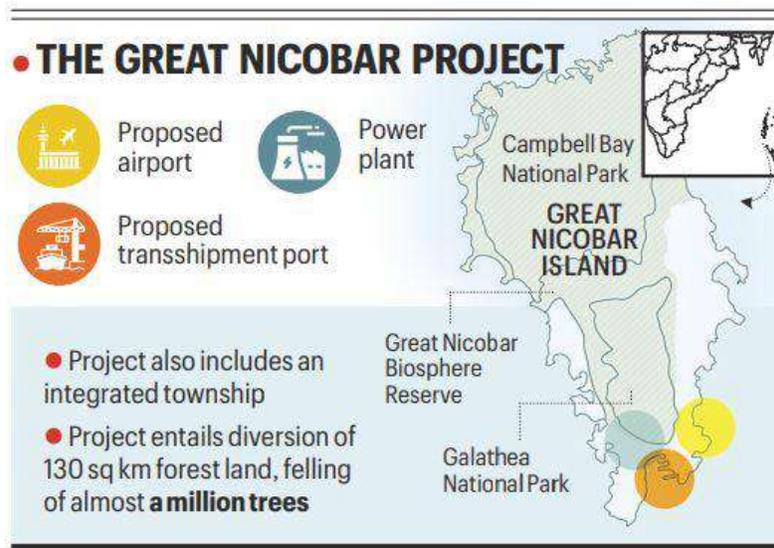
- Most chronic diseases (cancer, diabetes, cardiovascular disorders) are driven largely by environmental and lifestyle factors rather than genetics alone.
- Complements the Human Genome Project by focusing on “**environment × gene**” **interactions**.
- Helps in:
  - Precision public health
  - Early disease prevention
  - Policy interventions (pollution control, chemical regulation)

## **NGT Clears Great Nicobar Project**

**Syllabus: GS-3: Environmental & Development.**

### **Context:**

In February 2026, a six-member special bench of the National Green Tribunal (NGT) cleared the ₹81,000-crore Great Nicobar mega infrastructure project, citing its "strategic importance" and the presence of "adequate safeguards."



### **Overview of the Great Nicobar Project**

- **Location:** Great Nicobar Island (the southernmost and largest of the Nicobar Islands).
- **Scale:** Spread over 166 sq. km (diverting 130 sq. km of forest land).
- **Key Components:**

1. **International Transshipment Terminal (ICTT):** To tap into the global shipping route.
2. **Greenfield Strategic Airport:** For both civil and military use.
3. **Integrated Township:** To support the growing population and economic activity.
4. **Power Plant:** A 450-MVA gas and solar-based power plant.

### The NGT Ruling: Key Highlights

- **Strategic Importance vs. Ecology:** The NGT emphasized a "**balanced approach**," ruling that the project's strategic significance (national security and economic potential) outweighs the grounds for blocking it, provided environmental safeguards are met.
- **High-Powered Committee (HPC) Findings:** The tribunal relied on an HPC report (headed by the former Environment Secretary) which concluded that the project does not fall within "prohibited" areas of the **Island Coastal Regulation Zone (ICRZ)**.
- **No Interference:** The NGT found no "good ground" to interfere with the Environmental Clearance (EC) granted in 2022.

### Environmental & Social Concerns (Critical Analysis)

- **Deforestation:** Felling of nearly **one million trees** in a primary tropical rainforest.
- **Biodiversity Loss:** Potential impact on endemic species like the **Leatherback Sea Turtle, Nicobar Megapode, Saltwater Crocodile, Robber Crab, and Nicobar Macaque**.
- **Coral Reefs:** Concerns over the destruction of coral colonies. (Note: NGT accepted the ZSI claim that no major reefs exist in the direct footprint and ordered translocation of scattered corals).
- **Tribal Rights:** The **Nicobarese and Shompen** tribes face potential dispossession of ancestral lands and disruption of their traditional way of life.
- **Seismic Vulnerability:** The islands are in a high-seismic zone (Zone V), making large-scale infrastructure risky.

### Safeguards Mandated by NGT/EC

- **Shoreline Protection:** Construction must not cause erosion or loss of sandy beaches (critical for turtle nesting).
- **Species-Specific Plans:** Conservation funds and plans for the Megapode and Leatherback turtles.

- **Coral Regeneration:** Use of proven scientific methods for coral translocation and regeneration.
- **Compensatory Afforestation:** Proposed in Haryana (far from the site), which remains a point of debate among ecologists.

## **Cities of Debt**

### **Syllabus: GS-2: Urban Governance and Funding**

#### **Context:**

These notes are based on *The Hindu* editorial "**Cities of Debt: On the Urban Challenge Fund**" (published February 17, 2026), focusing on the Union Cabinet's approval of the ₹1 lakh crore Urban Challenge Fund (UCF).

#### **Introduction: The Paradigm Shift**

The Union Cabinet recently approved the **Urban Challenge Fund (UCF)**, a ₹1 lakh crore Centrally Sponsored Scheme. It marks a fundamental shift from **grant-based financing** to a "**market-linked, reform-driven, and outcome-oriented**" model for urban development.

#### **Key Features of the UCF**

- **Funding Ratio:** The Centre covers **25%** of the project cost.
- **Borrowing Mandate:** Cities must raise at least **50%** of the project cost from the market (Bonds, Bank Loans, or Public-Private Partnerships - PPP).
- **Competitive Mode:** Funds are not entitlements; cities must "compete" and prove project bankability and reform commitment to access support.
- **Timeframe:** Operational from FY 2025-26 to 2030-31.
- **Target Verticals:**
  - *Creative Redevelopment:* Revitalizing city cores/CBDs.
  - *Cities as Growth Hubs:* Developing greenfield/semi-greenfield economic anchors.
  - *Water & Sanitation:* Moving toward service saturation and circularity.

#### **Credit Repayment Guarantee Scheme (CRGS)**

- A dedicated **₹5,000 crore corpus** to help Tier-2, Tier-3, and smaller cities (population < 1 lakh) and those in Hilly/NE states.
- Provides a guarantee for first-time loans (up to 70% or ₹7 crore) to enhance their credit profiles.

### Critical Concerns

- **Fiscal Decentralization Gaps:** Many Urban Local Bodies (ULBs) lack the administrative capacity to manage debt. They are often crippled by a lack of devolved fiscal powers from state governments.
- **Administrative Preparedness:** Implementation details (eligibility, application process) remain "under examination," which may lead to politically motivated spending rather than merit-based allocation.
- **The "Marketization" of Public Services:** The editorial draws a parallel with earlier shifts in sectors like CSIR (Research) and Higher Education (HEFA), where shifting to debt-based models led to "debt-laden entities" and increased costs for the public (e.g., fee hikes).
- **Sidelining the Vulnerable:** Prioritizing "monetizable assets" and "bankability" may shift focus away from essential non-revenue services, such as formalizing slums or providing low-income housing protections.
- **The "Bankability" Trap:** Without fixing fundamental issues like messy land records and violations of city master plans, forcing cities to "earn" their growth might widen the gap between rich and poor cities.

### Challenges in Indian Urban Governance

- **Revenue Issues:** Property tax collection in India is only ~0.15% of GDP (vs. much higher in developed economies).
- **Cost Recovery:** Service charges currently cover only 20-50% of operating costs.
- **Stagnant Finance:** Municipal finance has remained at roughly 1% of GDP for two decades.

### Conclusion & Way Forward

While market finance is a legitimate tool to bridge the massive infrastructure gap, it cannot be a substitute for minimum service guarantees.

- **Recommendations:** \* Strengthen **Municipal Capacity** (accounting, planning, and audits).
  - Fix the **Political Economy** of local taxes.
  - Ensure that market-linked growth does not come at the cost of **Social Inclusivity**.