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ASPIRE with RAM IAS

Weekly Current Affairs Compilation for UPSC TNPSC KPSC

Guiding Dreams, Empowering Future

By *DR. V. RAM PRASATH MANOHAR, IAS*

EXCLUSIVE CURRENT AFFAIRS BULLETIN

Newsletter | 1st Week, November 2026



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Cyclone Arnab

Why in News?

Cyclone Arnab formed in the Bay of Bengal and made landfall along the Andhra Pradesh–Yanam coast. It caused deaths, large-scale evacuations, and damage to crops and infrastructure before weakening.



Key Facts About Cyclone Arnab

Classification: Declared a Very Severe Cyclonic Storm (VSCS) by the India Meteorological Department (IMD).
- VSCS means maximum sustained wind speed of 118–166 km/h.
- Arnab struck with wind speeds of 125–135 km/h.

Origin: Started as a low-pressure area over the Bay of Bengal, helped by high Tropical Cyclone Heat Potential (TCHP).
- It moved west-northwest and made landfall near Yanam (Andhra Pradesh coast).

Name: "Arnab" was suggested by Bangladesh. It means "ocean" or "sea" in Bengali.
- It was the first named cyclone of 2026 in the North Indian Ocean.

Rapid Intensification (RI): The cyclone intensified quickly because of:
- High Sea Surface Temperatures (above 28°C)
- A thick freshwater "barrier layer" in the Bay of Bengal

El Niño Effect:
- El Niño changed normal atmospheric circulation.
- This shifted the cyclone's path toward lower latitudes (Andhra Pradesh) instead of the usual northern route toward Odisha/West Bengal.
- It also helped the storm stay strong even after landfall.

Slow Movement: Its landfall was prolonged due to interaction between:
- An anticyclonic circulation over the China–Myanmar region
- Strong westerly winds
- A low-pressure system over the southern Bay of Bengal
- This slowed the cyclone and increased rainfall and wind exposure.

Impact of Cyclone Arnab

Agriculture:
- Over 80,000 hectares of standing crops (paddy, horticulture) destroyed.

Saltwater Intrusion:
- A 1–1.5 metre storm surge pushed saline seawater into the Krishna–Godavari delta.
- This changed soil chemistry and threatened coastal farming in the medium term.

Blue Economy:
- Aquaculture and fishing trawlers were destroyed.
- Livelihoods of coastal artisanal fisherfolk were badly hit.

Disaster Response Framework

Impact-Based Forecasting (IBF):
- IMD used Doppler Weather Radars and INSAT satellites to issue colour-coded early warnings.
- This significantly reduced human casualties.

Legal Basis: Actions taken under the Disaster Management Act, 2005.

Evacuation:
NDRF and State Executive Committees evacuated over 1.8 lakh people to multi-purpose cyclone shelters.

Coordination:
The National Crisis Management Committee (NCMC), chaired by the Cabinet Secretary, coordinated preparedness and response.

Funding:
The State requested National Disaster Response Fund (NDRF) money to supplement the State Disaster Response Fund (SDRF) for recovery.

How Are Cyclones in North Indian Ocean Named?

Who names them: The WMO/ESCAP Panel on Tropical Cyclones (PTC) manages naming for the Bay of Bengal and Arabian Sea.

History:
Naming started in September 2004 with 8 member countries.
The panel expanded in 2018 (45th Session).

Current Members (13): Bangladesh, India, Iran, Maldives, Myanmar, Oman, Pakistan, Qatar, Saudi Arabia, Sri Lanka, Thailand, UAE, and Yemen.

Master List:
- A new list of 169 names was adopted in April 2020 (13 names from each of the 13 countries).

No Repetition:
- Names are never repeated in the North Indian Ocean. Once used, a name is permanently retired.

Why naming helps:
- Easy identification of cyclones
- Quick public awareness
- Avoids confusion when two storms occur together
- Helps spread warnings effectively

Naming Rules:
- Names must be politically, religiously, culturally, and gender-neutral.
- Maximum 8 letters, easy to pronounce, and must not hurt any community's sentiments.

When a storm gets a name:
RSMC New Delhi names a storm only when wind speed reaches 34 knots (62 kmph) or more.

Special Case:
- A cyclone from the South China Sea that crosses Thailand into the Bay of Bengal keeps its original name.

Why Is the Bay of Bengal More Prone to Cyclones Than the Arabian Sea?

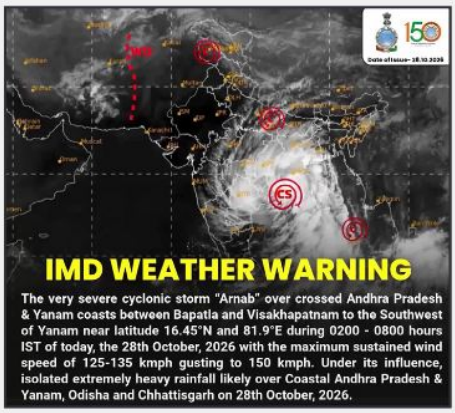
Higher Frequency:
- The Bay of Bengal gets about 4 times more cyclones than the Arabian Sea.
- The North Indian Ocean records about 5 cyclones per year on average.
- Peaks occur in pre-monsoon (April–June) and post-monsoon (October–December) seasons.

Salinity Stratification and Barrier Layer:
- Freshwater from rivers (Ganga, Brahmaputra, Godavari) forms a low-salinity surface layer.
- This stops cooler deep water from rising.
- Sea surface temperature stays above 26.5°C, which helps cyclone formation.

Typhoon Remnants (Easterly Waves):
- The Bay lies downwind of the active Northwest Pacific.
- Remnants of Pacific typhoons can cross Indochina and re-intensify over the Bay.

No Dry Air Intrusion:
- The Arabian Sea gets dry air from the Middle East and Horn of Africa, which suppresses storms.
- The Bay has abundant moisture, which favours convection.

Favourable Wind Shear and Heat Potential:
- Low vertical wind shear (similar wind speed at top and bottom of storm) keeps the storm intact.
- High Tropical Cyclone Heat Potential gives storms energy to intensify quickly.



Funnel-Shaped Coastline:
- The northern Bay's funnel shape and shallow continental shelf amplify storm surges.
- This mainly increases impact (flooding), not formation.

Major Cyclones on India's Eastern Coast

Region	Cyclones
Odisha and West Bengal (as per source table)	—
Andhra Pradesh and Tamil Nadu	Cyclone Michaung (2023), Cyclone Nivar (2020), Cyclone Hudhud (2014)

Arabian Sea Anomaly

- **Meaning:** Rapid warming of Arabian Sea surface temperatures and a big shift in cyclone patterns.

Rapid Warming:
IITM Pune study says the Arabian Sea is warming faster than the Bay of Bengal.
Causes: anthropogenic global warming, more ocean heat absorption, and aerosols like Black Carbon (Asian Brown Cloud).
Result: 52% increase in Arabian Sea cyclone frequency in recent decades.

Positive Indian Ocean Dipole (IOD):
More strong Positive IOD events concentrate warm water in the western Indian Ocean/Arabian Sea.
This triggers severe pre-monsoon cyclones (e.g., Tauktae, Biparjoy).

Longer Lifespan:
Arabian Sea cyclones now last 80% longer than two decades ago.
This raises destructive potential along India's west coast.

Conclusion

Cyclone Arnab shows how India's east coast remains highly exposed to tropical cyclones, with heavy costs for farming, fishing livelihoods, and infrastructure. Better early warning systems like impact-based forecasting and the use of Doppler radars and satellites have clearly saved lives, but the real challenge now lies in long-term resilience. Climate change and ocean warming are making cyclones more intense and unpredictable, and shifting risks toward the Arabian Sea as well. Therefore, India needs stronger coastal planning, climate-adapted agriculture, and continued investment in disaster preparedness to protect both people and the economy.

UPSC Civil Services Prelims PYQ (Related Topic)

Q. Consider the following statements:
1. Jet streams occur in the Northern Hemisphere only.
2. Only some cyclones develop an eye.
3. The temperature inside the eye of a cyclone is nearly 10°C lesser than that of the surroundings.
Which of the statements given above is/are correct?
(a) 1 only
(b) 2 and 3 only
(c) 2 only
(d) 1 and 3 only
Answer: (c) 2 only.





Green Hydrogen & India's Clean ENERGY TRANSITION

Why in News?

India is pushing its National Green Hydrogen Mission (NGHM) forward through:
Domestic electrolyser manufacturing
Green hydrogen production
Industrial pilot projects
Certification mechanisms
All of this supports India's target of 5 million metric tonnes (MMT) of green hydrogen per year by 2030 and its Net Zero goal by 2070.

What is Green Hydrogen?

Definition: Hydrogen produced using renewable energy, mainly through water electrolysis powered by solar or wind electricity. It has much lower carbon emissions than hydrogen made from fossil fuels.
Clean Energy Carrier: Hydrogen is an energy carrier — it can store and deliver energy for many uses.
In a fuel cell, it reacts with oxygen to produce electricity, with water and heat as by-products.
No direct emission of polluting compounds or greenhouse gases.
Production Decides Impact: Hydrogen is usually obtained from water or natural gas.
Fossil-fuel-based production releases a lot of carbon.
Renewable-powered electrolysis greatly reduces the carbon footprint.
Decarbonisation Potential: Green hydrogen can cut emissions in hard-to-abate sectors:
- Fertilisers
- Petroleum refining
- Steel
- Heavy-duty transportation
- Shipping
- These are sectors where direct electrification is difficult or impractical.

Energy Security and Economy:
- India's abundant solar and wind resources can support domestic production.
- This reduces dependence on imported fossil fuels and exposure to global price shocks.

How is Green Hydrogen Produced?

Water Electrolysis:
- Electricity from renewables (solar, wind) splits water into hydrogen and oxygen with minimal emissions.

Chemical reaction: $2H_2O \rightarrow 2H_2 + O_2$
Electrolyser (the main equipment):
- Has two electrodes — cathode (negative) and anode (positive) — connected to a power source.
- Works with an electrolyte that helps ion movement.
- A diaphragm or membrane separates hydrogen and oxygen gases while allowing ion transport.

When current passes:
- Hydrogen forms at the cathode
- Oxygen forms at the anode
- Both gases are collected separately.

Water Purification:
- Water is purified first so impurities don't damage the electrolyser.
- About 9 litres of water are theoretically needed to produce 1 kg of hydrogen.
- Actual use may be higher due to purification and operational needs.

Hydrogen Processing:
- The hydrogen is dried, purified and compressed for storage, transport or industrial use.
- India's Green Hydrogen Standard covers emissions from these production and processing stages.

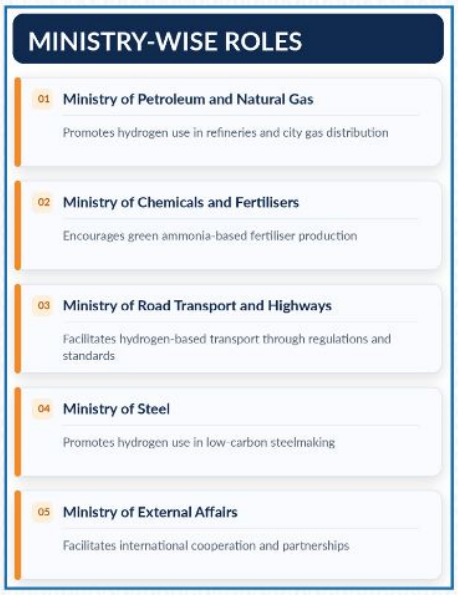
India's Green Hydrogen Policy Architecture

The framework is centred on the National Green Hydrogen Mission (NGHM), supported by financial incentives, sector-specific pilots, renewable infrastructure, certification standards, R&D and skilling.

Whole-of-Government Approach

National Green Hydrogen Mission (NGHM)

Approved: By the Union Cabinet in January 2023.
Outlay: ₹19,744 crore.
Implemented by: Ministry of New and Renewable Energy (MNRE).



Aim: Make India a global hub for green hydrogen production, utilisation and exports.
2030 Target:
At least 5 MMT annual green hydrogen production capacity.
May expand to 10 MMT depending on export demand.
Strategic Interventions for Green Hydrogen Transition (SIGHT)
Allocation: ₹17,490 crore up to 2029–30.
Purpose: Incentives for:
Domestic electrolyser manufacturing
Green hydrogen production
Achievements:
- Incentives given to 15 companies for 3,000 MW per annum of electrolyser manufacturing capacity.
- Incentives for 8.62 lakh tonnes per annum of green hydrogen production capacity.
- About 8,000 tonnes per annum commissioned by February 2026.

Sector-Specific Pilot Projects

These test commercial viability and address technology and infrastructure gaps.
Steel:
₹455 crore allocated up to 2029–30.
Five pilot projects sanctioned.
Includes ₹84 crore for testing 100% hydrogen injection.
Mobility:
12 projects covering 70 hydrogen vehicles (27 buses and 43 trucks).
16 hydrogen refuelling stations across 21 routes.
Shipping:
- V.O. Chidambaranar Port Authority awarded a ₹38.12 crore green methanol bunkering and refuelling project.
- Includes an MNRE grant of ₹35 crore.

Green Hydrogen Hubs and Hydrogen Valley Innovation Clusters (HVICs)

Purpose: Geographically concentrated production, consumption, innovation and shared infrastructure.
Benefits: Lower costs and better economies of scale.

Green Hydrogen Hubs recognised:

- Deendayal Port (Gujarat)
- V.O. Chidambaranar Port (Tamil Nadu)
- Paradip Port (Odisha)

Indigenous plant: A 1 MW green hydrogen plant commissioned at Kandla Port in July 2025.
HVICs awarded (4): Jodhpur, Odisha, Pune and Kerala.

Enabling Policy Framework

Transmission Charge Waiver:
- Eligible green hydrogen and green ammonia plants commissioned by 31 December 2030 get a 25-year waiver of Inter-State Transmission System (ISTS) charges.

Open Access and Energy Banking:
- Green Hydrogen and Green Ammonia Policy provides Open Access within 15 days.
- Allows banking of surplus renewable electricity for up to 30 days.

Infrastructure Support:
-Green Energy Corridor Scheme strengthens renewable electricity transmission.
- Existing Solar Parks, Manufacturing Zones and SEZs can support hydrogen infrastructure.

Regulatory Incentives:
- Eligible standalone green hydrogen and ammonia plants are exempt from prior Environmental Clearance under the EIA Notification, 2006.
- Certain SEZ/EOU renewable energy projects get specified equipment-list exemptions and duty benefits.

Regulations and Standards

Green Hydrogen Standard (2023):
- Maximum well-to-gate emissions intensity of 2 kg CO_2 equivalent per kg of hydrogen, averaged over 12 months.
- Covers eligible biomass-based production pathways, subject to the prescribed threshold.

Green Hydrogen Certification Scheme (2025):

- Framework for monitoring, verification and certification.
- Bureau of Energy Efficiency (BEE) accredits verification agencies.
- A dedicated digital certification portal became operational in June 2026.

Green Ammonia and Methanol Standards:
- Specify emissions thresholds and eligibility conditions.
- Facilitate production, certification and trade.

World Hydrogen and Fuel Cell Day 2026

- Observed on 8th October 2026.
- MNRE organised a stakeholder consultation in New Delhi.

Focus: Strengthening hydrogen safety standards, testing protocols and institutional coordination for production, storage, transportation and utilisation.

Report released: "India's Hydrogen Standards: Gap Assessment and Preliminary Action Framework", prepared with Boston Consulting Group (BCG).
- Identifies regulatory gaps.
- Recommends measures for safe deployment of hydrogen technologies.

Research & Development

Strategic Hydrogen Innovation Partnership (SHIP):
- A public-private framework involving industry and government.
- Aims to make green hydrogen more affordable, efficient, safe and reliable.

R&D Funding:
- Guidelines notified in March 2024 with an outlay of ₹400 crore.
- As of June 2026, an initial ₹113-crore R&D roadmap supports projects on production, storage and safety technologies.

Skilling and Start-ups

Employment Potential: Mission aims to generate over 6 lakh jobs by 2030 across the value chain.

Skill Development:
- 8,149 candidates trained and 7,248 certified.
- Across 14 States and UTs.
- Areas: electrolysers, electrolysis, storage, transport, safety, steel, mobility and refining.

Start-up Support:
- ₹100 crore allocated for green hydrogen technology start-ups.
- First nine start-ups approved for funding of ₹22 crore.

International Cooperation

Bilateral Partnerships:
- MNRE (directly or through the National Institute of Solar Energy) has signed MoUs, Letters of Intent or Joint Declarations of Intent with:
- Australia, Finland, France, Germany, Saudi Arabia, the UAE and Uzbekistan.

India–Netherlands: MoU on renewable energy signed.

India–US:
- India–US Hydrogen Task Force under the Strategic Clean Energy Partnership.
- Green hydrogen is a focus area of the India–US New and Emerging Renewable Energy Technology Action Platform (RETAP).

State-Level Initiatives

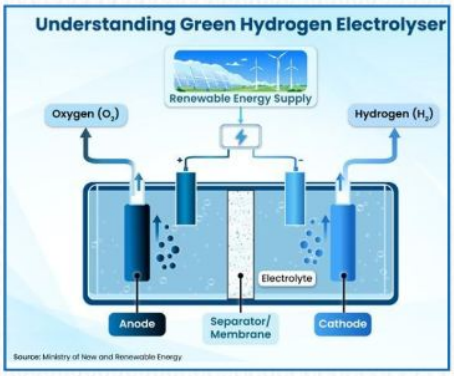
States with dedicated green hydrogen policies:
- Gujarat, Andhra Pradesh, Maharashtra, Uttar Pradesh, Rajasthan, West Bengal.

States finalising policies:
Haryana, Punjab, Bihar, Keralam.

States with integrated frameworks (hydrogen included in industrial/ renewable policy):
- Himachal Pradesh, Madhya Pradesh, Odisha, Telangana, Chhattisgarh.

Major Applications of Green Hydrogen

Fertiliser Industry:
- Can replace fossil-fuel-derived hydrogen in ammonia production.
- Enables green ammonia for nitrogen-based fertilisers like urea, with much lower emissions.



Petroleum Refineries:
- Used in desulphurisation (removing sulphur) and hydrocracking (converting heavy fractions into lighter fuels).
- Replacing conventional hydrogen cuts refinery emissions.

Iron and Steel Industry:
- Can replace coal-based reducing agents in Direct Reduced Iron (DRI) production.
- Converts iron ore into iron, producing water vapour instead of CO_2.

City Gas Distribution:
- Can be blended with natural gas in limited proportions for domestic, commercial and industrial use.
- Subject to pipeline compatibility, safety standards and technical requirements.

Road & Rail Transport:

- Hydrogen Fuel Cell Electric Vehicles (FCEVs) generate electricity onboard by combining hydrogen with oxygen.

By-products: water and heat.
- Useful for heavy-duty buses, trucks and trains needing long range and quick refuelling.
- India's first indigenous hydrogen-powered train was inaugurated on 17th July 2026 on the Jind–Sonipat section in Haryana.

Shipping:
- Green hydrogen can be converted into green ammonia and green methanol as alternative marine fuels.
- Subject to vessel compatibility, safety requirements and port infrastructure.

Energy Storage:
- Surplus renewable electricity can be converted into hydrogen for long-duration storage.
- Supports renewable energy integration and grid flexibility.

Conclusion

The National Green Hydrogen Mission is building the base for a low-carbon, self-reliant hydrogen economy through domestic manufacturing, industrial pilots, green hydrogen hubs and certification systems. It covers many sectors — fertilisers, refining, steel, transport, shipping and storage — and is backed by incentives, R&D, skilling and international partnerships. However, high production costs, infrastructure gaps and uncertain demand remain major challenges. Solving these will be essential for India to meet its 2030 green hydrogen target and its Net Zero 2070 commitment.

UPSC Civil Services Prelims PYQ (Related Topic)

Q. Which of the following statements with regard to Green Hydrogen is/are correct? (2025)

1. It is decarbonized hydrogen obtained from natural gas reforming combined with carbon capture and storage (CCS).
2. It is produced using electrolysis of water with electricity generated by renewable energy.
3. National Green Hydrogen Mission of India aims for an abatement of nearly 50 MMT of annual greenhouse gas emissions by 2030.

Select the answer using the code given below:

(a) 1 only
(b) 2 and 3 only
(c) 2 only
(d) 1, 2 and 3

Answer: (b) 2 and 3 only.

Amendments to Central Motor Vehicle Rules for E100 Fuel Usage



Why in News?

The Ministry of Road Transport and Highways (MoRTH) has amended the Central Motor Vehicles Rules (CMVR), 1989 to allow the use of E100 (up to 100% ethanol) as an automotive fuel in specially designed and certified flex-fuel vehicles (FFVs).

Statutory Amendments

- **Rules Changed:** The government modified Rule 115 (emission standards) and Rule 115E (emission testing) of the CMVR, 1989.
- **Fuel Specifications:** E100 and E85 have been included in the official fuel specification tables .
- **Gazette Notification:** The amendment was notified on 23 October 2026, following a draft released for public comment in April 2026 .
- **Other Changes:** The vehicle weight threshold for certain emission tests was raised from 3,000 kg to 3,500 kg. The biodiesel testing entry was changed from B10 to B100 .

Target Vehicles and Compatibility

Strictly for FFVs: E85 and E100 are only meant for vehicles designed and certified by Original Equipment Manufacturers (OEMs) as dedicated flex-fuel vehicles .
No Mandatory Transition: The notification does not force existing vehicle owners to switch to E85 or modify their current engines. This eases public concerns about the transition.
Compatibility Distinction:
- A vehicle engineered for E10 or E20 is not automatically suitable for E85 or E100.
- Motorists must check the fuel compatibility sticker and manufacturer guidelines before choosing a fuel blend .

Why the Difference Matters: Higher ethanol blends require major changes to engine calibration, fuel-system components, and materials (e.g., corrosion-resistant parts, different elastomers). Standard E20 vehicles cannot simply switch to E100 .

What are Flex-Fuel Vehicles (FFVs)?

Definition: Vehicles that can operate on petrol and varying ethanol blends, potentially up to E100, using a single fuel tank.
How They Work: The engine control system automatically adjusts to the fuel composition within the range certified by the manufacturer .
Technology Status: Flex-fuel technology is already established in countries like Brazil and the United States .

What is Ethanol?

Definition: Ethanol (ethyl alcohol) is a renewable biofuel produced naturally by the fermentation of sugars by yeasts, or via petrochemical processes.
India's Feedstocks: Primarily derived from sugarcane molasses, maize, and surplus food grains.
Ethanol Blended Petrol (EBP) Programme **Launched:** In 2003.
Policy Basis: Under the National Policy on Biofuels, 2018.
Objectives:
- Curb crude oil imports
- Cut greenhouse gas emissions
- Boost farmers' incomes

Expanded Feedstocks: The policy expanded permissible raw materials to include sugarcane juice, sugar beet, corn, and damaged grains.
Major Milestone: India achieved its 20% ethanol blending target (E20) in 2025, five years ahead of the original 2030 deadline.
Current Mandate: As of April 2026, all petrol sold across India must contain 20% ethanol and meet a minimum Research Octane Number (RON) of 95.

Broader Context and Implications

Shift Beyond E20: The E100 amendment moves India beyond the E20 programme, creating a legal pathway for automakers to launch vehicles running on high ethanol blends .
Vehicle Availability: Carmakers like Maruti Suzuki, Toyota, Hyundai, and MG are expected to introduce E100-compatible vehicles. Maruti Suzuki's flex-fuel Wagon R and Hero MotoCorp's ethanol-compatible motorcycles have already been showcased.
Infrastructure Challenge: Oil marketing companies will need to develop dedicated E100 dispensing infrastructure. Storage and distribution systems may need upgrades to handle ethanol's different properties .
Fuel Economy Consideration: Higher-ethanol blends contain less energy than petrol. Vehicles running on E100 generally consume more fuel for the same distance travelled .
E100 is Not Pure Ethanol: In practice, E100 fuel typically contains around 93–95% ethanol, with the remainder being petrol and additives that aid cold starts and fuel handling .

Feedstock Constraints: The government has restricted sugarcane-based feedstocks for ethanol in the 2026-27 supply year, shifting reliance toward maize, damaged food grains, and C-heavy molasses . This affects the supply chain for higher ethanol blending.

Conclusion

The amendment to the Central Motor Vehicle Rules marks a significant step in India's ethanol journey, moving from E20 blending toward E100-capable flex-fuel vehicles. It provides automakers with a clear certification pathway and gives consumers the option of high-ethanol fuel without forcing existing vehicle owners to change. However, the success of this transition depends on vehicle availability, dedicated fuel infrastructure, consumer acceptance, and a stable ethanol supply chain. While E100 offers benefits like reduced crude oil imports and support for farmers, challenges related to fuel economy, infrastructure costs, and feedstock competition must be addressed for widespread adoption.

UPSC Civil Services Prelims PYQ (Related Topic)

Q. Consider the following statements with reference to India's Ethanol Blended Petrol (EBP) Programme:

1. The programme was launched in 2003.
2. The National Policy on Biofuels, 2018 set a target of 20% ethanol blending by 2030.
3. India achieved its 20% ethanol blending target in 2025, ahead of the original deadline.

Which of the statements given above are correct?

(a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

Answer: (d) 1, 2 and 3.

Defence Acquisition Council Clears Procurement Proposals Worth ₹2.12 Lakh Crore



Why in News?

The Defence Acquisition Council (DAC), chaired by Defence Minister Rajnath Singh, has granted Acceptance of Necessity (AoN) for defence procurement proposals worth approximately ₹2.12 lakh crore . Around 82% of these procurements are expected to be sourced from Indian industry, giving a major push to domestic defence manufacturing .

Understanding Acceptance of Necessity (AoN)

What it is: AoN is an initial approval in the defence acquisition process. It indicates that the armed forces genuinely need the proposed equipment and the procurement can move forward .

What it is NOT: AoN does not mean contracts have been awarded. It is an in-principle approval, and the actual contract signing comes much later after tendering, trials and negotiations .

Why it matters: The DAC's approval is the first major step in a long procurement cycle. It allows the Ministry of Defence to proceed with issuing Requests for Proposals (RFPs) and evaluating vendors.

Major Acquisition Proposals

INDIAN ARMY

High Mobility Vehicles (HMVs): Will improve troop mobility, logistics and operational capabilities in challenging terrains .

Self-Propelled Tracked Gun Systems: Provides mechanised formations with matching mobility and firepower .

Light Multi-Role Helicopters (LMRH): To be used by both Army and Air Force.

Roles: reconnaissance, surveillance, combat operations, search and rescue, humanitarian assistance and disaster relief .

Very Short-Range Air Defence Systems (VSHORADS): Designed to counter new-generation small aerial threats .

Counter-Unmanned Aerial Systems (C-UAS): Platform-based systems to improve survivability of tanks against drone threats .

Drone Systems:
- Long-range kamikaze drones
- Surveillance UAVs
- Integrated surveillance and strike systems
- These will strengthen the Army's reconnaissance, surveillance and targeting capabilities .

INDIAN NAVY

Active Offboard Decoy Systems (AODS): Strengthens anti-missile defence, especially against modern anti-ship missiles of adversaries .

Other Major Naval Platforms: Indigenously designed and constructed platforms with modern-day warfare capabilities .

INDIAN AIR FORCE

Helicopters:
Special Utility Helicopters to address key air transport requirements .
Air Defence Systems and Weapons:
To enhance air defence and war-fighting capabilities .
Mobile X-Band Doppler Weather Radar Systems:
Provides high-resolution, localised weather surveillance in forward areas .

Significance of Domestic Sourcing

82% from Indian Industry: This is a strong signal of India's push toward Aatmanirbhar Bharat in defence .
Benefits:
- Reduces import dependence
- Strengthens military preparedness with faster supply chains
- Supports technology development and the domestic defence industrial ecosystem
- Creates jobs and builds capabilities in Indian companies

India's Defence Production Growth

Record Production: India's annual defence production reached ₹1.78 lakh crore in FY 2025-26, a 15.6% growth over the previous financial year .
Long-Term Trend:
FY 2020-21: ₹84,643 crore
Growth of over 110% from FY 2020-21 to FY 2025-26 .
Private Sector Share:
Public sector units contributed about 76% of total production.
Private sector share rose to 24% (up from 22% in FY 2024-25), reaching a record ₹42,000 crore .
Defence Exports: India achieved record defence exports of ₹38,424 crore in FY 2025-26 .

About the Defence Acquisition Council (DAC)

Constitution: The DAC was constituted as an overarching structure under the Defence Minister for overall guidance of the defence procurement planning process .
Objective: To ensure expeditious procurement of approved requirements of the Armed Forces in terms of capabilities sought and time frame prescribed, by optimally utilizing allocated budgetary resources .
Functions include:
- In-principle approval of the 15 Years Long Term Integrated Perspective Plan for Defence Forces
- Accord of Acceptance of Necessity to acquisition proposals
- Categorization of acquisition proposals ('Buy', 'Buy & Make', 'Make')
- Issues relating to single vendor clearance
- Decisions regarding offset provisions for acquisitions above ₹300 crore
- Decisions on Transfer of Technology under 'Buy & Make' category

Chairperson: The Defence Minister .

Broader Context: Strategic Implications

Modernisation Push: The approvals cover a wide spectrum — from mobility and firepower to air defence and drone warfare — reflecting India's focus on multi-domain capabilities .
Drone Warfare: The emphasis on counter-drone systems and kamikaze drones shows India is adapting to lessons from recent global conflicts where drones have played a decisive role .
Naval Strength: AODS and indigenous naval platforms strengthen India's ability to protect its maritime interests, especially against anti-ship missile threats in the Indian Ocean Region .
Air Force Readiness: Weather radars and utility helicopters enhance operational effectiveness in forward and remote areas .

Conclusion

The DAC's approval of ₹2.12 lakh crore in defence procurement proposals is a major step toward modernising India's armed forces. With 82% of the sourcing from Indian industry, it directly supports the Aatmanirbhar Bharat goal and builds on the record defence production of ₹1.78 lakh crore in FY 2025-26. The mix of equipment — from high-mobility vehicles and self-propelled guns to counter-drone systems and naval decoys — shows a comprehensive approach to addressing diverse security challenges. However, the real test lies in converting these AoNs into actual contracts and timely deliveries. The journey from approval to induction is long and complex, and effective monitoring will be essential to ensure that these approvals translate into tangible military capability on the ground.

UPSC Civil Services Prelims PYQ (Related Topic)

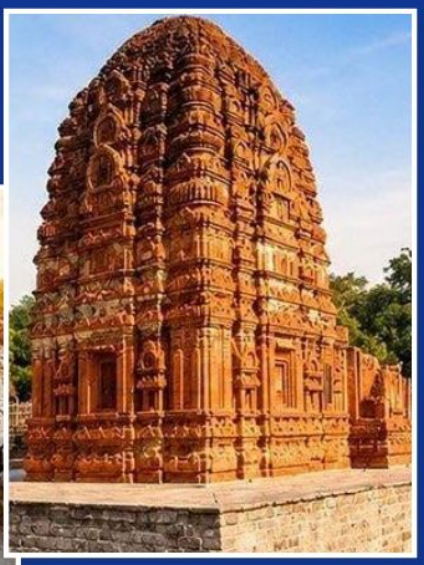
Q. What is the purpose of the 'Acceptance of Necessity' (AoN) in India's defence procurement process?
(a) It is the final contract signed between the Ministry of Defence and the vendor.
(b) It is an initial approval indicating that the armed forces need the proposed equipment.
(c) It is a clearance from the Finance Ministry for the defence budget.
(d) It is a certification that the equipment has passed all field trials.

Answer: (b) It is an initial approval indicating that the armed forces need the proposed equipment.









UNESCO Adds 3 Indian Sites to World Heritage Tentative List

Why in News?

UNESCO has added three Indian sites to its World Heritage Tentative List. This takes India's total on the Tentative List to 81 .
The three sites are:
1. Sirpur Cultural and Archaeological Landscape (Chhattisgarh)
2. Karst-Mud-Volcano Complex of Baratang (Andaman and Nicobar Islands)
3. Andaman Subduction Volcanoes – Barren Island and Narcondam Island (Andaman and Nicobar Islands)
These additions reflect India's rich cultural and geological heritage .

What is the UNESCO Tentative List?

Definition: An inventory of cultural and natural heritage sites that a country (State Party) considers to have potential Outstanding Universal Value (OUV) and to be suitable for inscription on the World Heritage List .
Mandatory Step: Inclusion in the Tentative List is a required prerequisite for any World Heritage nomination. A site cannot be nominated without first being on this list .
Process: Under UNESCO's procedure, a property must undergo a Preliminary Assessment. The outcome must be provided at least one year before submitting the full nomination dossier .
India's Status:
81 sites on the Tentative List (after the recent additions)
45 inscribed World Heritage Sites (37 cultural, 7 natural, 1 mixed)

Site 1: Karst-Mud-Volcano Complex of Baratang

Location and Setting
- Situated on Baratang Island, between South Andaman and Middle Andaman.
- About 100 km north of Sri Vijaya Puram (Port Blair) .
- The proposed heritage property lies in the southwestern part of the island.

Geological Setting
- The Andaman-Nicobar Islands lie in an active tectonic zone.
- Formed by the subduction of the Indian Plate beneath the Burma microplate.
- This makes the region important for studying plate tectonics, earthquakes and geological evolution .

Karst Landscape
- Limestone formations developed over millions of years through accumulation of marine sediments and dissolution of limestone by water.
- Features include caves, fissures, clefts and speleothems (mineral deposits like stalactites and stalagmites) .
- Palaeoclimatic Significance: Speleothems from Mahadev Gupha cave have been used to reconstruct Indian summer monsoon variability from the 10th to 19th centuries CE .

Mud Volcanoes

- Baratang has four clusters of non-igneous mud volcanoes, locally known as Jalki .
- They release mud, water and gases (mainly methane and hydrogen sulphide) due to upward movement of overpressured sediments along tectonic faults.
- Unlike conventional volcanoes: They do not involve magma .
- After about 20 years of dormancy, the mud volcanoes erupted again in 2025 .



Biodiversity and Endemism

- Supports interconnected tropical forest, mangrove and subterranean ecosystems.
- Habitats for endemic and threatened species.

Important fauna:

- Andaman horseshoe bat
- Homfray's horseshoe bat
- Edible-nest swiftlet
- About 17% of the 90 recorded tree species in the Baratang karst landscape are endemic .

Protection Status

- Lies within the Baratang Reserve Forest/ Jarawa Tribal Reserve landscape.
- Geological Survey of India (GSI) identified the Baratang Mud Volcano as a Geo-Heritage Site in 2025.

Site 2: Andaman Subduction Volcanoes (Barren Island and Narcondam Island)

About

- Two Quaternary volcanic islands in the Andaman and Nicobar Islands.
- Represent contrasting volcanic activity, ecological succession and island endemism .

Tectonic Setting

- Lie along the Burma–Andaman–Java subduction complex.
- The Indian Plate subducts beneath the Burma microplate, forming part of an active volcanic arc .

Barren Island

- Located in the Andaman Sea, about 138 km northeast of Sri Vijayapuram .
- South Asia's only active volcano .

Eruption History:

- **First recorded eruption: 1787**

Major eruptions: 1991, 1994–95, 2005–07

Recent activity: Two mild eruptions in September 2025 and an ash plume in January 2026 .

Features a 2-km-wide caldera (large depression formed by volcanic collapse).

Lava composed mainly of basalt and basaltic andesite .

Narcondam Island

- Located about 240 km northeast of Sri Vijayapuram .
- A dormant or extinct volcano with an estimated 18,000–20,000 years of inactivity .
- This long inactivity has allowed development of mature forest ecosystems and endemic biodiversity .
- Volcanic rocks mainly comprise dacite, andesite and rhyolite (unlike the predominantly basaltic rocks of Barren Island) .

Biodiversity and Endemism

- Narcondam Hornbill (Rhyticeros narcondami) – classified as Vulnerable on the IUCN Red List; protected under Schedule I of the Wild Life (Protection) Act, 1972 .
- Narcondam Shrew (Crocidura narcondamica) .

Conservation Status

Both islands are Wildlife Sanctuaries under the Wild Life (Protection) Act, 1972:

- Barren Island (1977)
- Narcondam Island (1987)
- GSI recognised Barren Island as a Geoheritage Site in 2025 .
- Narcondam is identified as an Important Bird Area (IBA) and Key Biodiversity Area (KBA) .
- Entry to both islands is strictly regulated.



Site 3: Sirpur Cultural and Archaeological Landscape

Location and History

Situated in Mahasamund district, Chhattisgarh, on the eastern bank of the Mahanadi River .

Ancient name: Shripur or Sripura .

Emerged as an important centre of Dakshina Kosala under the Sharabhapuriya dynasty.

Later flourished as its capital under the Panduvamshi rulers .

Period and Urban Development

Archaeological remains date mainly from the 5th–12th centuries CE .

Reveals a planned riverine urban centre with:

- Roads, drainage, wells, baths
- Markets, residential areas
- Religious structures

Multi-faith Heritage

- Sirpur witnessed the coexistence of Hinduism, Buddhism and Jainism .
- Shaiva and Vaishnava temples, Buddhist viharas and Jain establishments located within the same urban landscape.

Architecture

- Lakshmana Temple is a major example of early medieval brick Nagara architecture .

Notable for extensive use of fired bricks and locally available stromatolitic stone .

Trade and Economy

- Location along the Mahanadi River supported trade and connected Sirpur with wider regional networks.

Excavations indicate activities such as:

- Agriculture
- Pottery
- Smithy (metalwork)
- Gold work
- Bead making

Historical Evidence

- Xuanzang mentioned Buddhist estab-

lishments in the region during the 7th century CE .
· Documented in the 19th century by J.D. Beglar and Alexander Cunningham .
· Major excavations began in 1953 .

Important Monuments

· Lakshmana Temple
· Ram Temple
· Gandheshwar Temple
· Anandprabhu Kuti Vihara
· Swastik Vihara
· Harshagupta and Teevardeo Buddha Vihara
· Rajmahal and Market Complex
· Baleshwar Group of Monuments

Conclusion

The addition of these three sites to UNESCO's Tentative List highlights India's dual heritage — its ancient cultural legacy and its remarkable geological diversity. Sirpur showcases a 5th–12th century multi-faith urban centre with early medieval brick architecture, while the Baratang mud volcanoes and the Andaman subduction volcanoes offer rare insights into plate tectonics, palaeoclimate and island endemism. Barren Island, as South Asia's only active volcano, and Narcondam, with its endemic hornbill and shrew, are globally significant. Getting on the Tentative List is only the first step. The real challenge lies in preparing strong nomination dossiers, ensuring site conservation and managing visitor pressure. These additions strengthen India's case for global recognition of its natural and cultural wealth, but sustained effort will be needed to convert this potential into actual World Heritage status.

UPSC Civil Services Prelims PYQ (Related Topic)

Q. Consider the following properties included in the World Heritage List released by UNESCO: (2024)
1. Shantiniketan
2. Rani-ki-Vav
3. Sacred Ensembles of the Hoysalas
4. Mahabodhi Temple Complex at Bodhgaya
How many of the above properties were included in 2023?
(a) Only one
(b) Only two
(c) Only three
(d) All four

Answer: (b) Only two.

India Becomes World's 3rd-Largest Automobile Industry



Why in News?

India's automobile industry, valued at approximately ₹22 lakh crore, has overtaken Japan to become the world's third-largest automobile market by new-vehicle sales, after China and the United States.

India's Position in Global Automobile Market

Global Ranking: India is now 3rd, behind China (1st) and the United States (2nd), and ahead of Japan.

Sales Data (OICA):
India recorded approximately 55.18 lakh new motor vehicle sales in 2025.
Japan recorded 45.66 lakh in the same period.

Source: International Organisation of Motor Vehicle Manufacturers (OICA).

Significance: This is a major milestone reflecting India's growing domestic manufacturing strength and rising consumer demand.

Industry Growth

Value Expansion: India's automobile industry has grown from approximately ₹14 lakh crore to ₹22 lakh crore.

Drivers of Growth:
- Growth in domestic vehicle manufacturing
- Expansion of the automotive market
- Rising demand across segments — passenger vehicles, two-wheelers and commercial vehicles

Economic Contribution

Revenue to Governments:
The automobile sector contributes approximately ₹4.5 lakh crore in revenue to Central and State Governments.

Employment:
Supports around 4.5 crore jobs (direct and indirect).
Strengthens industrial production and ancillary industries.

Ancillary Linkages: Automobile manufacturing supports:
Component suppliers and ancillary industries
Technological development
Industrial production and employment

Automobile Exports

Export Growth: India's vehicle exports increased by approximately 24% to over 67 lakh units in FY 2025–26.

Key Drivers:
Demand for passenger vehicles
Two-wheelers
Commercial vehicles

Significance: Rising exports show India's growing competitiveness in global automotive markets.

Infrastructure and Logistics Support

Highways and Expressways:
Improved highways and expressways have reduced India's logistics costs by 6% .
Reduced travel time and supported economic activity along transport corridors.

Linkage to Auto Sector: Better infrastructure lowers the cost of moving vehicles and components, supporting both manufacturing and exports.

Green Hydrogen and Energy Linkages

Farmers as Energy Contributors: Indian farmers are increasingly being considered potential contributors to hydrogen and other energy production.
This could help reduce dependence on imported energy resources.
Energy Exports: Expansion of domestic hydrogen production could create opportunities for India to emerge as an energy-exporting country .
Relevance to Auto Sector: Green hydrogen is relevant for future mobility, especially in heavy-duty transport and fuel-cell vehicles.

Significance of the Milestone

Domestic Manufacturing: Boosts India's position as a global manufacturing hub.
Employment: Supports lakhs of jobs across the value chain.
Exports: Strengthens India's export basket and foreign exchange earnings.
Ancillary Industries: Benefits component makers, logistics and related sectors.
Industrial Competitiveness: Enhances India's position in the global automotive market.
Aatmanirbhar Bharat: Reflects progress toward self-reliance in manufacturing.

Conclusion

India's rise to become the world's third-largest automobile market is a landmark achievement that reflects the strength of its manufacturing base, rising domestic demand and growing export competitiveness. The industry, now valued at ₹22 lakh crore, contributes significantly to government revenues and supports around 4.5 crore jobs. With exports growing by 24% and infrastructure improvements reducing logistics costs, the sector is well-positioned for further growth. Looking ahead, emerging areas like green hydrogen and fuel-cell mobility could open new opportunities for India, both as a manufacturing hub and potentially as an energy exporter. However, sustaining this momentum will require continued investment in infrastructure, technology, skilled manpower and a supportive policy environment.

UPSC Civil Services Prelims PYQ (Related Topic)

Q. Consider the following statements regarding India's automobile industry:
1. India is the world's third-largest automobile market by new-vehicle sales, after China and the United States.
2. The automobile sector supports around 4.5 crore jobs in India.
3. India's vehicle exports declined in FY 2025-26 due to weak global demand.
Which of the statements given above are correct?
(a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3
Answer: (a) 1 and 2 only.

Pradhan Mantri Viksit Gram Swaraj Yojana





Why in News?

The Union Cabinet has approved the Pradhan Mantri Viksit Gram Swaraj Yojana (PM VGSY), a new scheme aimed at strengthening grassroots governance and Panchayati Raj Institutions (PRIs) across India.

Key Facts About the Scheme

About:
- PM VGSY is a Centrally Sponsored Scheme.
- It aims to strengthen Panchayats as empowered, self-reliant, accountable and high-performing institutions of local self-government.



Tools used: Integrated planning, capacity building and digital governance.
Implementation Period:
- From FY 2026–27 to 2030–31.
Financial Outlay:
Total: ₹7,395.55 crore
Central share: ₹4,869.48 crore
State share: ₹2,526.07 crore
Institutional Coverage:
- Covers over 2.55 lakh Panchayats and traditional local bodies.
- Includes all States and UTs.
- Also covers eligible traditional rural local government institutions in areas where Panchayats under Part IX of the Constitution do not exist.

Beneficiaries:
- Around 32 lakh elected representatives, Panchayat functionaries and other stakeholders.
- Benefits through capacity building, technical support and digital handholding.

Finance Commission Linkage:
- Scheme coincides with the 16th Finance Commission (2026–31) period.
- The 16th FC has recommended approximately 4.35 lakh crore in grants for Rural Local Bodies (RLBs) .
- PM VGSY aims to strengthen Panchayats' capacity to utilise these resources effectively .

Implementation Mechanism:
- Operates through existing government institutions.
- States and UTs submit Annual Action Plans for appraisal and approval by a Central Empowered Committee.
- Provides for need-based contractual personnel at State, District and Block levels — without creating permanent posts .

Six Pillars of the Scheme

1. Gram Panchayats as Hubs of Local Governance
- Positions Gram Panchayats at the centre of local development planning.

Enables them to coordinate:
- Village priorities
- Government schemes
- Available resources
- Aligns national development goals with local needs .

2. Holistic Planning at Gram Panchayat Level
- Integrates Central and State departmental planning processes kollol look
- Uses a common digital platform to strengthen Gram Panchayat Development Plans (GPDPs) .
- Helps identify development gaps and improve resource utilisation .

3. Digital Governance
- Builds on eGramSwaraj and existing e-Panchayat systems.

Consolidates information on:
- Government schemes
- Beneficiaries
- Community assets
- Available resources
- Improves planning, monitoring and knowledge-sharing among Panchayats.

4. Connecting National Priorities with Local Needs

Promotes Jan Bhagidari (people's participation) through:
- Gram Sabhas
- Panchayat forums
- Digital outreach

AI-enabled PANCHAM (Panchayat Assistance and Messaging Chatbot) facilitates:
- Multilingual, two-way communication in 17 Indian languages .



5. Capacity Building
- Strengthens skills of elected representatives and Panchayat functionaries.
- Uses Integrated Government Online Training (iGOT) and the National Academy for Capacity Building of Civil Services .

Covers:
- Digital governance
- Development planning
- Resource management
- Specialised technical tasks

6. Transparent and Efficient Resource Utilisation
- Promotes effective use of Finance Commission grants.
- Encourages mobilisation of Own Source Revenue (OSR) .

Ensures financial accountability through:
- Online accounting
- Auditing
- Public disclosure

Key Targets of the Scheme

- Development Planning:
Preparation of over 2.55 lakh GPDPs annually through eGramSwaraj.
Integrates local priorities, departmental interventions and available resources.

- Citizen Awareness:
Reaching at least 1 crore citizens per awareness-generation episode.
Through Gram Sabhas, digital platforms and outreach campaigns.

- Capacity Building:
Training and digital support to around 32 lakh elected representatives and functionaries annually.
Strengthens local governance and progress toward Sustainable Development Goals (SDGs) .

- Financial Accountability:
Preparation of at least 2.55 lakh online audit plans annually.
Timely audits through AuditOnline to improve transparency.

Digital Platforms Strengthening Panchayat Governance

The scheme builds on existing digital systems rather than creating a separate governance infrastructure.

Conclusion

The Pradhan Mantri Viksit Gram Swaraj Yojana is a comprehensive effort to strengthen decentralised, participatory and accountable rural governance. With a total outlay of ₹7,395.55 crore over five years, it aims to build the capacity of over 2.55 lakh Panchayats and 32 lakh functionaries through integrated planning, digital tools like eGramSwaraj and PANCHAM, and stronger financial accountability.
The scheme is well-timed with the 16th Finance Commission period, which has recommended ₹4.35 lakh crore for Rural Local Bodies, and it seeks to ensure that Panchayats can effectively use these funds. However, its success will depend on genuine community participation, effective implementation at the grassroots, and the ability of Panchayats to translate local priorities into real development outcomes — ultimately contributing to inclusive rural development and the vision of Viksit Bharat @2047.

UPSC Civil Services Prelims PYQ (Related Topic)

Q. Local self-government can be best explained as an exercise in (2017)
(a) Federalism
(b) Democratic decentralisation
(c) Administrative delegation
(d) Direct democracy

Answer: (b) Democratic decentralisation.

Khelo India Sports Goods Manufacturing Scheme

Why in News?

The Union Cabinet approved the Khelo India Sports Goods Manufacturing Scheme. It aims to:
- Strengthen domestic sports goods manufacturing
- Attract investment
- Promote innovation
- Boost exports
- Position India as a globally competitive manufacturing hub
The scheme links sports development with industrial growth, skill development, employment generation and entrepreneurship. It complements initiatives like Khelo India and Khelo Bharat Niti 2025.



Key Facts About the Scheme

- Announcement: Announced in the Union Budget 2026–27 and approved by the Union Cabinet.
- Total Outlay: ₹1,856.67 crore for FY 2026–27 to FY 2033–34.
- Objectives:
Attract private investment
Expand domestic production
Reduce import dependence
Generate employment in the sports goods industry
- Integrated Support: Brings together support for:
Investment
Technology
Innovation
Skill development
Market expansion
- Global Competitiveness: Aims to position India as a globally competitive hub for design, development and manufacture of high-quality, affordable sports goods.
- Growing Opportunity: India's sporting ecosystem is expanding beyond participation and infrastructure toward manufacturing, employment and exports.
- Established Manufacturing Base:
- Jalandhar (Punjab) and Meerut (Uttar Pradesh) are major clusters.
- Supported by skilled workers and a large network of entrepreneurial MSMEs.

MSME-Led Production:
- Small and micro enterprises account for nearly 90% of sports goods production.
- Important source of local employment, entrepreneurship and industrial development.

Key Interventions Under the Scheme

1. Integrated Sports Goods Manufacturing Zones (SGMZs)
- Up to four integrated zones, each exceeding 300 acres.
- Developed through convergence with the BHAVYA Scheme and NICDC Industrial Parks.

Zones will bring together:
- Manufacturers and suppliers
- Testing facilities
- Design and prototyping centres
- Ancillary enterprises

Benefit: Improves manufacturing efficiency.

2. Investment and Production Expansion
- Combined outlay: ₹1,130 crore.
- Two components:
- Anchor Investment Support:
- 20% capital expenditure support to anchor investors investing at least ₹100 crore to set up facilities within SGMZs.

Turnover Linked Support:
- Incentives of up to 15% to manufacturers investing ₹10 crore or more.
- Encourages production and capacity expansion.

3. Cluster and MSME Upgradation
Existing sports goods clusters receive support for:
- Upgrading common facilities
- Shared infrastructure
- Through cost-sharing with States.
- Enables MSMEs to improve manufacturing capabilities and competitiveness.

4. International Certification Support
Allocation: ₹105 crore.
- Supports certification from International Sports Federations.

Covers:
- 70% of first-time certification costs
- 50% of renewal costs

Benefit: Facilitates global market access.

5. Research and Start-up Innovation
- Centres of Excellence in leading educational and research institutions.

Promote research in:
- Sports equipment
- Materials
- Protective gear
- Advanced manufacturing
- Convergence with Anusandhan National Research Foundation (ANRF) for research co-funding.
- DPIIT-registered sports start-ups eligible for grants of up to ₹20 lakh for developing and commercialising innovative products.

6. Industry-Aligned Skill Development
- Programmes implemented with the Ministry of Skill Development and Entrepre-



neurship and industry stakeholders.
- Develops a workforce aligned with the evolving needs of sports goods manufacturing.

7. Global Promotion of Indian Sports Goods

- India Sports Expo and Brand India campaign.
- Supported by branding, outreach and market development under the Export Promotion Mission.
- Enhances global visibility and facilitates access to international markets.

Current Status of India's Sports Goods Industry

Manufacturing Clusters:

Jalandhar and Meerut together have:
- Over 250 exporting units
- 1,000 domestic-market units
- 4,000 micro enterprises
- Nearly 20,000 household units

Other centres: Ludhiana (bicycles), Delhi and Mumbai (sports accessories and apparel).

MSME-Led Production:
- Nearly 90% of production by small and micro enterprises.
- Important source of entrepreneurship, local livelihoods and employment.

Strong Export Presence:
- India manufactures cricket bats, protective equipment, inflatable balls, gym and athletic training equipment.
- UK, US and Australia together account for over half of India's sports equipment exports.

Global Market Strength:
- Indian manufacturers and brands account for around 75–80% of the global cricket bat market.
- India holds an estimated 30–35% share of the cricket helmet market.

Cross-Industry Linkages:
- Draws on capabilities in rubber, polymers, composites, wood and metals.
- Creates opportunities to strengthen supplier networks and diversify into related manufacturing industries.

Untapped Market Potential:
- India's domestic sports goods market: US$2.5 billion (including ~US$0.5 billion in equipment).
- Global sports equipment exports (2024): ~US$52 billion.
- India's equipment exports: only ~US$275 million — indicating huge scope for expansion.

Export and Employment Potential:
- India's sports equipment exports could reach approximately US$8.1 billion by 2036.
- Could generate around 54 lakh additional direct and indirect jobs.

Major Sporting Events:
- Los Angeles Olympics 2028
- Commonwealth Games 2030 (Ahmedabad)
- Brisbane Olympics 2032
- India's planned bid for 2036 Olympics
- These create opportunities for increased demand, manufacturing participation and international market expansion.

Other Government Initiatives Supporting the Sports Ecosystem

BHAVYA – Industrial Infrastructure
- Bharat Audyogik Vikas Yojna (BHAVYA) provides 100 plug-and-play industrial parks with an allocation of ₹33,660 crore.
- Parks offer ready-built factory sheds, testing facilities, warehousing and essential infrastructure.
- SGMZs will leverage BHAVYA infrastructure.

National Industrial Corridor Development Corporation (NICDC)
- Industrial corridor programme covers 20 industrial smart cities across 13 States.
- Four completed as of September 2026.
- Infrastructure will support dedicated sports goods manufacturing zones.
- Anusandhan National Research Foundation (ANRF)
- Promotes collaboration among research institutions, universities and industry.

Convergence with the scheme will encourage R&D in:
- Advanced materials
- Protective equipment
- Product design
- Manufacturing technologies

Startup India
- Supports entrepreneurship through funding, investment facilitation and credit guarantees.
- As of 31 March 2026: over 2.23 lakh recognised startups, generating more than 23.36 lakh direct jobs.
- Sports goods scheme complements this through grants of up to ₹20 lakh for eligible sports technology startups.

Export Promotion Mission

Outlay: ₹25,060 crore for FY 2025–26 to FY 2030–31.

Supports:
- Export finance
- Quality compliance
- Logistics
- International market access
- Components Niryat Protsahan and Niryat Disha will complement sports goods initiatives through branding, trade promotion, certification and overseas buyer connections.

Production Linked Incentive (PLI) Schemes
- Support competitive manufacturing across 14 sectors.
- As of June 2026:
- Attracted ₹2.6 lakh crore in investment
- Generated ₹23.8 lakh crore in production and sales
- Supported exports exceeding ₹15.5 lakh crore
- Created 14.6 lakh jobs
- Sports goods are not a separately designated PLI sector, but the broader approach shows the role of production incentives.

Khelo India Scheme

Launched: 2017.

Brought the Rajiv Gandhi Khel Abhiyan, Urban Sports Infrastructure Scheme and National Sports Talent Search Scheme under a common framework.

Five Pillars:

1. Talent identification
2. Capacity building
3. Sports science and technology
4. Competitions and leagues
5. Sports infrastructure

Progress (as of July 2026):

349 sports infrastructure projects approved with an investment of 3,176 crore

1,067 Khelo India Centres
267 supported academies
2,745 Khelo India Athletes receiving support for coaching, equipment, medical care and monthly allowances

Khelo Bharat Niti 2025



About: Policy recognises sport as a driver of economic growth, entrepreneurship, investment and sports start-ups. The manufacturing scheme reinforces this by connecting sports development with production, innovation, employment and exports.

Sport for Nation-Building:
Positions sport as an instrument of nation-building, economic growth and social inclusion, aligned with Viksit Bharat.
Grassroots to Elite: Emphasises early talent identification, nurturing of athletes, competitive leagues and sports infrastructure across rural and urban areas.
Sport for All: Promotes sports through the school curriculum under NEP 2020. Encourages participation by women, marginalised groups, tribal communities and persons with disabilities.

Conclusion

The Khelo India Sports Goods Manufacturing Scheme is a well-designed effort to connect India's sporting ambitions with industrial growth. With an outlay of ₹1,856.67 crore, it addresses the entire value chain — from manufacturing zones and investment incentives to research, certification, skill development and export promotion. India already has strong foundations: Jalandhar and Meerut are established clusters, MSMEs drive 90% of production, and Indian manufacturers dominate the global cricket bat market. Yet the gap between current exports (US$275 million) and potential (US$8.1 billion by 2036) shows how much remains untapped. The scheme's success will depend on effective implementation, stronger industry–academia linkages, skill development and export diversification. If these come together, India can emerge as a competitive sports goods manufacturing hub, contributing to Make in India and Viksit Bharat@2047.

UPSC Civil Services Prelims PYQ (Related Topic)

Q. Consider the following pairs with regard to sports awards (2023)
How many of the above pairs are correctly matched?



(a) Only one
(b) Only two
(c) All three
(d) All four
Answer: (b) Only two.

UN CBD COP-17: Adoption of the Yerevan Pathway

Why in News?

The 17th Conference of the Parties (COP-17) to the UN Convention on Biological Diversity (CBD) concluded in Yerevan, Armenia, adopting the Yerevan Pathway.
India's stand: Emphasised the urgent need for adequate, predictable finance and technology transfer from developed nations to implement the Kunming-Montreal Global Biodiversity Framework (KMGBF) effectively.







Key Outcomes of CBD COP-17

1. Adoption of the "Yerevan Pathway"
Context: The first global review of the KMGBF showed insufficient progress.
Purpose: Nations adopted the Yerevan Pathway to accelerate action and implementation ahead of the 2030 deadline.
What it calls for:
Align national budgets and economic decisions with biodiversity goals
Reform harmful subsidies
Strengthen monitoring mechanisms

2. Sevan Guidelines for Indigenous Peoples
Nations adopted the Sevan Guidelines to establish operational rules for a new permanent subsidiary body under Article 8(j) of the Convention.
Nature: These are voluntary guidelines.
Purpose: Empower Indigenous Peoples and Local Communities (IPLCs) by ensur-

ing their:
- Rights
- Roles
- Traditional ecological knowledge

· Are structurally integrated into global biodiversity policy and decision-making.

3. New Biodiversity Funding Pledges

Nearly USD 2 billion in new biodiversity funding announced at the summit.

Includes:

USD 560 million under the Global Environment Facility (GEF) latest replenishment. GEF was established at the 1992 Rio Earth Summit.

USD 500 million through the Species Recovery Alliance.

Asian Development Bank launched a biodiversity bond and investment incubator to promote nature-related investment.

4. Diluted Stance on Harmful Subsidies

Reforming subsidies harmful to nature was highly contentious.

Attempts: Strong language to "urge" countries to scale up elimination of harmful subsidies was opposed by nations including Saudi Arabia, Russia and India.

Final text: Softened to merely "encourage" countries to accelerate reform "in accordance with national circumstances" .

5. Digital Sequence Information (DSI) and the Cali Fund

Cali Fund: A benefit-sharing mechanism for genetic data, operationalised at COP-16 (2024) .

At COP-17: Negotiations continued, but technical disagreements prevented a definitive resolution.

Agreed: A pilot phase allowing the Steering Committee to issue certificates to companies that make voluntary contributions.

6. Pending Decisions

COP-17 left several institutional and financing questions unresolved:
- Aspects of the Article 8(j) body's governance
- The future biodiversity-finance mechanism
- Full implementation arrangements of the Cali Fund

· Essentially "kicking the can down the road" to COP18, scheduled in Quito, Ecuador, in 2028.

India's National Statement at CBD COP-17

Demand for Equity:
- Implementing the KMGBF must align with sovereign national priorities.
- Must be backed by predictable finance, capacity building and technology transfer from developed to developing nations.

Support for the Cali Fund:
- India backed the multilateral benefit-sharing mechanism for Digital Sequence Information (DSI) on genetic resources.
- Utilising the newly operationalised Cali Fund.

Biosafety & Synthetic Biology:
- Advocated a strictly science-based, risk-proportionate and precautionary approach.

Vast Conservation Network:
- 1,134 Protected Areas
- 103 Ramsar Sites
- 57 Biodiversity Heritage Sites
- 18 Biosphere Reserves (13 in the UNESCO MAB network)

Decentralised Governance:
- Emphasised alignment of domestic laws with the CBD through village-level Biodiversity Management Committees (BMCs) .
- Ensures grassroots Access and Benefit Sharing (ABS) .

Flagship Ecological Schemes Showcased:

MISHTI: For mangrove ecosystem restoration

Amrit Dharohar: For sustainable wetland conservation

International Big Cat Alliance (IBCA): Global cooperation to protect seven big cat species

Mission LiFE and "Ek Ped Maa Ke Naam": Citizen-led environmental stewardship

Kunming-Montreal Global Biodiversity Framework (KMGBF)

About:
- International agreement adopted in 2022 at COP-15 to the UN CBD.
- Serves as the global roadmap to halt and reverse nature loss.



- Replaced the earlier Aichi Biodiversity Targets (2011–2020) .

Vision and Mission:

- 2030 Mission: Take urgent action to halt and reverse biodiversity loss, aiming for a "nature-positive" world by 2030.

- 2050 Vision: A world where humanity is "living in harmony with nature" .

Structure:
- 4 overarching Goals for 2050
- 23 action-oriented Targets for 2030

Implementation and Funding:
- Not legally binding — like the Paris Agreement, relies on voluntary national commitments, though it sets a strong political and moral baseline.

National Biodiversity Strategy and Action Plans (NBSAPs): Countries must update domestic NBSAPs to align with the 23 global targets.

Global Biodiversity Framework Fund (GBFF):
- Dedicated fund hosted by the GEF.
- Directly finances KMGBF implementation.
- Special focus on developing nations, Small Island Developing States (SIDS) and Indigenous communities.

India's National Biodiversity Strategy and Action Plan (NBSAP)

About:
- First launched in 1999.
- Updated in 2008, 2014 and 2024 (2024–2030).
- Adopts a Whole-of-Government and Whole-of-Society approach, aligned with the KMGBF.

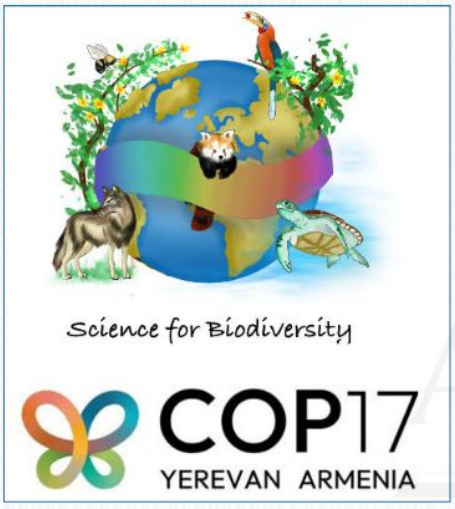
Why India's framework matters:
- India harbours nearly 8% of the world's known plant and animal species.
- Includes 9.24% of global plant species.
- Demands a strong shield against habitat degradation.

The 30% Restoration Target:
- Major priority is effective restoration of at least 30% of degraded terrestrial, inland water, and marine and coastal ecosystems.
- Enhances ecological integrity and connectivity.

Focus on Threat Reduction:

- 8 of the 23 targets are dedicated to mitigating direct threats:
- Land and sea use change
- Pollution
- Climate change
- Species overexploitation
- Addressing Socio-Ecological Challenges:

- Goes beyond conservation to tackle:
- Food insecurity



- Water scarcity
- Unsustainable livelihoods
- Human-wildlife conflicts
- Disaster risks

Financial Mobilisation:

- **Projected annual average biodiversity expenditure required for 2024-25 to 2029-30: ₹81,664 crore.**
- A massive amount highlighting the need for comprehensive financial assessments and global support.

Conclusion

CBD COP-17 delivered a mixed outcome. The Yerevan Pathway and Sevan Guidelines give direction for accelerating biodiversity action and strengthening the role of Indigenous communities. Nearly USD 2 billion in new funding pledges and the ADB's biodiversity bond are welcome steps. However, the dilution of language on harmful subsidies and the failure to resolve key issues like the Cali Fund's full implementation show the gap between ambition and action. India's position was clear — ambitious targets mean little without predictable finance and technology transfer from developed nations. India also showcased its strong domestic record with 1,134 Protected Areas, 103 Ramsar Sites and 57 Biodiversity Heritage Sites, and a forward-looking NBSAP 2024–2030 with an estimated annual funding need of ₹81,664 crore. Ultimately, achieving the KMGBF targets by 2030 and the 2050 vision of living in harmony with nature will require predictable finance, technology transfer and equitable cooperation with community-led conservation at the centre.

UPSC Civil Services Prelims PYQ (Related Topic)

Q. Consider the following statements (2023):

1. **In India, the Biodiversity Management Committees are key to the realisation of the objectives of the Nagoya Protocol.**
2. **The Biodiversity Management Committees have important functions in determining access and benefit sharing, including the power to levy collection fees on the access of biological resources within its jurisdiction.**

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

Answer: (c) Both 1 and 2.

