Career Launcher UPSC CSAT

MANTHAN

JUNE 2025 : WEEK-4

Registered / Corporate Office:

CL Educate Limited, A – 45, Mohan Co-operative Industrial Estate, New Delhi – 110044

Contact No. 011-41280800 / 1100

www.careerlauncher.com www.cleducate.com

Contents

1. Canada and EU sign defence pact amid strained US relations and global instability

- Canada has signed a landmark security and defence agreement with the European Union, signaling a significant shift in its international alignment amid growing global instability and concerns over U.S. reliability under President Donald Trump.
- Canadian Prime Minister Mark Carney joined European Commission President Ursula von der Leyen and European Council President António Costa in Brussels to formalize the agreement, which also included renewed commitments to support Ukraine and collaborate on global challenges such as climate change and artificial intelligence.
- Carney positioned Canada as "the most European of the non-European countries" and emphasized the importance of EU-Canada cooperation in promoting a rules-based international order.
- Costa echoed these sentiments, affirming shared values between the EU and Canada and highlighting the deepening transatlantic relationship.
- The new security pact enables Canada to participate in the EU's €150 billion defence fund, known as the Strategic Technologies for Europe Platform (Safe), opening opportunities for joint procurement, enhanced interoperability, and collaboration on cyber, maritime, and space security.
- The agreement mirrors a recent EU-UK defence arrangement and follows similar pacts with countries like Norway and Japan, but marks the first such pact with an American continent nation.
- Carney's visit and the agreement come at a critical geopolitical juncture, just ahead of the NATO summit in The Hague, where members are expected to commit 5% of GDP toward defence spending.
- Canada, spending only 1.37% of GDP on defence in 2024, lags behind NATO expectations.
- Carney, who rose to power in April on a platform rejecting U.S. annexationist rhetoric, underscored Canada's intention to "diversify and strengthen" its global partnerships.
- Von der Leyen welcomed Canada's involvement, noting that access to joint EU defence procurement would proceed following technical negotiations.
- The agreement is expected to accelerate Canada's defence modernization and international defence cooperation.
- Trade remains a strong foundation of EU-Canada ties, with a €125 billion relationship underpinned by the 2016 Comprehensive Economic and Trade Agreement (CETA).
- However, full ratification remains pending in 10 EU member states, including France and Italy.
- Ahead of the summit, Carney and his wife visited Schoonselhof military cemetery in Antwerp, honoring the 348 Canadian soldiers buried there.
- Joined by Belgian Prime Minister Bart De Wever, the ceremony served as a poignant reminder of Canada's long-standing commitment to European security and freedom.

NATO (North Atlantic Treaty Organization)

- NATO (North Atlantic Treaty Organization) is an intergovernmental military alliance established on April 4, 1949, with the signing of the North Atlantic Treaty (also known as the Washington Treaty).

- Its primary purpose is to ensure the collective defense of its members against external threats.
    - **Headquarters:** Brussels, Belgium
    - **Current Secretary General (as of 2025):** Mark Rutte (Netherlands)
    - **Number of Member Countries:** 32 (including Finland and Sweden, who joined recently)
    - **Founding Members (12):** United States, Canada, United Kingdom, France, Italy, Belgium, Netherlands, Luxembourg, Norway, Denmark, Iceland, Portugal.

Main Objectives:

Collective Defense:

- Article 5 of the treaty: An attack on one member is considered an attack on all.
- Invoked only once: After 9/11 attacks on the U.S. in 2001.

Crisis Management & Peacekeeping:

- NATO has led missions in Afghanistan (ISAF), Kosovo (KFOR), and Libya.

Deterrence and Defense:

- Maintains readiness through military exercises and modernized forces.

Cooperative Security:

- Works with non-member countries via Partnership for Peace (PfP), Mediterranean Dialogue, etc.

Recent Developments (2020s–2025):

Ukraine War:

- NATO strongly supports Ukraine with weapons, training, and non-combat aid but hasn't intervened militarily due to Article 5 constraints.

Expansion:

- Finland joined in April 2023.
- Sweden joined in March 2024, after years of neutrality.

Focus Areas:

- Cybersecurity, Hybrid warfare, Climate change & security, and emerging technologies like AI.

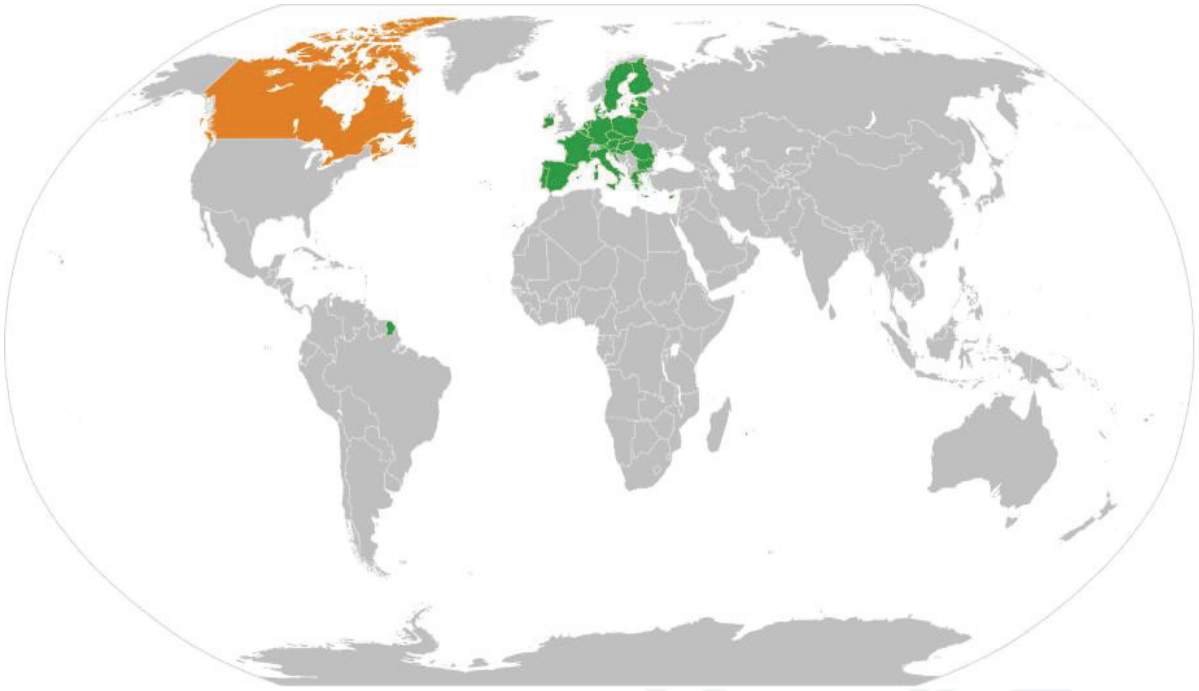
Response to Russia & China:

- NATO has increased its eastern flank presence (especially in Poland and the Baltics).
- Growing attention on the Indo-Pacific, with partners like Japan, South Korea, Australia, and New Zealand.

Comprehensive Economic and Trade Agreement (CETA)

- The Comprehensive Economic and Trade Agreement (CETA) is a major free trade agreement between Canada and the European Union (EU), along with its member states.

- It is designed to promote trade and economic integration by removing most tariffs and reducing trade barriers between the two economies.



Main Objectives of CETA

- Eliminate tariffs on 98% of products traded between the EU and Canada.
- Enhance market access for goods, services, investment, and public procurement.
- Protect intellectual property rights and facilitate digital trade.
- Promote sustainable development and uphold environmental and labor standards.
- Provide mechanisms for resolving disputes between investors and states.

Major Provisions

1. Tariff Elimination

- Almost 99% of tariffs on goods are removed.
- Particularly beneficial for automotive, agricultural, and industrial goods.

2. Services & Investment

- Greater access to financial services, telecommunications, and transport sectors.
- Legal certainty for investors, including the controversial Investor Court System (ICS).

3. Public Procurement

- EU firms gain access to Canadian federal, provincial, and municipal government contracts.

4. Geographical Indications (GIs)

- Protection of over 140 European GIs in Canada (e.g., Roquefort cheese, Parma ham).

5. Sustainable Development

- Commitments to maintain high levels of environmental and labor protection.

Investor Court System (ICS)

- A reformed system of investor-state dispute settlement (ISDS).
- Aims to address concerns about transparency and judicial independence.
- Still a point of contention among some EU member states and civil society.

European Council

- The European Council is one of the main institutions of the European Union (EU). It plays a crucial role in setting the EU's overall political direction and priorities, but it does not legislate.

What is the European Council?

- It is not the same as the Council of the European Union (also called the Council of Ministers) or the European Commission.
- The European Council is composed of the heads of state or government of the EU member states, along with:
- The President of the European Council
- The President of the European Commission
- The High Representative of the Union for Foreign Affairs and Security Policy may also take part, depending on the agenda.

Main Functions

Sets the EU's Political Agenda:

- Defines the general political direction and priorities of the EU.
- Adopts strategic agendas for future action (e.g., on climate, security, digital transformation).

Crisis Management:

- Deals with complex or sensitive issues that cannot be resolved at lower levels of intergovernmental negotiation.

Foreign and Security Policy:

- Plays a key role in shaping the EU's foreign, security, and defence policy.

Appointments:

- Appoints the President of the European Commission (subject to European Parliament approval).
- Appoints the High Representative for Foreign Affairs and Security Policy.
- Appoints the President of the European Council (every 2.5 years, renewable once).
- Influences appointments to the European Central Bank.

Current President (as of 2025)

- António Luís Santos da Costa is a Portuguese lawyer and politician who has served as President of the European Council since 2024.
- He previously served as the 118th prime minister of Portugal from 2015 to 2024 and the secretary-general of the Socialist Party from 2014 to 2024.

How It Works

- Meetings (known as EU summits) are held at least four times a year, usually in Brussels.
- Decisions are made by consensus, though sometimes by qualified majority (depending on the issue).

Legal Basis

- Established formally in the Treaty of Lisbon (2009).
- It is defined in Article 15 of the Treaty on European Union (TEU).

QUESTIONS

1. Consider the following countries:

I. Austria

II. Bulgaria

III. Croatia

IV. Serbia

V. Sweden

VI. North Macedonia

How many of the above are members of the North Atlantic Treaty Organization?

A. Only three

B. Only four

C. Only five

D. All the six

2. The recent Canada-EU security and defence agreement marks a significant shift in Canada's international alignment. Which of the following best reflects the primary objective of the agreement?

A. To increase Canada's defense spending to meet NATO's 5% GDP target by 2025.

B. To establish a strategic military alliance between Canada, the U.S., and NATO in the Indo-Pacific region.

C. To integrate Canada fully into the European Union's defense procurement system, replacing NATO commitments.

D. To strengthen Canada's global partnerships by diversifying beyond the United States.

3. NATO's expansion in the 2020s includes the admission of Finland and Sweden. Which of the following is the most accurate reason for this expansion?

A. The desire to enhance NATO's influence in the Indo-Pacific region.

B. To counter increasing Russian aggression and strengthen NATO's presence along its eastern flank.

C. To build stronger ties with China, following its growing presence in global security dynamics.

D. To implement NATO's plans to militarize the Arctic and compete with Russia for regional dominance.

2. International Yoga Day

- People from around the world celebrated the International Yoga Day with large scale gatherings, virtual events, and messages of peace and harmony.
- The genesis of yoga can be traced to ancient India. But it is impossible to pinpoint exactly how old it is.
- While the words "5,000-year-old tradition" are often thrown around, available evidence simply does not allow for such specificity.

International Yoga Day 2025

- This year's theme—"Yoga for One Earth, One Health"—stresses harmony between humans, the environment, and overall wellness.
- Symbolising balance and renewal, it reflects the core principles of yoga, making it the perfect day for this global celebration.
- The 11th edition will host 10 key events, including the grand Yoga Sangam across 1,00,000 locations.
- Other programs like Yoga Connect, Yoga Mahakumbh, and Harit Yoga focus on inclusion, ecology, and modern engagement with traditional practices.

In archaeological record

- The antiquity of yoga is often supported by two key pieces of archaeological evidence, though their interpretations remain debated.
- The first is a small steatite seal discovered at Mohenjodaro, an Indus Valley Civilisation (IVC) site in present-day Pakistan, dated to around 2500–2400 BCE.
- The seal depicts a seated figure with legs crossed, which many scholars, including Alistair Shearer in The Story Of Yoga: From Ancient India To The Modern West (2020), interpret as the yogic posture mulabandhasana, later associated with tantric yogis.

- However, the IVC script has not been deciphered, and without contextual understanding, interpreting this figure as evidence of yogic practice remains speculative.
- The posture could merely reflect the common cultural practice of sitting cross-legged, still prevalent across South Asia.
- A more compelling archaeological find is from Balathal in Rajasthan, a site of the Chalcolithic Banas culture.
- Here, archaeologists unearthed a 2,700-year-old human skeleton in a seated position resembling samadhi, a meditative posture associated with yogic and spiritual traditions.
- According to Shearer, the figure was buried cross-legged, hands resting on knees with thumb and index fingers touching in jnanamudra, a gesture widely recognized in yoga and meditation.
- This discovery presents a stronger case for historical yogic practice due to the specific positioning of the body and hands, suggesting intentionality rooted in meditative traditions.
- However, even this evidence serves only as a baseline, indicating that yoga existed by this time.
- Given that archaeological records typically preserve only fragments of human activity, it is reasonable to assume that the origins of yoga predate these finds.
- In conclusion, while both discoveries provide clues to yoga's antiquity, they cannot definitively establish its origins.
- They do, however, point toward the early development of yogic practices in South Asia, underscoring yoga's deep cultural and historical roots.

In ancient literature

- The term "yoga" appears in the earliest known Indian texts — the Vedic corpus (circa 1500–500 BCE) — but not in the way it is commonly understood today.
- In the Vedas, yoga does not refer to physical postures or meditative practices.
- Instead, it appears in more abstract or ritualistic contexts, distant from its modern association with holistic physical and mental discipline.
- It is in the Mahabharata (composed between 300 BCE and 300 CE) that the term "yoga" begins to take on meanings that are more recognizable to modern audiences.
- In this epic, yoga is used in both philosophical and practical contexts — referring to spiritual practices and physical austerities undertaken by ascetics and sages.
- This usage shows an evolution from earlier Vedic references, reflecting a growing emphasis on personal spiritual discipline and inward journey.
- Texts from the same period, such as the Upanishads, also discuss yoga in similar philosophical and spiritual terms, further indicating a broadening and deepening of the concept.
- However, some scholars argue that yoga may not have originated within the Vedic tradition at all.
- According to this perspective, yoga emerged from heterodox traditions such as Buddhism and Jainism, which flourished in the first millennium BCE.
- These traditions emphasized individual spiritual practice, including meditation and asceticism, often grouped under the term "yoga." Vivian Worthington, in A History of Yoga (1982), suggests that yoga was a defining feature of these independent spiritual movements.
- The most influential and systematic account of yoga is found in the Yoga Sutra of Maharishi Patanjali, composed around 350 CE.

- This text, dedicated entirely to the subject, outlines the philosophy and practice of yoga in detail. Most modern understandings of yoga — including its meditative, ethical, and physical dimensions — are derived from Patanjali's formulation.

Yoga and Its Importance in the Indian Context

1. Origin and Evolution of Yoga in India

- Yoga, a Sanskrit word meaning "union," is one of India's most profound contributions to the world. Rooted in the ancient Indian civilization, its philosophy and practice span over 5,000 years.
- While the Rig Veda contains the earliest references to yogic ideas (such as control of the mind and senses), yoga matured significantly through the Upanishads, Bhagavad Gita, Patanjali's Yoga Sutras, and later, through various schools of Indian philosophy including Samkhya, Vedanta, Buddhism, and Jainism.

Yoga in India evolved from:

- Spiritual practice in the Vedic and pre-Vedic period
- Discipline for liberation (moksha) in classical philosophy
- Physical and mental well-being during the medieval Bhakti and Hatha yoga traditions
- Global wellness movement in the modern period, especially through figures like Swami Vivekananda, Paramahansa Yogananda, B.K.S. Iyengar, and Sri Sri Ravi Shankar

2. Philosophical Importance in Indian Culture

Yoga is deeply embedded in Indian spiritual and philosophical thought:

- **Union with the Divine:** Yoga aims at self-realization and union with the universal consciousness (Brahman).
- **Balance of mind, body, and soul:** It harmonizes the material and spiritual aspects of life, which is a core Indian ideal.
- **Path to Moksha:** In Hinduism, Buddhism, and Jainism, yoga is considered a key path to liberation from the cycle of birth and death (samsara).
- **Integral to Indian Epics:** In the Bhagavad Gita, Lord Krishna elaborates on Karma Yoga (action), Bhakti Yoga (devotion), and Jnana Yoga (knowledge) as paths to spiritual growth.

3. Practical Importance in Indian Society

In the Indian context, yoga serves multiple roles:

- **Health and Wellness:** Promoted by Ayurveda and modern science alike, yoga improves flexibility, strength, immunity, and mental clarity. It is particularly effective for managing stress, diabetes, hypertension, and lifestyle disorders.
- **Education and Youth Development:** Schools and colleges in India integrate yoga to promote discipline, focus, and emotional resilience.
- **Spiritual Discipline:** For ascetics and householders alike, yoga is a path to inner peace, moral strength, and mindfulness.
- **Tool for National Identity and Diplomacy:** Yoga is seen as a cultural soft power for India. International Day of Yoga (June 21), proposed by India and adopted by the UN in 2014, highlights India's role in promoting global health and harmony.

4. Government and Institutional Support

- **Ministry of AYUSH:** Established to promote Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homeopathy.
- **Morarji Desai National Institute of Yoga (MDNIY):** Promotes yoga training and research.

- **Inclusion in NEP 2020:** The National Education Policy emphasizes the integration of yoga in school curricula.
- **Promotion through NCC, NYKS, and Sports:** Yoga is increasingly being used in national programs to foster youth development and physical education.

5. Contemporary Relevance

- **Mental Health:** With rising stress and depression rates, yoga offers a non-invasive solution for psychological wellness.
- **Pandemic Resilience:** During COVID-19, yoga helped people cope with isolation and anxiety.
- **Cultural Identity:** As a repository of ancient wisdom, yoga continues to connect modern Indians with their spiritual heritage.

QUESTIONS

4. Why was June 21 chosen as the International Day of Yoga?

A. It is the day the United Nations passed the Yoga resolution.

B. It is the day of the first recorded Yoga session.

C. It marks the birth of a prominent Indian yogi.

D. It is the Summer Solstice, the longest day of the year in the Northern Hemisphere.

5. What is the theme for International Day of Yoga 2025?

A. Yoga for Global Peace and Prosperity

B. Yoga for One Earth, One Health

C. Yoga for Mental and Physical Well-being

D. Yoga for Unity in Diversity

6. Who among the following was the first introduced the proposal for the International Day of Yoga at the United Nations?

A. Barak Obama

B. Manmohan Singh

C. Narendra Modi

D. Donald J Trump

3. Banakacherla project: What is the latest water dispute between Andhra Pradesh and Telangana

- Andhra Pradesh Chief Minister N Chandrababu Naidu has announced his plan to link the Godavari River with the Penna River through the Krishna River and build a massive reservoir at Banakacherla in Nandyal district.

- The Telangana government, opposing the project vociferously, has said it violates the Andhra Pradesh Reorganisation Act, 2014.

What is the Banakacherla reservoir plan?

- The Banakacherla reservoir project is meant to transform Andhra Pradesh's drought-prone Rayalaseema region into a fertile land.
- As per the project, the first step would be to enhance the Polavaram Right Main Canal's capacity from 17,500 cusecs to 38,000 cusecs to allow the transfer of Godavari water to Krishna.
- Then, the capacity of Thatipudi Lift Irrigation Scheme's canal will be increased from 1,400 cusecs to 10,000 cusecs.
- A reservoir will then be constructed at Bollapalli in Guntur district, from where water will be lifted at a rate of 28,000 cusecs for transferring to the Banakacherla reservoir.
- Lift stations will be established at Harischandrapuram, Lingapuram, Vyyandana, Gangireddypalem, and Nakirekallu to pump water to the Bollapalli reservoir.
- The water will then be diverted to the Veligonda reservoir and Banakacherla reservoir via a tunnel passing through the Nallamala forest.
- Chandrababu Naidu's main claim is that the water being diverted to Banakacherla is surplus water from the Godavari.

Why is Telangana opposing the project?

- Telangana's CM Revanth Reddy and Minister for Irrigation Uttam Kumar Reddy have written to Union Finance Minister Nirmala Sitharaman and Jal Shakti Minister CR Patil, stating that the Banakacherla project violates the provisions of the Andhra Pradesh State Reorganisation Act, 2014.

- The project should be kept in abeyance because it has not yet received approval from the Apex Council managing the Krishna River Management Board (KRMB) and the Godavari River Management Board (GRMB), and the Central Water Commission.
- Telangana has contended that the Godavari Water Disputes Tribunal has ruled on 1,486 TMCft of Godavari between Andhra Pradesh and Telangana, of which Telangana was allotted 968 TMCft.
- The tribunal did not determine the extent of surplus water in the river, and hence Banakacherla project will be a threat to Telangana's water security, it has claimed.
- Diverting Godavari waters to Banakacherla will affect the water projects of the state.

Why is this political bone of contention?

- Telangana was carved out of AP in 2014, after many years of agitation for separate statehood. Water-sharing was the heart of this agitation.
- It was contended during the agitation that Telangana's water resources were being diverted to Andhra Pradesh because of regional disparities.
- Building a reservoir to divert water from the Godavari to Andhra Pradesh has thus opened old wounds.

Nallamala forest

- Nallamala Forest is a dense and ecologically rich forest region in the Eastern Ghats of India, spread across the states of Andhra Pradesh and Telangana.

Geographical Spread

- **Location:** Stretches across Nandyal, Prakasam, and parts of Kadapa districts in Andhra Pradesh, and Nagarkurnool and Nalgonda districts in Telangana.
- **Mountain Range:** Lies within the Eastern Ghats.
- **Rivers:** The Krishna River flows through the northern boundary; tributaries like Bhavanasi, Saguneti, and Gundlakamma originate here.

Ecological Importance

- Part of the Nallamala Hills, this forest is a critical biodiversity hotspot.
- Dominated by tropical dry deciduous forests, with teak, tendu, bamboo, and sandalwood.

Part of the Eastern Ghats Complex, known for:

- High endemic species
- Important wildlife corridors
- Unique ecosystems
- Fauna

Cultural and Religious Significance

- Srisailam Temple (dedicated to Lord Shiva as Mallikarjuna) is located deep within the forest.
- Associated with many Hindu legends and mythological references.
- Tribal communities like Chenchus (a Particularly Vulnerable Tribal Group - PVTG) live in harmony with the forest.

Conservation and Threats

Protected Area:

- Major part of it lies in the Nagarjunasagar-Srisailam Tiger Reserve (NSTR).

Threats:

- Mining (uranium mining proposals near Lambapur-Peddagattu area faced strong environmental protests)
- Illegal logging
- Forest fires
- Habitat fragmentation due to roads and dam projects.

Polavaram Project

- The Polavaram Project is a major multi-purpose dam under construction across the Godavari River near Polavaram in Andhra Pradesh.
- **Dam Structure:** Includes 1,128 m concrete spillway, 140 m non-overflow concrete section, and 2,454 m earth-cum-rock fill embankment. Height reaches approximately 45.7 m above river bed
- **Reservoir Size:** Total capacity of ~194 TMCft; active capacity ~175 TMCft, submerging parts of Andhra Pradesh, Chhattisgarh, and Odisha
- **Irrigation Impact:** Aims to develop around 4.37 lakh ha of gross irrigation; stabilizing deltas; includes left and right main canals spanning over 350 km together
- **Hydropower & Water Supply:** 12×80 MW Kaplan turbines totaling 960 MW, generating about 2.3 billion kWh annually.
- Drinking water for ~28 lakh people across 611 villages & industrial supply to Visakhapatnam. Planned diversion of 80 TMC to Krishna basin

Timeline, Budget & Construction

- **Construction Began:** 2004; National status cabinet approval given later
- **Cost Evolution:** Original estimates around ₹10,150–16,000 cr (2006–2011 PL) ballooned to ₹55,550 cr in 2017-18 PL
- **Current Completion Target:** Under CM Naidu, aiming for final completion between October 2026 and end of 2027
- **Recent Funds:** Centre approved ₹12,157 cr in 2024–26. Parliamentary and international expert panel actively reviewing major structural components including diaphragm wall

Challenges & Delays

- **Structural Damage & Delays:** 2020 floods damaged cofferdams and diaphragm wall, delaying work and requiring costlier rebuilding (now ₹990 cr)
- **Administrative & Political Issues:** White papers allege mismanagement and fund diversion during the previous state government, citing civil work stagnation from 2019–24.
- **Interstate Disputes:** Backwater submersion affects Odisha, Chhattisgarh, Telangana; water-sharing concerns over Godavari-Krishna interlink and downstream/surrounding states

When It's Complete

- **Irrigation:** ~4.37 lakh hectares supported.
- **Hydropower:** 960 MW capacity.
- **Drinking Water:** 28 lakh people + Visakhapatnam industry.
- **River Linking:** 80 TMC surplus Godavari diverted to Krishna basin.
- **Flood Control:** Controlling Godavari's seasonal floods, providing resilience

Current Status & Outlook

- **Civil work progress:** Significant headway under current administration; international experts guiding on structural integrity
- **Projected Inauguration:** Reservoir filling and power generation expected post-2027, once displaced families are fully rehabilitated
- **Monitoring:** Parliamentary oversight committee and CWC supervising resumed critical work like diaphragm wall; KPIs and timelines set by the state government

Broader Impacts

- **Economic:** Expected to boost agriculture, industrial growth, employment; strategic support to Andhra Pradesh's development.
- **Environmental & Social:** Large-scale submergence necessitates R&R of tribal and rural communities; environmental impact studies underway.
- **Regional Dynamics:** Projects like Polavaram - Banakacherla linking (₹81,900 cr) being fast-tracked; however, facing scrutiny from Telangana and other states

Summary

- The Polavaram Project is one of India's most ambitious river-linking and multipurpose infrastructure projects, aiming to redefine irrigation, hydropower generation, and water security across Andhra Pradesh and neighbouring regions.
- It has navigated significant technical, environmental, political, and financial challenges.
- Yet with renewed momentum, oversight from experts and government, and a focused deadline by 2027, it stands poised to become the "lifeline" of the state—as its supporters envisage.

Difference between Eastern Ghats and Western Ghats

- The Eastern Ghats and Western Ghats are two distinct mountain ranges in India, both ecologically and geographically significant.

Geographical Location

Feature	Eastern Ghats	Western Ghats
Location	Eastern India, along the Bay of Bengal	Western India, along the Arabian Sea
States Covered	Odisha, Andhra Pradesh, Telangana, Tamil Nadu	Maharashtra, Goa, Karnataka, Kerala, Tamil Nadu
Continuity	Discontinuous and broken into blocks	Continuous and well-defined
Highest Peak	Arma Konda (1,690 m) – Andhra Pradesh	Anamudi (2,695 m) – Kerala

Topography and Geology

Feature	Eastern Ghats	Western Ghats
Orientation	NE–SW direction	N–S direction
Elevation	Generally lower	Higher in elevation
Origin	Older than Western Ghats (Pre-Cambrian rocks)	Younger (formed during the break-up of Gondwana)

Climate and Rainfall

Feature	Eastern Ghats	Western Ghats
Rainfall	Receives less rainfall	Receives heavy rainfall (due to SW monsoon)
Climate Influence	Not a major barrier to monsoons	Acts as a climatic barrier; causes orographic rainfall

Biodiversity and Ecology

Feature	Eastern Ghats	Western Ghats
Biodiversity	Less diverse	Highly biodiverse (UNESCO World Heritage Site)
Endemic Species	Fewer endemic species	Many endemic flora and fauna species
Forest Cover	Fragmented deciduous forests	Dense tropical evergreen and semi-evergreen forests

Rivers and Valleys

Feature	Eastern Ghats	Western Ghats
Major Rivers	Mahanadi, Godavari, Krishna, Cauvery (cut through)	Short rivers like Mandovi, Sharavathi (flow westward)
Role in Drainage	Rivers cut through and create valleys	Forms the watershed for many rivers

Human and Cultural Aspects

Feature	Eastern Ghats	Western Ghats
Population Density	Sparsely populated	Densely populated in parts
Tribes and Culture	Tribal populations like Kondhs, Savaras	Tribes like Todas, Kurumbas, Kotas
Sacred Sites	Fewer pilgrimage sites compared to Western Ghats	Numerous ancient temples and sacred groves

Summary Table:

Aspect	Eastern Ghats	Western Ghats
Continuity	Discontinuous	Continuous
Elevation	Lower	Higher
Rainfall	Less	More (Orographic)
Biodiversity	Moderate	Very High
Climate Barrier	No	Yes
River Flow	Rivers cut through	Rivers originate and flow westward
UNESCO Status	No	Yes (as World Heritage Site)

7. Which of the following is a significant geographical feature of the Nallamala forest?
   A. It is primarily a tropical evergreen forest found along the Western Ghats.
   B. It forms part of the Sundarbans mangrove forest in the Bay of Bengal.
   C. It is located in the Eastern Ghats and is ecologically significant for both Andhra Pradesh and Telangana.
   D. It is a part of the Western Ghats and is known for its dense tropical forests.

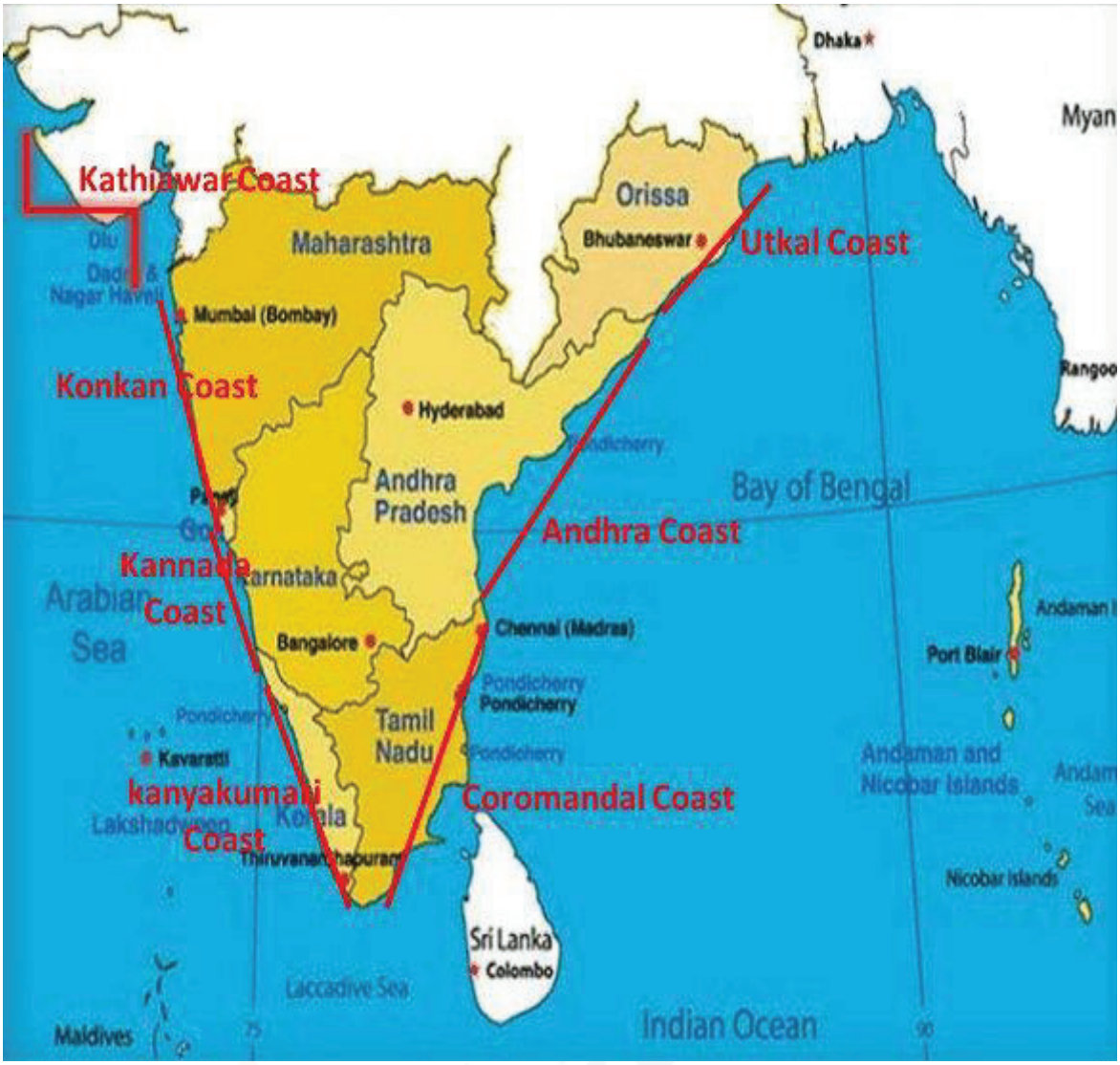
8. Which of the following mountain ranges is known for having a greater biodiversity and a continuous range, acting as a climatic barrier in India?
   A. Eastern Ghats
   B. Western Ghats
   C. Aravalli Range
   D. Vindhya Range

9. The Banakacherla project seeks to divert water from which of the following rivers to address water scarcity in Andhra Pradesh?
   A. Krishna River
   B. Godavari River
   C. Yamuna River
   D. Narmada River

10. Which of the following countries is primarily responsible for the exploitation of eastern Congo's minerals, such as cobalt and copper, according to the recent discussions surrounding the Congo-Rwanda conflict?
   A. India
   B. China
   C. United States
   D. Russia

4. How India 'added' more than 3,500 km to its coastline

- India's coastline is now far longer than it used to be, almost 50% more than the previous length.
- This increase has happened not because of any acquisition of territory, but due to more accurate measurements that have recently been carried out.
- Additionally, the number of islands in India has increased slightly. This rise in the number has taken place due to India's reassessment and recount of its offshore islands.



- The increase in the length of the coastline and the number of islands is interesting and significant from administrative and strategic perspectives. However, there has been no change in the ground situation.

Longer coastline

- The length of India's coastline used to be 7,516 km, something that was ascertained in the 1970s.
- But this coastline has now been measured to be 11,098 km, an increase of 3,582 km, or nearly 48%.
- The main reason for such a big difference is in the scale of data used for measurement.
- The earlier measurement was based on data that were of the scale of 1:4,500,000 (one to forty-five lakh), or smaller.
- However, with time, much better resolution data has become available, making the measurements more accurate.
- The recent exercise calculated the length of the coastline using data that had a scale of 1:250,000 (one to 2.5 lakh).
- Coastlines are highly irregular structures. Increasing the resolution of data is like reducing the ruler being used for measurement.
- A one-km ruler, for example, will ignore many small irregularities in the land structure that a one-metre ruler will be able to map.
- Higher resolution data can capture the coastline, its bends and curves, in more intricate details.

- In low-resolution data, these details get smoothened out, and appear as straight lines.
- The loss of bends and curves would shorten the length.
- Also, the previous estimation was a result of more conventional and manual calculations.
- These have now been replaced with modern GIS software, which is able to capture the irregularities of the landmass much more accurately.
- Another reason for the increase has been the inclusion of coastlines of many off-shore islands that had been left out of previous calculations.
- Some of these islands were either not visible in smaller-scale data or were omitted due to the practical constraints of manual methods of measurement.

Length of India's coastline along states

State/UT	Coastline length (in km)
Gujarat	2,340.62
Maharashtra	877.97
Goa	193.95
Karnataka	343.3
Kerala	600.15
Tamil Nadu	1,068.69
Andhra Pradesh	1,053.07
Odisha	574.71
West Bengal	721.02
Daman and Diu	54.38
Pondicherry	42.65
Lakshadweep	144.8
Andaman and Nicobar	3,083.50

Source: Ministry of Ports, Shipping and Waterways

The coastline paradox

- While the new length of India's coastline is a much more accurate estimate, it is still not the actual length.
- In fact, the actual length of India's coastline, or any other coastline for that matter, cannot be measured.
- This is the famous coastline paradox. Highly irregular features like a coastline do not have a finite length.
- Their length depends on the scale or resolution at which they are being measured.
- They can always be observed, and measured, in more detail, which will lead to a longer length.
- The coastline paradox extends to many other similar natural features such as river networks and mountain ranges.
- The path that a river takes, for example, is very irregular.
- The banks of a river are not a straight line.
- Calculating the length of a river along its banks would lead to the same kind of problem as in measuring the coastline.
- However, river lengths are mostly calculated along the main stream, and not along the banks.

- It is not surprising therefore that the length of India's coastline has changed significantly.
- The length is a factor of the precision of measurement used, and as greater precision becomes available due to technological advancements, this length would increase further.
- For this reason, this exercise has now been mandated to be carried out every ten years.
- Other countries do it as well. Reassessment of coastlines becomes necessary also on account of natural processes such as coastal erosion and human interventions like land reclamation.

New islands

- Unlike the coastline, the number of islands does not lend itself to a measurement problem.
- But there are other kinds of ambiguities. For example, a location might be an island during high tide but connected to the land during low tide.
- In 2016, an exercise by the Office of the Surveyor General of India listed 1,382 offshore islands in India.
- However, a count by state governments, and some other agencies like the Coast Guard and Indian Navy had yielded a lesser number of 1,334.
- A subsequent data reconciliation exercise removed the ambiguities in definitions and standardised the classifications to arrive at a new number of offshore islands in the country, 1,298.
- This exercise also listed 91 inshore islands.
- The total number of islands is 1,389. These do not include the large number of river islands in states such as Assam and West Bengal.

Implications

- Since the ground situation has not changed, the new numbers, for the islands or the length of the coastline, are largely academic in nature. Nothing much changes at the international level, for example.
- But these are not irrelevant details.
- The new numbers result in a better understanding of India's territory and terrain.
- There surely are administrative, developmental and security implications.
- However, these can have operational significance as well.
- For example, the new coastline could impact the areas covered by Coastal Zone Regulations (CRZ) in some places.
- Efforts to check coastal erosion, or to strengthen the coastline to make it more resilient from climate change threats, would also be impacted. Tourism and infrastructure development are also likely to be affected.

Coastline

- The coastline is the area where land meets the sea or ocean. It includes the entire boundary between land and a large body of water like a sea, ocean, or sometimes even a large lake.

Key Features of a Coastline:

- Beaches – sandy or pebbly shores.
- Cliffs – steep rock faces, often found in rugged coastlines.
- Bays and Coves – indentations in the coast formed by erosion.

- Estuaries and Deltas – where rivers meet the sea.
- Tidal Zones – areas affected by high and low tides.

Types of Coastlines:

- **Rocky Coastlines** – steep, with cliffs and less sediment (e.g., parts of the western coast of India, California).
- **Sandy Coastlines** – dominated by beaches and dunes (e.g., eastern Indian coast, Florida).
- **Estuarine Coastlines** – formed where rivers meet the sea (e.g., Sundarbans Delta).
- **Coral Reef Coastlines** – found in tropical regions with coral formations (e.g., Lakshadweep Islands, Great Barrier Reef).
- **Major coastal states:** Gujarat, Maharashtra, Goa, Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Odisha, and West Bengal.
- **Important coastal cities:** Mumbai, Chennai, Visakhapatnam, Kochi.

QUESTIONS

11. Which of the following statements is the primary reason for the increase in the length of India's coastline?

A. The increase in coastline is due to the acquisition of new coastal territories.

B. The increase is due to the use of higher resolution data and modern GIS software for measuring the coastline.

C. The new coastline measurement includes river networks and mountain ranges.

D. The increase is primarily due to natural processes such as coastal erosion.

12. The concept of the "coastline paradox" highlights which of the following challenges in measuring the coastline?

A. The coastal length depends on the scale of resolution used for measurement.

B. The coastline is constantly changing due to erosion, making accurate measurement impossible.

C. Coastline measurements are inconsistent between countries, leading to international disputes.

D. The coastline is measured only along major river streams, not along banks.

13. Which of the following has the longest coastline in India?

A. Gujarat

B. Andhra Pradesh

C. Tamil Nadu

D. Andaman and Nicobar Islands

14. Which of the following has the shortest coastline?

A. Goa

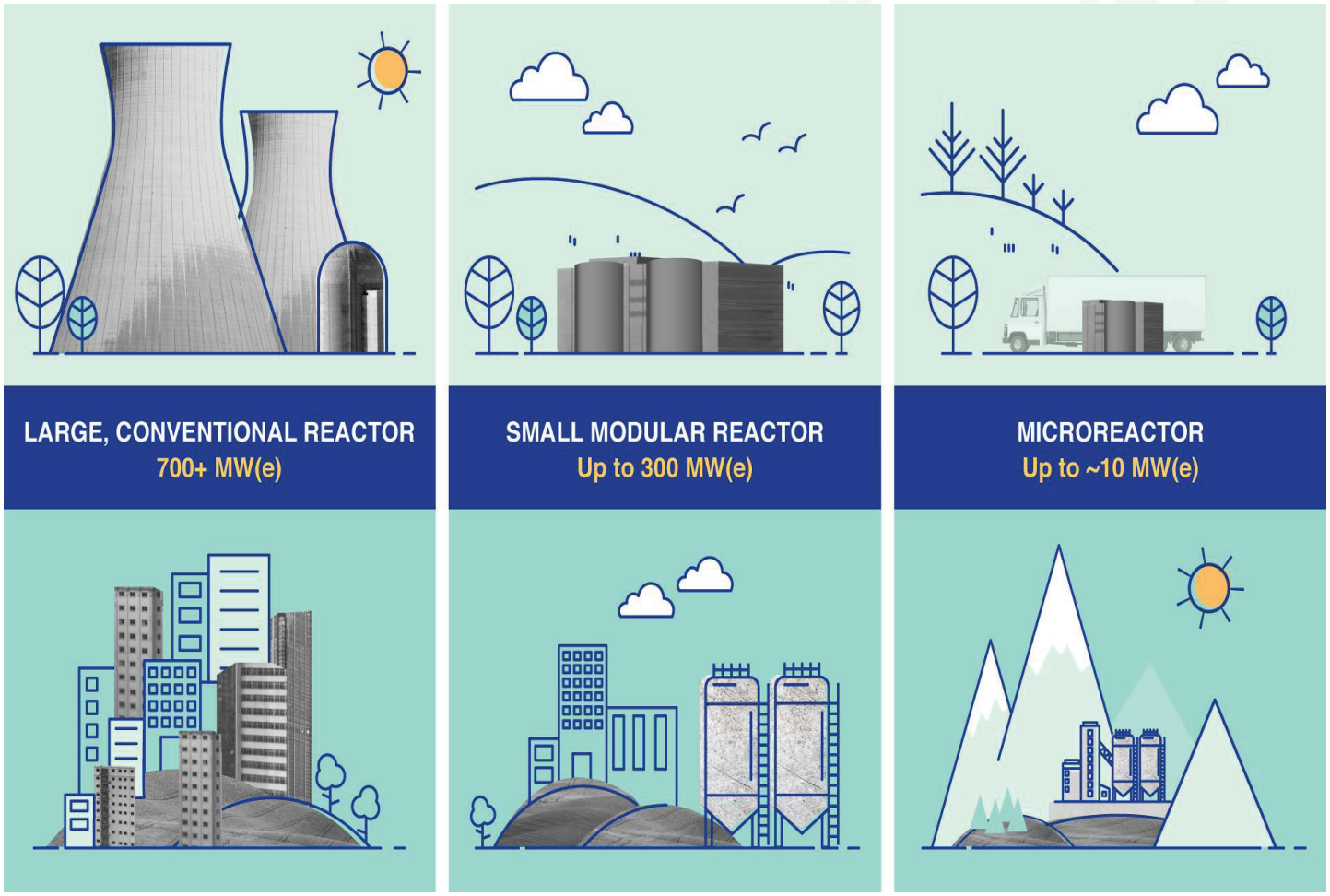
B. Kerala

C. Puducherry

D. Lakshadweep Islands

5. Centre ready to set up nuclear power plant in Bihar

- Union Energy Minister Manohar Lal Khattar announced in Patna that the central government is ready to support the establishment of a nuclear power plant in Bihar, marking a significant milestone in the State's energy development.
- This initiative is part of the Centre's broader plan to set up six Small Modular Reactors (SMRs) across India.
- The announcement came during the fifth meeting of Energy Ministers from eastern States, including Bihar, West Bengal, Odisha, and Jharkhand, where regional power challenges and future goals up to 2035 were discussed.



- Khattar emphasized that if the Bihar government wishes to proceed with the project, the Centre would extend full support.
- He also revealed that an additional 500 MW of power would be provided to Bihar for three months to meet current demands.
- Highlighting Bihar's progress, he praised the record number of smart meters installed, noting that the State, once considered backward in the power sector, is now taking major strides forward.

- The proposed nuclear power plant, if implemented, would be the first in Bihar and is expected to not only provide a stable and clean energy source but also spur investment, employment, and technological advancement in the region.
- Minister Khattar called it a "historic opportunity" and stressed the importance of swift implementation by the State government.
- Khattar also noted India's transformation from a power-deficit nation in 2013–14 (4.5% deficit) to now being self-sufficient and even exporting power to neighboring countries such as Bhutan, Bangladesh, Myanmar, and Nepal.
- The move to introduce SMRs, known for lower costs, faster deployment, and enhanced safety, is aimed at meeting growing energy demands, particularly in regions where large nuclear plants are not feasible.
- This signals a revolutionary shift in Bihar's and India's energy future.

Small Modular Reactors (SMRs)

- Small Modular Reactors (SMRs) are a new generation of nuclear reactors designed to be smaller, more flexible, and safer than traditional large-scale nuclear power plants.

What Are SMRs?

- "Small" refers to electric power output, typically up to 300 megawatts (MW) per unit (about one-third the size of a traditional reactor).
- "Modular" means they are factory-fabricated and transportable, allowing for ease of installation and scalability.
- SMRs are often designed for underground or underwater deployment to enhance safety.

Key Features

Feature	Description
Compact Size	Easier to deploy in remote or smaller locations.
Scalability	Multiple units can be added over time to match energy demand.
Enhanced Safety	Incorporate passive safety systems—require little or no human intervention in emergencies.
Shorter Construction Time	Modular construction reduces costs and build time.
Lower Upfront Cost	Less expensive than traditional large nuclear plants.

Types of SMRs

- Pressurized Water Reactors (PWRs) – most common; water used as coolant and moderator.
- High-Temperature Gas-cooled Reactors (HTGRs) – use helium gas and can reach high temperatures (900°C+).
- Molten Salt Reactors (MSRs) – use molten salt as coolant; potential for very high efficiency.
- Fast Neutron Reactors (FNRs) – use fast neutrons; can potentially reduce nuclear waste.

Applications

- Electricity generation in remote or small-grid areas.
- Desalination of seawater.
- Hydrogen production via high-temperature electrolysis.
- District heating or industrial process heat.

Global SMR Projects

Country	Project/Company	Status
USA	NuScale Power	Approved by NRC; plans for 2029 deployment.
Canada	GE Hitachi BWRX-300	First site in Ontario; expected by 2028.
Russia	Akademik Lomonosov (floating SMR)	Operational since 2020.
China	Linglong One (ACP100)	Under construction.
India	BARC's 100 MW PHWR-based SMR	Under development; aligned with "Make in India".

Benefits of SMRs

- Reduced financial risk due to modular deployment.
- Minimal land footprint.
- Ideal for developing nations or off-grid communities.
- Reduced greenhouse gas emissions, aiding climate goals.

Challenges

- Regulatory approval processes still evolving.
- Economic competitiveness with renewables and gas.
- Public perception and nuclear waste management.
- Supply chain and skilled workforce development needed.

India and SMRs

- India is exploring indigenously designed SMRs to:
- Support its net-zero by 2070 goals.
- Provide clean power to remote areas.
- BARC is leading SMR development.
- Policy and regulatory framework being prepared to enable deployment.
- Small Modular Reactors (SMRs) represent a significant innovation in nuclear technology, offering a clean, safe, and flexible energy solution.
- While challenges remain in terms of economics and regulation, their potential role in decarbonization and energy access makes them a key area of focus for many countries, including India.

New Nuclear Reactors Under Construction

1. Kudankulam Nuclear Power Plant (Units 3 & 4) – Tamil Nadu

- Type: VVER‑1000 (Russian-designed pressurized water reactors, 1 000 MWe each).
- Status: Construction resumed around 2023 after delays; commission expected mid‑2020s.

- Owner: Nuclear Power Corporation of India Limited (NPCIL) in partnership with Russia's Rosatom.

2. Kudankulam Units 5 & 6 – Tamil Nadu

- Type: Another pair of 1 000 MWe reactors based on the same Russian VVER design.
- Status: In early construction stages—site preparation and foundation work underway.
- Timeline: Estimated to come online in the late 2020s.

3. Rajasthan Atomic Power Station (RAPS) – Rajasthan Units 7 & 8

- Type: Advanced Heavy Water Reactors (AHWRs) of approximately 700 MWe.
- Status: Civil work and reactor building foundations in progress—part of India's push to boost heavy water reactor capacity.
- Timeline: Scheduled for completion by the late 2020s.

4. Kaiga Generating Station – Karnataka Unit 5

- Type: Pressurized Heavy Water Reactor (PHWR) ~700 MWe.
- Status: Site-ready; construction expected soon to help expand India's indigenously designed PHWR fleet.
- Timeline: Completion likely in the second half of the 2020s.

Power Generation Process in Indian Nuclear Reactors

- Indian nuclear power plants primarily use Pressurized Heavy Water Reactors (PHWRs) and Pressurized Water Reactors (PWRs), along with some Boiling Water Reactors (BWRs) and Fast Breeder Reactors (FBRs). The process can be broadly divided into several steps:

1. Nuclear Fission Reaction

- Inside the reactor core, nuclear fuel rods containing fissile material (mainly Uranium-235 or Plutonium-239) undergo controlled fission.
- When a uranium atom splits, it releases a large amount of heat energy and neutrons.
- These neutrons continue the chain reaction by splitting more uranium atoms.

2. Heat Generation

- The heat generated by fission raises the temperature of the reactor coolant.
- In Indian PHWRs, heavy water (D2O) acts as both the moderator (to slow neutrons) and the coolant.
- The coolant carries the heat away from the reactor core.

3. Heat Transfer to Steam Generator

- The heated heavy water coolant flows through tubes in the steam generator.
- It transfers heat to ordinary water on the secondary side, producing high-pressure steam.
- This steam is free of radioactive contamination since it is separate from the reactor coolant.

4. Steam Drives Turbine

- The high-pressure steam flows to the steam turbine.
- The steam expands and spins the turbine blades, converting thermal energy into mechanical energy.

5. Electricity Generation

- The turbine is connected to a generator.
- The mechanical rotation of the turbine drives the generator, producing electricity via electromagnetic induction.

6. Condensation and Recycling

- After passing through the turbine, the steam enters a condenser.
- It is cooled down and converted back into water.
- This water is then pumped back to the steam generator for reuse.

Indian Nuclear Reactor Types and Examples

- **PHWRs (Pressurized Heavy Water Reactors):** India's most common type, e.g., Kakrapar, Rajasthan, and Tarapur.
- **PWRs (Pressurized Water Reactors):** Used in India's imported reactors like Kudankulam.
- **Fast Breeder Reactors (FBRs):** Like the Prototype Fast Breeder Reactor (PFBR) at Kalpakkam, using a different process to breed more fuel.

QUESTIONS

15. Which of the following is the primary advantage of Small Modular Reactors (SMRs) over traditional large-scale nuclear power plants?

A. SMRs are capable of generating electricity at a much higher capacity than traditional nuclear plants.

B. SMRs are designed to operate without any human intervention during normal operation.

C. SMRs require significantly longer construction periods due to their modular nature.

D. SMRs are more scalable and suitable for deployment in smaller or remote locations with varying power needs.

16. Which of the following statements best explains the geopolitical significance of India's proposal to set up Small Modular Reactors (SMRs) in Bihar?

A. The establishment of SMRs in Bihar is a move to reduce India's reliance on fossil fuels and diversify its energy sources.

B. The development of SMRs in Bihar directly addresses India's power deficit and helps it meet international climate agreements.

C. SMRs in Bihar represent a strategic move to assert India's influence in South Asia's energy landscape, especially regarding relations with China.

D. The development of SMRs in Bihar is an effort to align India's energy policies with the interests of the United States and European Union.

6. India breaks into top 100 of SDG Index for the first time

- India has, for the first time, secured a position among the top 100 countries in the Sustainable Development Goals (SDG) Index, ranking 99th out of 167 nations in the 2025 edition of the Sustainable Development Report (SDR), released by the UN Sustainable Development Solutions Network.
- The latest report places India with a score of 67 on the SDG Index, a significant improvement from its 109th rank in 2024.
- China is ranked 49th with a score of 74.4, while the United States stands at 44th with 75.2 points.
- The index measures overall progress toward achieving the 17 SDGs adopted by United Nations member states in 2015, with a score of 100 indicating full achievement of all goals.
- Among India's neighbours, Bhutan ranks 74th (70.5), Nepal 85th (68.6), Bangladesh 114th (63.9), and Pakistan 140th (57).
- Maritime neighbours Maldives and Sri Lanka stand at 53rd and 93rd places respectively.
- The report noted that since the adoption of the SDGs, India has steadily improved its standing: it ranked 112th in 2023, 121st in 2022, and 120th in 2021.
- Despite India's gains, the report flagged that global progress on the SDGs has largely stalled.
- "Only 17 per cent of the SDG targets are on track to be achieved by 2030," it stated, attributing this to "conflicts, structural vulnerabilities, and limited fiscal space" in many regions.
- The SDR, authored by a team led by economist Jeffrey Sachs, pointed to continued dominance by European nations on the index.

- Finland, Sweden and Denmark hold the top three positions, with 19 of the top 20 countries located in Europe.
- However, even these nations are facing challenges related to climate change and biodiversity due to unsustainable consumption patterns.
- East and South Asia have shown the fastest regional progress since 2015, driven by rapid socioeconomic development. Countries registering the largest gains in SDG performance include Nepal (+11.1), Cambodia (+10), the Philippines (+8.6), Bangladesh (+8.3), and Mongolia (+7.7). Among other regions, Benin (+14.5), Peru (+8.7), the UAE (+9.9), Uzbekistan (+12.1), Costa Rica (+7), and Saudi Arabia (+8.1) were noted for their improvement.
- The report observed that while only a fraction of global targets are on track, several countries have made notable gains in basic services and infrastructure, particularly in mobile broadband access (SDG 9), electricity (SDG 7), internet usage (SDG 9), under-five mortality (SDG 3), and neonatal mortality (SDG 3).
- Conversely, it identified five areas of significant regression since 2015: obesity rates (SDG 2), press freedom (SDG 16), sustainable nitrogen management (SDG 2), the Red List Index measuring biodiversity loss (SDG 15), and the Corruption Perceptions Index (SDG 16).
- In terms of commitment to multilateralism and the UN system, Barbados, Jamaica, and Trinidad and Tobago were ranked highest. Among G20 economies, Brazil leads at 25th, while Chile is the top OECD performer at 7th.
- The United States, which has taken policy positions opposing the SDGs, ranked last (193rd) for the second consecutive year.
- The report comes ahead of the Fourth International Conference on Financing for Development (FfD4), to be held in Seville, Spain.
- It called for urgent reform of the global financial architecture, arguing that "money flows readily to rich countries and not to the emerging and developing economies (EMDEs) that offer higher growth potential." The report urged that the FfD4 place GFA reform "at the top of the agenda."

Sustainable Development Goals (SDGs)

- The Sustainable Development Goals (SDGs) are a set of 17 global goals adopted by all United Nations (UN) member states in 2015 as part of the 2030 Agenda for Sustainable Development.
- These goals are a universal call to end poverty, protect the planet, and ensure prosperity and peace for all by 2030.

List of the 17 SDGs:

No Poverty

- End poverty in all its forms everywhere.

Zero Hunger

- End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.

Good Health and Well-being

- Ensure healthy lives and promote well-being for all at all ages.

Quality Education

- Ensure inclusive and equitable quality education and promote lifelong learning opportunities.

Gender Equality

- Achieve gender equality and empower all women and girls.

Clean Water and Sanitation

- Ensure availability and sustainable management of water and sanitation for all.

Affordable and Clean Energy

- Ensure access to affordable, reliable, sustainable, and modern energy.

Decent Work and Economic Growth

- Promote sustained, inclusive, and sustainable economic growth, full and productive employment.

Industry, Innovation and Infrastructure

- Build resilient infrastructure, promote sustainable industrialization, and foster innovation.

Reduced Inequalities

- Reduce inequality within and among countries.

Sustainable Cities and Communities

- Make cities and human settlements inclusive, safe, resilient, and sustainable.

Responsible Consumption and Production

- Ensure sustainable consumption and production patterns.

Climate Action

- Take urgent action to combat climate change and its impacts.

Life below Water

- Conserve and sustainably use the oceans, seas, and marine resources.

Life on Land

- Protect, restore, and promote sustainable use of terrestrial ecosystems.

Peace, Justice and Strong Institutions

- Promote peaceful and inclusive societies, access to justice, and effective institutions.

Partnerships for the Goals

- Strengthen the means of implementation and revitalize the global partnership for sustainable development.
    - **Adopted:** September 2015 at the UN Sustainable Development Summit.
    - **Target year:** 2030.
    - **Guiding Principle:** "Leave No One Behind."
    - **Global in Scope:** Applies to all countries—developed and developing.

2025 World Press Freedom Index

- The 2025 World Press Freedom Index, released by Reporters Without Borders (RSF), shows India at 151st place, an improvement from 159th in the previous year.

- While this signifies an upward movement, the report highlights that the improvement is marginal, and press freedom conditions in India still face significant challenges.
- For the first time since its inception in 2002, the world press freedom situation is rated as "difficult", not just "problematic"
- The global average score dropped to 54.7 (or about 55)—the lowest point yet
- RSF flags economic fragility as the primary threat: revenues are plunging, advertiser power rising, and public funding eroding

Key Indicators

- RSF assesses 180 countries on five metrics: political, legal, economic, sociocultural, and safety.

Notably:

- The economic indicator hit an all-time low globally, with 160 out of 180 countries struggling financially—media outlets are collapsing in over 30 nations
- Physical threats remain a concern, but it's the financial collapse that's the most insidious.

Regional & Country Insights

- Norway retains the 1st position and is one of only a few nations with consistently "good" ratings in all areas.
- Estonia rises to 2nd place, becoming a model of press freedom with strong legal protections and public funding
- Western Europe dominates the top 15. However, Germany fell from 10th to 11th due to economic stress and growing hostility toward journalists, especially amid right-wing violence.
- On the other end: China, North Korea, Syria, Eritrea, and Iran remain at the bottom with "very serious" media freedom violations

United States: Decline Continues

- The U.S. fell to 57th place—now rated "problematic"—its lowest mark ever.
- RSF points to a 14-place drop in the economic metric over two years, citing the collapse of local news, defunding of public media (Voice of America, NPR, USAID), and dominance of tech platforms.

QUESTIONS

17. What is the significance of the score on the SDG Index used in the Sustainable Development Report?

A. It shows fiscal strength of countries in relation to UN funding.

B. It measures geopolitical stability using a scale of 1 to 10.

C. It reflects the level of achievement of 17 SDGs on a 0–100 scale.

D. It ranks countries based on their carbon neutrality by 2030.

18. Despite topping the SDG Index, what are the key challenges faced by Nordic countries like Finland, Sweden, and Denmark?

A. Slow progress in healthcare infrastructure

B. Weak performance in education and gender equality

C. Significant challenges in climate and biodiversity goals

D. Lack of clean drinking water in rural areas

19. Consider the following statements:

1. India has, for the first time, secured a position among the top 100 countries in the Sustainable Development Goals (SDG) Index, ranking 99th out of 167 nations in the 2025 edition of the Sustainable Development Report (SDR).
2. The Sustainable Development Report (SDR) was released by the UN Sustainable Development Solutions Network.

Which of the statements given above is/are correct?

A. 1 Only
B. 2 Only
C. Both 1 and 2
D. Neither 1 nor 2

20. The 2030 Agenda for Sustainable Development was adopted by the United Nations General Assembly in which year and session?

A. 2015, Rio+20 Conference
B. 2015, 70th session of the UNGA
C. 2014, 69th session of the UNGA
D. 2015, UN Habitat III

7. Dharti Aaba Janbhagidari Abhiyan (DAJA)

- The Dharti Aaba Janbhagidari Abhiyan (DAJA) is a first-of-its-kind, large-scale tribal outreach campaign launched by the Government of India, led by the Ministry of Tribal Affairs, from June 15 to July 15, 2025.
- Named after Birsa Munda, the revered tribal freedom fighter known as Dharti Aaba (Father of the Earth), the campaign seeks to connect directly with over 5.5 crore tribal citizens across 1 lakh tribal villages, including PVTG habitations in over 550 districts across 31 States and UTs.

- DAJA is more than a welfare drive—it is a movement celebrating inclusion, culture, and dignity for tribal communities. The campaign delivers essential services such as Aadhaar enrollment, Ayushman Bharat health cards, Ujjwala gas connections, Jan Dhan accounts, PM-KISAN benefits, pensions, nutrition schemes, legal aid, and tribal start-up support through 22,000+ empowerment camps functioning as one-window service hubs.
- So far, the campaign has reached over 53 lakh tribal citizens, with:
  - 1.38 lakh Aadhaar registrations
  - 1.68 lakh Ayushman Bharat cards issued
  - 46,000+ PM-KISAN registrations
  - 22,000+ Ujjwala Yojana beneficiaries
  - 32,000+ Jan Dhan accounts opened

DAJA is structured around five strategic pillars:

- **Janbhagidari** – community leadership and participation
- **Saturation** – ensuring no eligible household is left behind
- **Cultural Inclusion** – integrating tribal languages and traditions
- **Convergence** – multi-agency coordination (ministries, CSOs, youth groups)
- **Last-Mile Delivery** – reaching remote and underserved areas
- Prominent leaders including FM Nirmala Sitharaman, Governors, and CMs of states like Assam, Maharashtra, Andhra Pradesh, and Kerala have actively launched and promoted the initiative.
- Cultural festivals, cuisine shows, handicraft exhibitions, and folk performances have further enriched the campaign, promoting tribal pride and heritage.
- Over 3,000 blocks and 700 tribal communities, including all 75 PVTGs, are participating. Youth organisations like MY Bharat and NSS have mobilised volunteers to support camp operations and awareness.
- The Ministry has appealed to all citizens—especially students, volunteers, and media—to contribute by attending camps, spreading awareness, and documenting tribal stories to amplify their voices.
- DAJA represents a landmark in inclusive governance, grassroots empowerment, and the celebration of India's tribal legacy.

Bhagwan Birsa Munda

- Bhagwan Birsa Munda (15 November 1875 – 9 June 1900) was a revered tribal freedom fighter, folk hero, and religious leader who played a vital role in the Indian independence movement, particularly in the tribal regions of present-day Jharkhand, Bihar, Odisha, Madhya Pradesh, and West Bengal.
- He is considered a God-like figure among tribal communities, especially the Munda tribe, and is often referred to as "Dharti Aaba" or "Father of the Earth".

Key Contributions & Legacy:

1. Leader of the Ulgulan (Rebellion):

- Birsa led the Ulgulan (meaning "Great Tumult" or rebellion) against British colonial rule and exploitative landlords.
- He aimed to establish Munda Raj and eliminate feudal practices, forced labour (begar), and interference in tribal culture.

2. Religious and Social Reformer:

- Preached a monotheistic faith and challenged the influence of Christian missionaries and Hindu landlords.
- Opposed conversions and encouraged tribals to return to their traditional beliefs.
- Advocated for purity, simplicity, and unity among the tribal communities.

3. Impact on Land Rights:

- His movement pressured the British to enact the Chotanagpur Tenancy Act (1908) after his death.
- This law protected tribal land rights and restricted land transfers to non-tribals.

Death and Martyrdom:

- Arrested by the British in March 1900.
- Died mysteriously in Ranchi Jail on 9 June 1900 at the young age of 25.
- The official reason given was cholera, but many believe he was murdered.

Honours and Remembrance

- Birsa Munda Jayanti is observed every year on 15 November as a state holiday in many Indian states.
- Jharkhand was carved out of Bihar on 15 November 2000, marking his birth anniversary.
- He is the only tribal leader whose portrait hangs in the Indian Parliament's Central Hall.
- Statues, airports (Birsa Munda Airport, Ranchi), universities, and institutions across India are named after him.
- In 2021, the Government of India declared 15 November as Janjatiya Gaurav Divas (Tribal Pride Day) in his honour.

Major Indian Tribal Movement in Independence Movement

- During India's independence movement, numerous tribal uprisings played a vital role in resisting British colonial rule and exploitative policies.
- These movements were largely driven by tribal communities' desire to protect their land, culture, and autonomy.

Below are some of the major tribal movements that significantly contributed to the freedom struggle:

1. Santhal Rebellion (1855–1856)

- **Leaders:** Sidhu and Kanhu Murmu
- **Region:** Present-day Jharkhand (Santhal Parganas)
- **Cause:** Oppression by British revenue officials, moneylenders, and zamindars.
- **Outcome:** Though suppressed, it led to the creation of a separate district — Santhal Parganas.

2. Munda Rebellion (1899–1900)

- **Leader:** Birsa Munda
- **Region:** Chotanagpur plateau (Jharkhand)
- **Cause:** Exploitation by landlords and missionaries; loss of tribal land.
- **Impact:** Led to the Chotanagpur Tenancy Act, 1908, which prohibited land transfer from tribals to non-tribals.

3. Rampa Rebellion (1922–1924)

- **Leader:** Alluri Sitarama Raju
- **Region:** Andhra Pradesh (Godavari Agency)
- **Cause:** British restrictions on tribal shifting cultivation and movement in forests.
- **Nature:** Armed guerrilla warfare against British forces.
- **Legacy:** Raju was martyred in 1924, and he became a folk hero.

4. Bhil Revolt (multiple phases: 1818, 1913, 1920s)

- **Leaders:** Govind Guru (in 1913)
- **Region:** Rajasthan, Madhya Pradesh, Gujarat
- **Cause:** Feudal oppression, British forest policies, and taxation.
- **Special mention:** Mangadh massacre (1913) where over 1,500 Bhils were killed by British troops.

5. Kol Rebellion (1831–1832)

- **Region:** Chotanagpur (Jharkhand)
- **Cause:** Invasion of outsiders, land alienation, and tax collection by the British.
- **Tribes involved:** Ho, Munda, Oraon, Kol

6. Tana Bhagat Movement (1914–1920s)

- **Leaders:** Jatra Bhagat
- **Region:** Bihar and Jharkhand
- **Tribe:** Oraon
- **Cause:** Social reform, rejection of taxes, and adoption of non-violent resistance inspired by Gandhi.
- **Nature:** Combined tribal traditions with Gandhian ideology.

7. Koya Revolt (1858, 1861, 1862, 1879–80)

- **Region:** Andhra Pradesh and Odisha
- **Tribe:** Koya
- **Cause:** Oppression by zamindars and British forest laws.

8. Khasi and Garo Uprisings (1820s–1830s)

- **Region:** Meghalaya
- **Cause:** British expansion and road construction through tribal lands.
- **Leader:** Tirot Singh (Khasi Chief)

9. Chuar Rebellion (1769–1799)

- **Region:** Bengal (Midnapore, Bankura)
- **Tribes:** Chuar (sub-group of Bhumij)
- **Cause:** Heavy revenue demands and loss of forest rights.

10. Gond Uprisings (multiple instances)

- **Region:** Central India (Madhya Pradesh, Chhattisgarh)
- **Cause:** Loss of autonomy and oppressive land revenue policies.
- **Notable leader:** Rani Durgavati, though earlier (16^{th} century), symbolizes early tribal resistance.

21. Which of the following is a key objective of the Dharti Aaba Janbhagidari Abhiyan (DAJA)?

A. To provide free education to tribal communities across India.

B. To celebrate tribal culture and dignity while ensuring the delivery of essential services.

C. To establish new tribal states across India.

D. To increase the number of tribal representation in Parliament.

22. Which of the following was a major consequence of the Munda Rebellion (1899-1900) led by Birsa Munda?

A. Formation of the Chotanagpur Tenancy Act, 1908, protecting tribal land rights.

B. Creation of the Ranchi district, where Birsa was martyred.

C. Introduction of Gandhian principles among the tribals of Jharkhand.

D. Increase in British military presence in the tribal regions of India.

23. The Bhil Revolt (1913) is historically significant because it highlighted which of the following?

A. The need for a separate tribal homeland within India.

B. The feudal oppression of tribal communities under British rule and Zamindars.

C. The influence of Gandhian non-violent resistance among tribals.

D. The establishment of tribal schools in protest of British educational policies.

24. Which of the following is the primary reason for the Tana Bhagat Movement?

A. Land alienation and exploitation by non-tribals.

B. Resistance to forced labour (begar) and taxation policies.

C. Social reform and adoption of non-violence inspired by Gandhi.

D. Rejection of conversion and encouragement to return to traditional beliefs.

25. With reference to the history of India, ‘Ulgulan’ or ‘the Great Tumult’ is led by?

A. Bakshi Jagabandhu

B. Alluri Sitaramaraju

C. Sidhu and Kanhu Murmu

D. Birsa Munda

26. After the Santhal Uprising subsided, what were the measures taken by the colonial government?

1. The territories called 'Santhal Parganas' were created.
2. It became illegal for a Santhal to transfer land to a non-Santhal.

Select the correct answer using the code given below:

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

27. Which amongst the following provided a common factor for tribal insurrection in India in the 19th century?

A. Introduction of a new system of land revenue and taxation of tribal products

B. Influence of foreign religious missionaries in tribal areas

C. Rise of a large number of money lenders, traders, and revenue farmers as middlemen in tribal areas

D. The complete disruption of the old agrarian order of the tribal communities

8. Statistics ministry to conduct first-ever household income survey in 2026

- The Ministry of Statistics and Programme Implementation (MoSPI) will conduct India's first-ever Household Income Survey in 2026 to comprehensively assess household income and the impact of technology on wages.
- This marks a major initiative in understanding income distribution and structural economic shifts in India over the past 75 years.
- A Technical Expert Group (TEG), chaired by economist Surjit Bhalla, has been constituted to guide MoSPI on survey design, methodology, estimation techniques, and adoption of global best practices.
- Historically, India has struggled to implement a national household income survey.
- Experimental efforts began in the 1950s and continued through the 1960s and 1980s, including attempts within consumer expenditure and integrated household surveys.
- However, these were abandoned due to reliability issues—most notably, reported incomes often appeared lower than the sum of consumption and savings, rendering the data inconsistent.
- MoSPI emphasized the urgent need for dedicated income data, citing significant economic transformations and persistent data gaps.

- The upcoming survey is part of a broader statistical modernization effort by MoSPI and the National Sample Survey (NSS), which has introduced new tools to capture diverse socio-economic trends in India.
- The expert group features distinguished economists and statisticians such as Aloke Kar (former professor, Indian Statistical Institute), Sonalde Desai (NCAER), Praveen Jha (JNU), Srijit Mishra (University of Hyderabad), Tirthankar Patnaik (Chief Economist, NSE), Rajesh Shukla (MD & CEO, People Research on India's Consumer Economy), and Ram Singh (Director, Delhi School of Economics, and RBI Monetary Policy Committee member). The group's responsibilities include finalizing definitions, refining survey instruments, advising on sampling design, and vetting the final report for public release.
- In recent years, MoSPI has expanded its survey scope beyond traditional GDP and inflation metrics to include unincorporated enterprises, services, tourism, and capital expenditure.
- Notably, it launched the monthly Periodic Labour Force Survey (PLFS), which includes data on passive incomes such as rent and pensions, though those specific findings are yet to be published.
- Upcoming MoSPI releases include the Annual Survey of Industries 2023–24 and Household Social Consumption: Health, further signaling the ministry's ongoing efforts to strengthen India's statistical foundation for policy and planning.

Household surveys across world

- Household surveys are a primary means by which governments and international organizations collect data on demographics, income, health, education, employment, and living conditions.
- While the structure and frequency of these surveys vary, most countries conduct them regularly to inform policy, monitor poverty, and track development indicators.

Global/Multinational Surveys

World Bank –

- Living Standards Measurement Study (LSMS)
- Used in over 40 developing countries
- Tracks income, consumption, health, education, and employment
- Country-specific but with a harmonized methodology

Demographic and Health Surveys (DHS)

- Conducted in 90+ countries
- Focus on population, health, family planning, and nutrition
- Sponsored by USAID

Multiple Indicator Cluster Surveys (MICS) – by UNICEF

- Conducted in 100+ low- and middle-income countries
- Covers health, education, child protection, and water/sanitation

North America

United States

- Current Population Survey (CPS) – Monthly (income, employment)
- American Community Survey (ACS) – Annual (demographics, housing)
- Consumer Expenditure Survey (CE) – Income and spending behavior

- Survey of Income and Program Participation (SIPP) – Income dynamics

Canada

- Canadian Income Survey (CIS) – Income, earnings, and poverty
- General Social Survey (GSS) – Social trends and well-being
- Labour Force Survey (LFS) – Monthly employment and labor data

Europe

- European Union (EU countries)
- EU Statistics on Income and Living Conditions (EU-SILC)
- Harmonized data on income, poverty, and social exclusion
- Labour Force Survey (EU-LFS) – Employment data across member states

United Kingdom

- Understanding Society (UK Household Longitudinal Study)
- Tracks income, work, health, education, and social attitudes
- Family Resources Survey (FRS) – Focus on income and benefits

Asia

India

- National Family Health Survey (NFHS) – Health, population, and nutrition
- Periodic Labour Force Survey (PLFS) – Employment and unemployment
- Household Consumption Expenditure Survey (HCES) – Income and expenditure
- Household Income Survey (proposed, 2026) – First attempt at direct income measurement

China

- China Family Panel Studies (CFPS) – Income, education, and family dynamics
- Urban Household Survey (UHS) – Consumption, income, and labor
- Rural Household Survey (RHS) – Agriculture and rural economy

Japan

- Comprehensive Survey of Living Conditions – Health, income, housing
- National Survey of Family Income and Expenditure – Detailed income and consumption

Africa

- Integrated Household Surveys (IHS) – e.g., Malawi, Ethiopia, Kenya
- Living Conditions Monitoring Survey (LCMS) – Zambia
- Kenya Integrated Household Budget Survey (KIHBS) – Income, consumption, and poverty
- Nigeria General Household Survey (GHS) – Agriculture, income, health

Latin America

Brazil

- Pesquisa Nacional por Amostra de Domicílios (PNAD) – Labor, income, education
- Pesquisa de Orçamentos Familiares (POF) – Income and expenditures

Mexico

- Encuesta Nacional de Ingresos y Gastos de los Hogares (ENIGH) – Income and expenditures
- Encuesta Nacional de Ocupación y Empleo (ENOE) – Labor market

Oceania

Australia

- Household Income and Wealth Survey (HILDA) – Panel data on income, health, and employment
- Survey of Income and Housing (SIH) – Income distribution and housing costs

New Zealand

- Household Economic Survey (HES) – Income, expenditure, and assets

QUESTIONS

28. Which of the following statements accurately describes the upcoming Household Income Survey being conducted by the Ministry of Statistics and Programme Implementation (MoSPI) in 2026?

A. The survey aims to assess household income and wages, with a focus on the impact of digitalization on income distribution.

B. It is a continuation of experimental efforts from the 1950s and will focus on consumption patterns and savings rather than income levels.

C. The survey is being led by the National Sample Survey (NSS) team with a focus only on rural areas of India.

D. The survey will be a replacement for the existing Periodic Labour Force Survey (PLFS) and will no longer track consumption data.

29. Why did the Ministry of Statistics and Programme Implementation (MoSPI) decide to conduct a dedicated Household Income Survey despite historical challenges with income data collection?

A. The failure of the National Income Accounting system to capture income and consumption trends prompted this survey.

B. The need for better data on income gaps, particularly due to the rapid changes in economic structures in India, and the increasing digitalization of the economy.

C. The collapse of traditional consumption surveys led to the creation of a new income-focused survey by MoSPI.

D. The inconsistent data from the Periodic Labour Force Survey (PLFS) was deemed insufficient for economic policy decisions, prompting the new survey.

30. The Living Standards Measurement Study (LSMS) conducted by the World Bank is similar to the Household Income Survey in that it:

A. Primarily focuses on tracking healthcare expenditure across countries and is mostly relevant to developed nations.

B. Collects demographic data and aims to improve income distribution without considering technological impacts on wages.

C. Is a multinational survey used in over 40 countries and tracks variables like income, education, health, and employment, similar to India's Household Income Survey.

D. Is designed specifically for tracking rural income and does not include urban income data or information about technological impact.

9. QS Rankings 2026

- India has achieved its highest-ever representation in the QS World University Rankings 2026, with 54 institutions making it to the list.
- This milestone places India as the fourth most represented nation globally-behind only the US, the UK, and China. Among these, several Indian universities and institutes have stood out in employment outcomes, a key metric that evaluates graduate employability and alumni success.
- Topping the list is the University of Delhi, which, despite an overall rank of 328, scored an impressive 98.9 in employment outcomes-the highest among Indian institutions.
- However, its employer reputation score stands at a modest 41.9.
- IIT Bombay, ranked 129 globally, follows closely with the highest employer reputation score among Indian institutions at 96.7, and an employment outcomes score of 72.6.
- IIT Delhi, ranked 123 globally-its best-ever performance-also features in the top three.
- It earned an employment outcomes score of 50.5, along with a strong 95 in employer reputation, reflecting its growing appeal among global recruiters.
- Massachusetts Institute of Technology (MIT) has once again claimed the top spot in the QS World University Rankings 2026, reaffirming its position as the world's leading academic institution.
- Imperial College London emerged as the second-best university globally, marking a significant rise in its standing.
- The London-based institution scored an impressive 99.4 out of 100, placing it ahead of traditionally dominant names like Stanford University, Harvard University, and the University of Oxford.

Top 10 Indian Institutes Based On Employment Outcomes:

- University of Delhi - Employment Outcomes: 98.9
- IIT Bombay - Employment Outcomes: 72.6
- IIT Delhi - Employment Outcomes: 50.5
- IIT Kharagpur - Employment Outcomes: 47.7
- IIT Kanpur - Employment Outcomes: 47.6
- IIT Madras - Employment Outcomes: 45.8
- IIT Roorkee - Employment Outcomes: 19.5
- Anna University - Employment Outcomes: 17.8
- Indian Institute of Science (IISc) Bangalore - Employment Outcomes: 15.1
- IIT Guwahati - Employment Outcomes: 8.7

Global Ranks of the Institutes:

- IIT Delhi - Rank 123
- IIT Bombay - Rank 129
- IIT Madras - Rank 180
- IIT Kharagpur - Rank 215
- IISc Bangalore - Rank 219
- IIT Kanpur - Rank 222
- University of Delhi - Rank 328
- IIT Guwahati - Rank 334
- IIT Roorkee - Rank 339
- Anna University - Rank 465

QS World University Rankings: Origin, Purpose, and Importance

Origin

- Launched in 2004 by Quacquarelli Symonds (QS), a British company specializing in education and study abroad.
- Initially created in collaboration with Times Higher Education (THE) as THE–QS World University Rankings.

In 2010, QS and THE split:

- QS continued with its own methodology under QS World University Rankings.
- THE partnered with Thomson Reuters to publish THE World University Rankings independently.

Purpose

The QS World University Rankings aim to:

- Provide global benchmarks for comparing universities based on academic and employer reputation, research output, and teaching quality.

- Help students (especially international students) make informed choices about higher education institutions.
- Guide policymakers and universities in understanding global performance and improving academic standards.
- Promote international competitiveness among universities.

Importance

For Students:

- Offers a comparative tool for choosing universities across countries and disciplines.
- Highlights universities with global academic and employer reputation.
- Facilitates decisions about study destinations, scholarships, and future career prospects.

For Universities:

- Helps in benchmarking their performance globally.
- Drives strategic planning, internationalization, and academic reforms.
- Enhances visibility and prestige among prospective students, faculty, and research partners.

For Governments and Employers:

- Aids in assessing the quality of higher education institutions for partnerships, funding, or hiring.
- Encourages investment in education and research by showing international standing.

QS Ranking Indicators (as of 2025 methodology)

Indicator	Weight
Academic Reputation	30%
Employer Reputation	15%
Faculty/Student Ratio	10%
Citations per Faculty	20%
International Faculty Ratio	5%
International Student Ratio	5%
International Research Network	5%
Employment Outcomes	5%
Sustainability (New)	5%

QUESTIONS

31. Which of the following Indian universities achieved the highest employment outcomes score in the QS World University Rankings 2026?

A. Indian Institute of Technology (IIT) Bombay

B. Indian Institute of Technology (IIT) Delhi

C. University of Delhi

D. Indian Institute of Science (IISc) Bangalore

32. Which of the following factors is NOT part of the QS World University Rankings evaluation criteria?

A. Academic reputation

B. Employer reputation

C. Social impact of research

D. Research output

10. Green India Mission

- The Union Government released a revised roadmap for the National Mission for Green India, also known as the Green India Mission.
- In addition to the core objectives of increasing and restoring forest and green cover, the mission will focus on restoration in the Aravalli ranges, Western Ghats, Himalayas and mangroves.
- Union Environment Minister Bhupender Yadav released the revised document for 2021-2030 periods at Jodhpur at an event marking the World Day to Combat Desertification and Drought.
- In this context, let's know about the Green India Mission (GIM) and understand land degradation and desertification.

Key Takeaways:

- The National Mission for a Green India or GIM was launched in 2014 as one of the eight missions under India's National Action Plan on Climate Change (NAPCC).
- Its main objective is to combat climate change by increasing forest and tree cover, and the ecological restoration of degraded ecosystems and forests.
- It also aims to improve the livelihoods of communities dependent on forest produce.

- One of the core objectives of the mission was to increase forest and tree cover on 5 million hectares and improve the quality of forest cover on another 5 million hectares.
- The activities under GIM are concentrated in states based on mapping of ecological vulnerability, potential for sequestration (the process by which plants and trees store carbon using photosynthesis), forest and land degradation, and restoration potential.
- In the revised GIM plan, a central focus will be on the restoration and saturation of vulnerable landscapes through regionally conducive best practices.
- It will include area and landscape-specific restoration activities in three important mountain ranges – the Aravallis, the Western Ghats, and the Indian Himalayas, along with the mangrove ecosystems.
- For example, GIM interventions will be synced with the Centre's recently launched Aravalli Green Wall project.
- The revised mission document also projected, based on estimates of the Forest Survey of India (FSI), that India could achieve a carbon sink of 3.39 billion tonnes, from the combination of all restoration activities.
- This will require an increase in forest and tree cover over an estimated 24.7 million hectares.

Land degradation and its causes

- Land Degradation refers to the decline in the quality, productivity, and health of land due to various natural and human-induced factors. It impacts soil fertility, biodiversity, water resources, and the ability of land to support agriculture and natural ecosystems.

Causes of Land Degradation

- Land degradation results from both natural processes and human activities. The major causes include:

1. Deforestation

- Removal of forests exposes soil to erosion.
- Reduces organic matter and disrupts water cycles.
- Common in areas cleared for agriculture, urbanization, or logging.

2. Overgrazing

- Excessive grazing by livestock damages vegetation.
- Leads to soil compaction, erosion, and reduced water infiltration.

3. Unsustainable Agriculture

- Monoculture, excessive use of chemical fertilizers and pesticides.
- Improper irrigation practices lead to salinization and waterlogging.
- Slash-and-burn and shifting cultivation can harm long-term soil health.

4. Urbanization and Infrastructure Development

- Construction replaces fertile land with concrete.
- Reduces vegetation cover, increases surface runoff, and leads to erosion.

5. Soil Erosion

- Caused by wind, water, or tillage.
- Leads to the loss of topsoil, the most fertile layer.

6. Mining Activities

- Strip mining and quarrying remove vegetation and topsoil.
- Leave land barren and polluted with heavy metals and chemicals.

7. Climate Change

- Increases in droughts, floods, and extreme weather events accelerate degradation.
- Alters precipitation patterns and impacts vegetation growth.

8. Industrial Waste and Pollution

- Dumping of chemicals and solid waste contaminates soil.
- Reduces soil fertility and harms microorganisms essential for soil health.

9. Salinization

- Occurs due to excessive irrigation in arid areas.
- Accumulation of salts in soil reduces crop yields.

Consequences of Land Degradation

- Reduced agricultural productivity.
- Increased food insecurity.
- Loss of biodiversity.
- Desertification.
- Displacement of populations and rural poverty.

Land desertification

- Land desertification is the process by which fertile land becomes desert, typically as a result of climate change, deforestation, overgrazing, and unsustainable agricultural practices.
- It is a serious environmental problem affecting ecosystems, agriculture, and the livelihoods of millions of people, especially in arid, semi-arid, and dry sub-humid regions.

Causes of Land Desertification

- **Deforestation** – Cutting down trees reduces soil stability and water retention.
- **Overgrazing** – Excessive grazing by livestock strips vegetation cover.
- **Unsustainable farming** – Poor irrigation, over-cultivation, and monocropping exhaust soil nutrients.
- **Urbanization & infrastructure development** – Converts natural land to impervious surfaces.
- **Climate change** – Increased droughts, temperature, and erratic rainfall worsen land degradation.

Impacts of Desertification

- Loss of arable land and declining agricultural productivity.

- Food and water insecurity for affected populations.
- Biodiversity loss as ecosystems collapse.
- Forced migration and conflicts over natural resources.
- Dust storms and air pollution.

Solutions and Mitigation

- **Reforestation & afforestation** – Planting trees to restore vegetation.
- **Soil conservation techniques** – Contour plowing, terracing, and cover crops.
- **Sustainable grazing** – Rotational grazing to preserve grasslands.
- **Water management** – Efficient irrigation, rainwater harvesting.
- **Policy frameworks** – Enforcement of land use regulations and support to local communities.
- **Education & awareness** – Teaching farmers sustainable practices.

Global Response

- United Nations Convention to Combat Desertification (UNCCD) is the main international body addressing desertification.
- World Day to Combat Desertification and Drought is observed every June 17.

QUESTIONS

33. Which of the following is NOT a core objective of the Green India Mission (GIM) as per the revised roadmap for the period 2021-2030?

A. Restoration of the Aravalli and Western Ghats ecosystems
B. Increase in forest and tree cover on 5 million hectares
C. Establishment of new coal-fired power plants for energy production
D. Improvement of livelihoods of communities dependent on forest produce

34. Which of the following is a significant consequence of land desertification?

A. Improvement in agricultural productivity
B. Decreased food and water insecurity
C. Loss of biodiversity and increased migration
D. Increase in forest cover in arid regions

35. Which of the following international frameworks is most closely associated with the fight against land desertification and drought globally?

A. The United Nations Framework Convention on Climate Change (UNFCCC)
B. The United Nations Convention to Combat Desertification (UNCCD)
C. The Kyoto Protocol
D. The Paris Agreement

ANSWER KEY AND EXPLANATION

1. B Austria is neutral and has remained non-aligned since the end of World War II. It does not seek NATO membership and is not part of the alliance. Bulgaria became a member of NATO in 2004. It joined the alliance following the end of the Cold War as part of NATO's expansion into Eastern Europe. Croatia became a NATO member in 2009. It joined NATO after a series of reforms and alignment with Western institutions following its independence in the 1990s. Serbia is not a NATO member. Sweden is a latest NATO member. North Macedonia joined NATO in 2020, after resolving its long-standing name dispute with Greece.

2. D The Canada-EU defence agreement is designed to diversify Canada's global partnerships and reduce over-reliance on the U.S., particularly in the wake of uncertainties regarding U.S. foreign policy under President Trump. The security pact allows Canada to participate in the EU's Strategic Technologies for Europe Platform (Safe), which includes joint defence procurement, emphasizing EU-Canada collaboration and the strengthening of transatlantic ties rather than focusing solely on NATO or the U.S. military alliance.

3. B The primary reason for the admission of Finland and Sweden into NATO was to counter Russian aggression, especially in the wake of Russia's invasion of Ukraine in 2022. The inclusion of Finland (in 2023) and Sweden (in 2024) strengthens NATO's eastern flank and provides better security coverage for the Baltic states. Their inclusion also enhances NATO's military readiness against further threats from Russia, as both countries share borders with Russia and have a historical concern about Russian expansionism.

4. D June 21 was chosen as the International Day of Yoga because it is the Summer Solstice, the longest day of the year in the Northern Hemisphere. This day symbolizes harmony between nature and human wellness, aligning with the essence of Yoga.

5. B The theme for International Day of Yoga 2025 is "Yoga for One Earth, One Health". This theme aligns yoga with the broader goals of sustainability and global well-being, emphasizing the interconnectedness of human health and the health of the planet. The focus is on how yoga can contribute to promoting environmental sustainability while also enhancing individual and collective well-being on a global scale. This theme reflects the growing global movement toward holistic health and environmental harmony.

6. C The United Nations proclaimed June 21 as the International Day of Yoga on December 11, 2014, following a proposal made by India and endorsed by a record 175 member states. Prime Minister Narendra Modi first introduced the proposal for the International Day of Yoga during his address at the 69th session of the UN General Assembly on September 27, 2014. His initiative was later endorsed by 175 UN member states.

7. C The Nallamala Forest is part of the Eastern Ghats, a dense, ecologically rich forest that spans across both Andhra Pradesh and Telangana. This region is vital for biodiversity conservation and has several important wildlife sanctuaries. It is not part of the Western Ghats, which are located along the western coast of India, and the Sundarbans are in the Ganges Delta, far removed from this region.

8. B The Western Ghats are known for their high biodiversity, making them a UNESCO World Heritage Site. They are a continuous mountain range that runs along the western coast of India, from Maharashtra to Kerala, and act as a climatic barrier, causing orographic rainfall. In contrast, the Eastern Ghats are more discontinuous and less biodiverse than the Western Ghats.

9. B The Banakacherla project aims to divert water from the Godavari River to the Krishna River, and eventually to the Banakacherla reservoir in Andhra Pradesh. This water transfer plan seeks to address the water scarcity issues in the drought-prone Rayalaseema region of Andhra Pradesh. The project plans to increase the capacity of the Polavaram Right Main Canal to carry Godavari water to the Krishna River.

10. B The Democratic Republic of Congo (DRC) is rich in minerals like cobalt, copper, and tantalum, which are crucial for electronics and other high-tech industries. China has been one of the largest investors in Congo's mining sector, operating refineries for cobalt, which accounts for the majority of the global supply. China's involvement in Congo's minerals sector has often been contentious, with accusations of exploitation and unfair labor practices.

11. B The increase in India's coastline from 7,516 km to 11,098 km (an increase of 3,582 km) is primarily due to the use of higher resolution data and the use of modern GIS (Geographical Information System) software. This technology allowed for more accurate measurements, capturing the coastline's irregularities more effectively. This is a case of improved precision, not the result of territorial acquisition or natural processes like erosion.

12. A The coastline paradox states that the length of a coastline is not a fixed value, as it depends on the scale of resolution used for its measurement. A higher resolution (such as 1:250,000 scale) captures the intricate details, including the bends and curves, whereas a lower resolution (1:4,500,000) smooths out those irregularities, thus producing a shorter measurement. This paradox also applies to other natural features, such as river networks and mountain ranges, which are equally difficult to measure with precision.

13. D The Andaman & Nicobar Islands have the longest coastline in India, with a total length of 3,083.50 km. This is followed by Gujarat with a coastline length of 2,340.62 km, making Gujarat the second longest. Tamil Nadu and Andhra Pradesh follow with coastlines of 1,068.69 km and 1,053.07 km, respectively. The Andaman & Nicobar Islands are a Union Territory, and their extensive coastline is due to their multiple islands scattered across the Bay of Bengal.

14. C Pondicherry (also known as Puducherry) has the shortest coastline in India, measuring only 42.65 km. This is significantly shorter than other coastal states like Goa (193.95 km) and Kerala (600.15 km). The small size of Pondicherry's coastline is due to its relatively small land area, which includes coastal territories in the Bay of Bengal.

15. D Small Modular Reactors (SMRs) are designed to be compact, scalable, and flexible. They are ideal for remote or smaller locations, making them suitable for deployment in areas where traditional nuclear plants may not be feasible. The modular design also allows for multiple units to be added over time to meet increasing energy demand, with a lower upfront cost and shorter construction time. Unlike larger plants, SMRs are not designed for higher capacity but offer enhanced safety and efficiency for smaller grids or specialized applications like hydrogen production.

16. A India's focus on establishing Small Modular Reactors (SMRs) in Bihar serves to reduce reliance on fossil fuels and diversify the energy mix by incorporating cleaner energy sources such as nuclear power. Given the growing energy demand and environmental concerns, this initiative plays a role in sustainable development and energy diversification, helping India achieve climate targets. Although there are broader geopolitical implications, such as regional energy security, the primary goal of setting up SMRs in Bihar is to reduce dependence on fossil fuels and move towards cleaner energy sources.

17. C The SDG Index score ranges from 0 to 100, where 100 means all 17 SDGs have been fully achieved, and 0 means no progress. India scored 67, while top countries like Finland scored higher (above 85).

18. C While Nordic countries lead globally in overall SDG performance, they struggle particularly with goals related to climate change and biodiversity, due to unsustainable consumption patterns.

19. C India has, for the first time, secured a position among the top 100 countries in the Sustainable Development Goals (SDG) Index, ranking 99th out of 167 nations in the 2025 edition of the Sustainable Development Report (SDR), released by the UN Sustainable Development Solutions Network. The latest report places India with a score of 67 on the SDG Index, a significant improvement from its 109th rank in 2024.

20. B The SDGs were adopted on 25 September 2015 during the 70th session of the UN General Assembly.

21. B The Dharti Aaba Janbhagidari Abhiyan (DAJA) focuses on promoting tribal culture and dignity, alongside providing essential services like Aadhaar enrollment, Ayushman Bharat health cards, Ujjwala gas connections, Jan Dhan accounts, and PM-KISAN benefits to tribal communities. It is a significant campaign aimed at inclusive governance, empowerment, and addressing the needs of tribal citizens across India.

22. A The Munda Rebellion (1899-1900), led by Birsa Munda, pressured the British government to pass the Chotanagpur Tenancy Act (1908). This Act protected tribal land rights and restricted the transfer of land from tribals to non-tribals. The rebellion, which aimed to eliminate feudal practices, forced labour, and protect tribal land, left a lasting impact on tribal autonomy.

23. B The Bhil Revolt (1913) was led by Govind Guru and was largely in response to feudal oppression under the British and local zamindars. The Bhil tribals of Rajasthan and Madhya Pradesh were protesting against oppressive taxation, the loss of land rights, and forced labour. The revolt marked one of the significant tribal uprisings in the early 20th century.

24. C The Tana Bhagat Movement (1914-1920s) was led by the Oraon tribe in Bihar and Jharkhand and was inspired by Gandhian principles of non-violence and social reform. The movement focused on rejecting taxes and social reforms, including rejection of forced labour and land alienation. It was non-violent and sought to integrate Gandhian ideals with tribal traditions, leading to a blend of tribal autonomy and nationalist resistance.

25. D The Ulgulan, or the Great Tumult, refers to the Munda Rebellion of 1899-1900, led by Birsa Munda, a revered tribal leader and freedom fighter. The rebellion was against British colonial rule and the exploitation of tribals by feudal landlords, as well as missionary interference. Birsa Munda sought to restore tribal autonomy, protect tribal lands, and reassert the Munda tribal identity. This rebellion was

pivotal in shaping the tribal resistance movements in India and laid the foundation for the later social and political movements among the tribal communities. The Munda Rebellion was ultimately suppressed, but it significantly influenced Indian tribal and independence movements.

26. C After the Santhal Rebellion (1855–1856), the colonial British government took significant measures to restore order and prevent further uprisings. Two key measures included: Creation of Santhal Parganas: The British created the Santhal Parganas, a separate district to manage the Santhal tribal community and their lands, in response to the rebellion. This area was considered to be part of the British administration's strategy to exert more control over the tribe and address grievances related to land alienation and exploitation by zamindars and moneylenders. Land Protection: The British passed laws to restrict the sale of land from Santhals to non-tribals, aiming to protect tribal land rights and reduce economic exploitation by outsiders. This also sought to prevent further land alienation, which was one of the main causes of the uprising. Thus, the answer to the question is both measures being implemented, so the correct choice is (c) Both 1 and 2.

27. D The 19th century saw multiple tribal uprisings in India, many of which were triggered by a combination of social, economic, and political factors. The tribal communities in India had an agrarian way of life, where they depended on their traditional practices of cultivation and living off the land. The British colonial policies, including land revenue systems, the imposition of taxes, and changes to the tribal land ownership system, led to the disruption of the old agrarian order. This alienation from land, exploitation by zamindars (landlords), and the introduction of foreign revenue farming practices resulted in tribal unrest and resistance. The other options, though contributing to tribal tensions, were not as central to the widespread uprisings. The influence of missionaries (option b) or the rise of middlemen (option c) were contributing factors but not the main ones. The core reason for tribal uprisings was the economic disruption caused by colonial exploitation and changes to land tenure systems. Hence, the correct answer is (d) The complete disruption of the old agrarian order of the tribal communities.

28. A The Household Income Survey in 2026 aims to comprehensively assess household income and analyze the impact of technology on wages and income distribution across the country. This survey is an important initiative by the Ministry of Statistics and Programme Implementation (MoSPI) to fill the existing gaps in income data, especially considering the major economic transformations in India. The survey's focus is not just on traditional income metrics but will also highlight how technological advancements are affecting wages and income distribution. The goal is to provide data to inform policy decisions regarding income disparities and economic growth.

29. B The Household Income Survey has been launched primarily to address the gaps in income data, especially in the context of economic changes and the rapid digitalization of India’s economy. MoSPI has emphasized the urgent need for more reliable income data to track how these changes affect income distribution. While previous surveys did not offer reliable income data, particularly due to issues like underreporting of incomes or mismatches between income, consumption, and savings, this survey aims to fill that gap by focusing specifically on income and its impact on wages, consumption, and technology.

30. C The Living Standards Measurement Study (LSMS) conducted by the World Bank is a multinational survey used in over 40 developing countries. Similar to the Household Income Survey, the LSMS

tracks variables like income, education, health, and employment to assess living standards and socioeconomic trends. It is important because it uses harmonized methodology across various countries, making it similar to India's Household Income Survey. This type of survey provides valuable data for improving economic policy, addressing income inequalities, and understanding the impact of broader economic trends, including technological advancements on wages and employment.

31. C The University of Delhi has achieved the highest employment outcomes score among Indian institutions in the QS World University Rankings 2026. It scored an impressive 98.9 in employment outcomes, highlighting its success in placing graduates and alumni in competitive job markets. Although its overall rank was 328, it topped the list for employment outcomes in India, which evaluates graduate employability and alumni success. This score reflects the institution's strong connections with global employers and the quality of its education in preparing students for the workforce.

32. C The QS World University Rankings primarily assess universities based on academic reputation, employer reputation, and research output. These criteria help gauge the global standing of an institution in terms of its educational quality and graduate employability. While social impact is important in the broader context of academic performance and university missions, it is not explicitly part of the QS World University Rankings methodology. The rankings place a heavier focus on measurable indicators like research and the reputation of universities both in academia and industry.

33. C The Green India Mission (GIM) aims at enhancing India's forest and tree cover, improving ecological restoration, and supporting communities dependent on forests. It focuses on restoring degraded ecosystems, including the Aravalli ranges, Western Ghats, and Himalayas, and increasing forest cover over 5 million hectares. The mission is environmentally driven and emphasizes the importance of sustainable development and livelihood enhancement for tribal and rural communities. The establishment of new coal-fired power plants is not aligned with the goals of GIM, as it is a move that would increase carbon emissions rather than decrease them.

34. C Land desertification occurs primarily due to human-induced activities like deforestation, overgrazing, and unsustainable agriculture, exacerbated by climate change. It leads to the loss of arable land, declining agricultural productivity, and food and water insecurity. As fertile land turns into desert, it disrupts local ecosystems, leading to loss of biodiversity. Moreover, the reduced agricultural output forces people to migrate in search of better opportunities, thus increasing migration. This has led to many environmental and socio-economic challenges, especially in arid and semi-arid regions.

35. B The United Nations Convention to Combat Desertification (UNCCD) is the international framework focused specifically on addressing land desertification, drought, and land degradation. It aims to mitigate the impacts of desertification and help countries combat and reverse land degradation processes. The UNCCD encourages sustainable land management practices and provides a platform for collaboration among governments, NGOs, and civil society to implement policies that enhance land productivity and ecosystem resilience. The other options, such as the UNFCCC and Kyoto Protocol, are primarily concerned with climate change and its global mitigation, while the Paris Agreement focuses on reducing global greenhouse gas emissions.