

## Today's Prelims Topics

### Dravyaratnākara Nighaṇṭu and Dravyanamākara Nighaṇṭu

#### Context

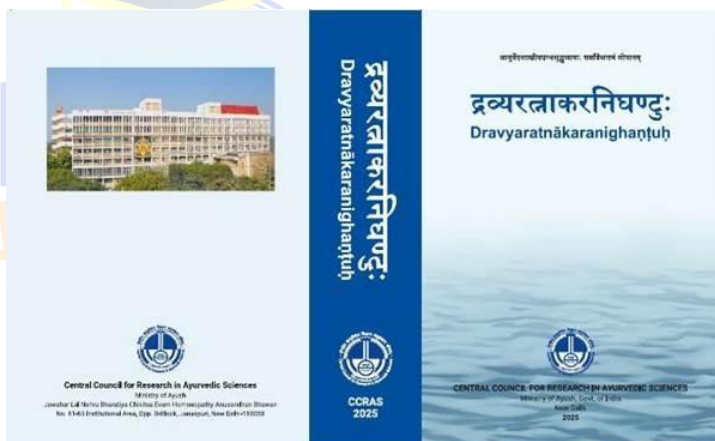
The Central Council for Research in Ayurvedic Sciences (CCRAS) under the Ministry of AYUSH has revived two Ayurvedic manuscripts: Dravyaratnākara Nighaṇṭu and Dravyanamākara Nighaṇṭu.

#### What are Ayurvedic Manuscripts?

- Ancient texts preserve Ayurvedic knowledge on medicinal plants, formulations, and pharmacological properties.
- **Nighaṇṭus** are traditional lexicons **describes the attributes of substances** from plant, mineral, and animal sources.
  - **Nighaṇṭus** resolve confusion caused by **multiple names** (synonyms) or **same names used for different substances** (homonyms) in Ayurveda.
  - E.g.,
    - **Synonyms:** Ginger is called **Śuṇṭhī, Nāgara, Ardraka** (depending on form — dry or fresh).
    - **Homonyms:** **Rajani** can refer to **Curcuma longa** (Turmeric) in one context and **Piper longum** in another, if not clarified.

#### Dravyaratnākara Nighaṇṭu

- **Author:** Mudgala Paṇḍita | **Period:** 1480 AD
- Contains 18 chapters on drug synonyms, actions, and formulations.
- Cites **Dhanvantari** and **Raja Nighaṇṭus**; introduces new therapeutic substances.
- Widely used in **Maharashtra till the 19th century**.
- **Revived by:** Dr. Sadanand D. Kamat.



#### Dravyanamākara Nighaṇṭu

- **Attributed to:** Bhisma Vaidya | **Period:** Post-Dhanvantari (undated)
- Supplement to **Dhanvantari Nighaṇṭu** with 182 verses.
- Focuses on **homonyms** in drug names, aiding Rasashastra and Bhaishajya Kalpana.
- **Edited by:** Dr. Sadanand D. Kamat.

Source: [PIB](#)

## Arsenal under Indian Military

### Context

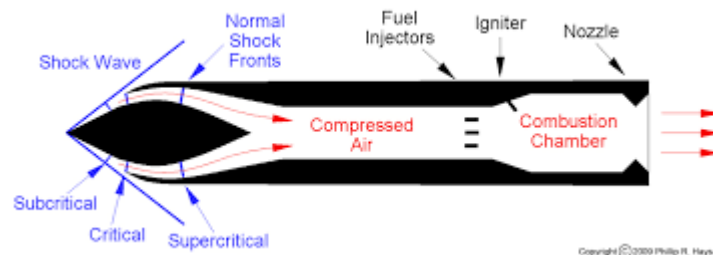
Over the years, the Indian military has modernized its arsenal with precision-guided long-range weapons, drones, and loitering munitions to enhance combat accuracy and operational reach.

### Key Indian Military Arsenal

- **HAMMER (Highly Agile and Manoeuvrable Munition Extended Range):**
  - **Type:** Air-to-ground precision-guided munition
  - **Range:** Up to 70 km
  - **Platform:** Rafale aircraft
  - **Features:** Autonomous, jamming-resistant, usable from low altitude
  - **Use:** Tactical strikes on a variety of targets
  - **Origin:** France (Safran Group)
- **SCALP (Storm Shadow in UK):**
  - **Type:** Long-range air-launched cruise missile
  - **Range:** ~450 km
  - **Platform:** Rafale aircraft
  - **Features:** Stealth, deep strike capability, bunker-penetrating
  - **Navigation:** INS + GPS + Terrain referencing
  - **Origin:** Europe (MBDA)
- **METEOR**
  - **Type:** Beyond Visual Range Air-to-Air Missile (BVRAAM)
  - **Range:** Over 100 km (classified)
  - **Platform:** Rafale and other fighter jets
  - **Features:** Ramjet propulsion, largest 'No Escape Zone', electronic warfare resistance
  - **Origin:** Europe (MBDA)
- **BRAHMOS**
  - **Type:** Supersonic (faster than sound) cruise missile (land, sea, air versions)
  - **Speed:** Mach 2.8–3
  - **Range:** Initially 290 km, now extended up to 450–500 km in newer versions
  - **Features:** Fire-and-forget, low terminal altitude (10m), precision targeting
  - **Origin:** India-Russia Joint Venture (DRDO + NPO Mashinostroyeniya)
- **LOITERING MUNITIONS**
  - **Type:** Kamikaze drones
  - **Use:** Surveillance, target identification, and precision strike
  - **Features:** Can hover over a target zone, strike autonomously or remotely
  - **Recent Procurements:** Switch (IdeaForge), Nagastra, and imports from Israel

### Did You Know?

- **Cruise Missile:** A **cruise missile** is a guided missile used to deliver a warhead over long distances with **high accuracy**.
  - It flies at **low altitudes**, often almost above terrain to avoid radar detection.
- **Beyond Visual Range Air-to-Air Missile (BVRAAM):** A BVRAAM is designed to destroy enemy aircraft at **distances beyond the pilot's visual range** (usually over 30-40 km, can go over 100 km).
  - It uses **radar guidance** to track and hit moving targets.
- **Kamikaze Drones (Loitering Munitions):** These are **drones that loiter (wait) over a target area** and strike once a target is identified.
  - Act like **"flying bombs"**, destroying themselves upon impact.
- **Ramjets:** Ramjets are simple air-breathing jet engines with no moving parts, relying on high forward speed to compress incoming air for combustion and thrust.



Source: [Indian Express: Precision guided long range weapons in Indian Military Arsenal](#)

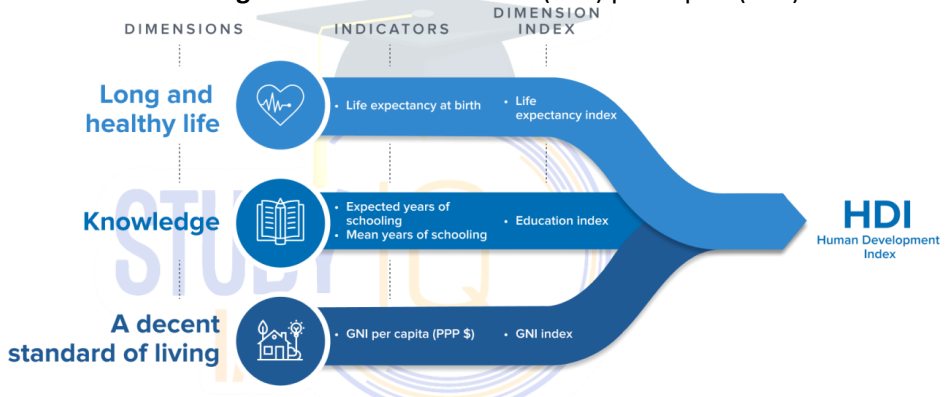


## Human Development Index

### Context

Human Development Report (HDR) 2025, titled "A Matter of Choice: People and Possibilities in the Age of AI", released by the **United Nations Development Programme (UNDP)**.

### About Human Development Index (HDI)

Aspect	Details
Full Form	Human Development Index
Introduced by	United Nations Development Programme (UNDP)
First Published	1990
Purpose	To measure and rank countries' social and economic development
Components	<p>1. <b>Health:</b> Life expectancy at birth.  2. <b>Education:</b> Mean years of schooling and expected years of schooling  3. <b>Standard of Living:</b> Gross National Income (GNI) per capita (PPP)</p> 

### Key Highlights of Report 2025

#### Global HDI Rankings

### LEADERBOARD

HDI ranking and value (2023)

Rank	Country	HDI value
1	Iceland	0.972
2	Norway	0.970
2	Switzerland	0.970
4	Denmark	0.962
5	Germany	0.959
5	Sweden	0.959
7	Australia	0.958
8	Hong Kong, China (SAR)	0.955
8	Netherlands	0.955
17	United States	0.938
130	India	0.685

HDI: Human Development Index  
Source: UNDP Human Development Report 2025

- **Top Rank: Iceland topped** the HDI list with a value of **0.972**, followed by **Norway** and **Switzerland**.

- **Bottom Rank: South Sudan** was placed last (193rd) with an HDI value of **0.388**.

#### India's HDI Performance

- **HDI Value & Rank:** India improved its HDI from **0.676 (133rd in 2022)** to **0.685 (130th in 2023)**, remaining in the **medium human development** category.
- **Long-term Progress:** Since **1990**, India's HDI has increased by over **53%**, growing **faster** than the global and South Asian averages.

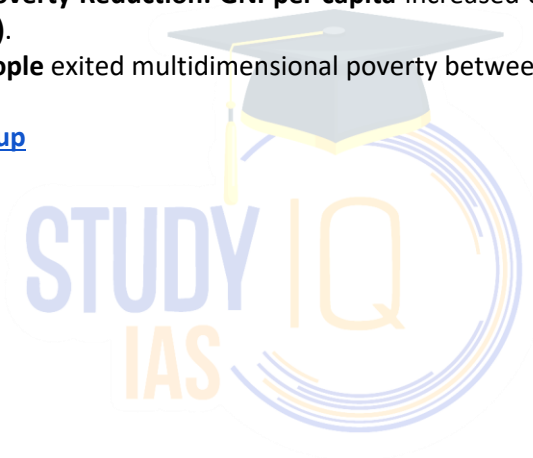
#### India's Position Among Neighbours

- **Above India:** **China (75th)**, **Sri Lanka (78th)**, and **Bhutan (127th)** ranked higher than India.
- **At Par with India:** **Bangladesh** shared the same rank as India at **130th**.
- **Below India:** **Nepal (145th)**, **Myanmar (149th)**, and **Pakistan (168th)** were ranked lower.

#### Highlights of India's HDI Progress

- **Life Expectancy:** Increased from **58.6 years (1990)** to **72 years (2023)** — the highest since HDI tracking began.
  - Contributing programs: *Ayushman Bharat, Janani Suraksha Yojana, Poshan Abhiyaan.*
- **Education Improvements:** Average years of schooling rose from **8.2 years (1990)** to **13 years (2023)**.
  - Key policies: *Right to Education Act, Samagra Shiksha Abhiyan, National Education Policy 2020.*
- **Economic Growth & Poverty Reduction:** **GNI per capita** increased over four times: from **\$2,167 (1990)** to **\$9,046 (2023)**.
  - **135 million people** exited multidimensional poverty between **2015-16** and **2019-21**.

Source: [The Hindu: A step up](#)



## How Climate Change Disrupting Human Gut

### Context

A Lancet Planetary Health review suggests that climate-induced food scarcity and malnutrition might alter gut bacteria, potentially worsening climate change's impact on human health.

### How Climate Change Affects Human Gut Health

- **Nutritional Disruption:**
  - **Reduced crop quality:** Climate change leads to higher CO<sub>2</sub> levels and extreme weather events, which reduce essential nutrients (iron, zinc, protein) in staple crops like wheat and rice.
  - **Food insecurity:** Reduced food availability in low- and middle-income countries (LMICs) leads to undernourishment and poor diet diversity — key drivers of reduced microbial diversity in the gut.
- **Environmental Stressors:**
  - **Higher temperatures** increase food and waterborne diseases (e.g., cholera, E. coli), which can damage gut health.
  - **Soil and water microbiota changes** alter the microbes humans are exposed to, affecting gut colonization especially in infants and children.
- **Increased Incidence of Infections:** Warmer environments facilitate the growth of pathogens, increasing exposure to harmful microbes that disrupt the normal gut microbiota.
- **Vulnerable Populations:** Indigenous groups and LMICs are disproportionately affected because of their greater reliance on local food sources and exposure to harsher climate conditions.

### Effects of Gut Dysbiosis Caused by Climate Stress

- Weakened **immunity**
- Higher risk of **metabolic disorders** (e.g., diabetes, obesity)
- **Inflammatory bowel diseases (IBD)**
- Impaired **neurological health** (via the gut-brain axis)
- Poor **growth and development** in children due to malabsorption of nutrients.

Source: [The Hindu: Climate change is disrupting the human gut in a new path to illness](#)

## News in Short

### Haenyeo

**News?** Researchers confirmed that Haenyeo are genetically distinct from mainland Koreans.

- **Who are they?**
  - **About:** Group of female free divers, diving **up to 10 meters underwater without breathing equipment** to collect shellfish, seaweed, and other marine life.
  - **Location:** Jeju Island, South Korea.
  - **UNESCO Recognition:** In **2016**, the Haenyeo culture was inscribed in UNESCO's **Intangible Cultural Heritage** list.



### Operation Abhyaas

**News?** Nationwide mega civil defence mock drill 'Operation Abhyaas' was conducted.

- **Why the Mock Drill?** To enhance emergency civil preparedness following Operation Sindoor.
- **What Does It Include?** Activating air raid sirens, testing blackout measures, establishing communication with the Indian Air Force, and evaluating the early camouflaging of critical infrastructure.

### Similar Instances of Civil Preparedness

- **India's Previous Instances:** 1962 Sino-Indian War, 1965 Indo-Pakistan War, 1971 Indo-Pakistan War.
- **Global Preparedness Against War-like Situations:**
  - **Civil Defence Infrastructure (Israel):**
    - **Mandatory bomb shelters** in every home.
    - **Public training** to respond swiftly to air raid sirens.
    - Promotes **readiness culture** among civilians.
  - **Digital Continuity of Services (Ukraine):** **Digitalisation of essential services** (banking, education, healthcare).
  - **Blackouts and Mass Safety Campaigns (Britain, WWII):** Enforced **complete blackouts** using curtains and cardboard to hide from bombers.
    - Distributed over **44 million gas masks** to civilians (1938–1939).



## Global Space Exploration Programme

**News?** 12th edition of the Global Space Exploration Conference (GLEX 2025) hosted in **New Delhi, India (1st time)**.

- **Theme:** Reaching New Worlds: A Space Exploration Renaissance.
- **Organised by:** Jointly by International Astronautical Federation (IAF) and the Indian Space Research Organisation (ISRO).
- **Note:** NASA (American Space Agency), has **not sent** delegates to this meet.
  - **Reason:** lack of funds to support the NASA scientists or astronauts to travel and attend GLEX (Funding **cut down by 24%** from \$24.8 billion to \$18.8 billion).

India's Space Milestones	
1975	Aryabhata
2009	Chandrayaan-1
2013	Mangalyaan
2019	Chandrayaan-2
2024	Gaganyaan
2024	Mars Analogue mission

## International Maritime Defence Exhibition (IMDEX) Asia 2025

**News?** IMDEX Asia 2025 will be held in Changi Exhibition Centre, Singapore.

- **Purpose:** Offers a platform for maritime related businesses to showcase their latest vessels, systems and technologies.
- **Aim:** To strengthen naval cooperation, enhance interoperability, and promote mutual understanding between the navies
- **India's Fleet:** INS Kiltan
- **Impact for India:**
  - **Enhancing Maritime Ties** → With Singapore and other participating navies.
  - **Showcasing Indigenous Naval Capabilities** → supporting Aatmanirbhar Bharat in defence manufacturing.
  - **Enhancing Interoperability and Regional Presence**



## Jaganatha Dham Temple - Odisha Requested Name Change

**News?** The Odisha government asked to change the name of the recently inaugurated temple 'Jagannath Dham' in Digha, West Bengal.

- **Reasons:**
  - **Concern Over Cultural Appropriation:** Believed an attempt to replicate or dilute Puri's spiritual uniqueness.
  - **Violation of Scriptural Tradition:** Puri is one of the four Dhams by Adi Shankaracharya.
  - **Ritual and Material Differences:** Puri idols are made of **Neem wood (Daru Brahma)** and follow **secret rituals** during Nabakalebara;





- Digha idols are **stone-based** and do not follow these traditions.

