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From

14th Sep *to* **19th Sep 2026**

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INTERNATIONAL RELATIONS

1.1. THE HAGUE COURT AND THE KOSOVO WAR

Context

- Hashim Thaçi, the former President of Kosovo and a prominent former leader of the Kosovo Liberation Army (KLA), has been sentenced to 25 years in prison by special European Union-backed court at The Hague.



Escalation of Conflict & Kosovo's Independence

- The Kosovo Liberation Army (KLA) was formed — an ethnic Albanian militant force seeking Kosovo's independence from Serbia and Yugoslavia.
- **War & Intervention: KLA attacks** triggered a **Serbian military crackdown**, causing the displacement of **hundreds of thousands** and nearly **13,000 deaths**, mostly ethnic Albanians.
- **NATO Intervention:** The hostilities ended after NATO launched air strikes and bombardments against Serbian targets, forcing Serbian forces to withdraw.
- **Declaration of Independence:** In 2008, Kosovo unilaterally declared independence from Serbia. While recognized by the United States and several European nations, it is not recognized as an independent state by Serbia, **India, or the United Nations**.

What Was the Trial For?

- The case was heard by the **Kosovo Specialist Chambers**, a special tribunal backed by the European Union and constituted in **The Hague in 2016**.
- Its mandate was to examine crimes linked to the KLA's insurgency and the broader conflict of the 1990s.
- The tribunal's creation followed a Council of Europe report (the "Marty report," 2010) that alleged the KLA had run secret detention centres where Serbians were subjected to inhumane treatment, including claims of organ trafficking from prisoners.

What is the Kosovo Specialist Chambers?

- The KSC is a specialized domestic (national) court of Kosovo, not a UN or international tribunal.
- While legally attached to Kosovo's judicial hierarchy, it is physically located in The **Hague, Netherlands**.
- The KSC was created following an Exchange of Letters between Kosovo and the European Union in 2014.
- The Kosovo Assembly subsequently adopted Article 162 of the Kosovo Constitution and the Law on Specialist Chambers and Specialist Prosecutor's Office on 3 August 2015.

Structure of the KSC; The KSC consists principally of:

1. Chambers

- Perform the **judicial functions**.
- Include **international judges**.
- Have panels for **Pre-Trial, Trial, Appeals, Supreme Court and Constitutional Court** functions.

2. Registry

- Provides administrative and judicial support
- Handles functions including **detention, legal aid, victims' participation, interpretation and translation**.



Q. Consider the following statements regarding the recent verdict involving Hashim Thaçi:

1. Hashim Thaçi was a former President of **Kosovo** and a former commander of the **Kosovo Liberation Army (KLA)**.
2. The **Kosovo Specialist Chambers** that delivered the verdict is located in **The Hague, Netherlands**.
3. The Kosovo conflict primarily took place during **1998–1999** and involved the KLA and Serbian/Yugoslav forces.
4. The Kosovo Specialist Chambers is a judicial organ of the **European Union**.

Which of the statements given above are correct?

- (a) 1, 2 and 3 only
 (b) 1 and 4 only
 (c) 2 and 3 only
 (d) 1, 2, 3 and 4

Answer: (a) 1, 2 and 3 only

- **Statement 1 is Correct:** Hashim Thaçi was a prominent KLA leader and later served as President of Kosovo.
- **Statement 2 is Correct:** The **Kosovo Specialist Chambers (KSC)** is based in **The Hague, Netherlands**.
- **Statement 3 is Correct:** The **Kosovo War** occurred mainly in **1998–1999**, involving the KLA and Serbian/Yugoslav forces.
- **Statement 4 is Incorrect:** The KSC is **not an EU judicial organ**. It was established under **Kosovo's legal framework** and operates with substantial international, including EU, support.

1.2. THE 1991 AGREEMENT ON ADVANCE NOTICE ON MILITARY EXERCISES

Context

- Recently, India summoned Pakistan's envoy after a Pakistani naval vessel collided with an Indian warship in the North Arabian Sea, with New Delhi terming the manoeuvre unsafe and citing a violation of the three-nautical-mile provision under the **1991 India-Pakistan maritime pact**. No major damage was reported



About the 1991 Agreement

- Military Exercises:** Major exercises near each other's territory should be avoided; where conducted, they must follow prescribed rules and be notified in advance
- Advance Notice: 15 days** for specified air and naval exercises, **60 days** for corps-level exercises and **90 days** for army-level exercises
- Information Sharing:** Either side can seek details on the **force assembly, direction, scale and duration** of an exercise
- Major Naval Exercise:** Defined as an exercise involving **six or more destroyer- or frigate-sized combat vessels** operating together and entering the other country's EEZ
- Article 10:** Naval ships and submarines of both countries must maintain a minimum distance of **3 nautical miles** from each other while operating in international waters to prevent accidents
- Aircraft Separation:** Combat aircraft must maintain a **10-km separation** from each other's airspace, including Air Defence Identification Zones (ADIZs)
- Special Provision:** A **5-km separation** applies to aircraft operating from specified airfields, including **Jammu, Pathankot, Amritsar and Suratgarh** in India and **Pasrur, Lahore, Vehari and Rahimyar Khan** in Pakistan

Q. With reference to the 1991 India-Pakistan Agreement on Advance Notice on Military Exercises, consider the following statements:

- Under Article 10 of the agreement, naval vessels and submarines of both nations must maintain a minimum separation distance of 3 nautical miles from each other in international waters to prevent accidents.
- For all types of land, naval, and air force exercises, a mandatory advance notification period of 90 days must be provided.
- Combat aircraft operating from specified airfields such as Jammu, Pathankot, Lahore, and Pasrur are required to maintain a separation distance of 5 km from each other's airspace.

Which of the statements given above are correct?

- (a) 1 and 2 only
(b) 1 and 3 only

(c) 2 and 3 only

(d) 1, 2, and 3

Answer: (b) 1 and 3 only

Explanation:

- **Statement 1 is correct:** Under Article 10, naval ships and submarines of both countries are mandated to maintain a minimum distance of 3 nautical miles from each other while operating in international waters to prevent accidents.
- **Statement 2 is incorrect:** Advance notice requirements vary by scale and type of exercise—15 days for specified air and naval exercises, 60 days for corps-level exercises, and 90 days specifically for army-level exercises.
- **Statement 3 is correct:** A special provision under the pact mandates a 5-km airspace separation for aircraft operating from specified airfields, including Jammu, Pathankot, Amritsar, and Suratgarh in India, and Pasrur, Lahore, Vehari, and Rahimyar Khan in Pakistan.

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Prelims Test Series

2.1. SURGE IN GLOBAL COPPER PRICES AND ITS DOMESTIC IMPACT

Context

- Copper prices have surged to record levels, with the **London Metal Exchange (LME)** copper touching an all-time high of \$14,779 per tonne, increasing input costs for electric vehicles (EVs), consumer electronics, electrical wires and engineering goods.



Why are Copper Prices Rising?

- LME Benchmark Pressure:** Physical contracts worldwide index directly to London Metal Exchange (LME) prices, which spiked as exchange inventories dwindled.
- Mine Supply Deficits:** Operational disruptions in top producers like Chile cut concentrate output, creating an upstream supply squeeze.
- Tariff Stockpiling & Arbitrage:** Front-loaded buying by US importers ahead of anticipated tariffs diverted global flows and depleted spot warehouse stocks.
- Clean-Tech & AI Demand:** Rapid rollout of copper-heavy EVs, power grids, and AI data centres created structural, long-term consumption pressure.

Global Distribution of Copper Reserves & Production

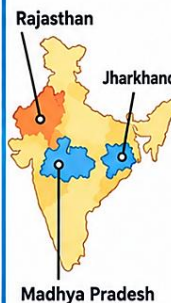


- Chile is the largest producer** of mined copper, accounting for about **5.3 million tonnes** in 2025.



- Peru, Democratic Republic of the Congo (DRC), China and the United States** are other major copper-producing countries.

Distribution of Copper in India



- Madhya Pradesh** – Largest copper-producing state; Malanjkhand Mine in Balaghat district is the major copper mine.
- Rajasthan** – Major producer; Khetri Copper Belt in Jhunjhunu district is an important copper-mining region.
- Jharkhand** – Important copper-bearing region; Singhbhum Copper Belt in East Singhbhum district is a major deposit area.

About The London Metal Exchange (LME)



- Established in 1877** in London.



- Headquartered in London, UK.**



- Ownership:** Owned by **Hong Kong Exchanges and Clearing (HKEX)** since 2012.



- Metals Traded:** Specializes in **base metals** (such as copper, aluminum, zinc, nickel, lead, and tin), alongside ferrous and precious metals.

Sectors Affected - Cost Pressure Chain

- **Electric Vehicles (EVs):** Higher input costs for wiring and electric motors.
- **Consumer gadgets and appliances:** Rising component costs.
- **Electric wires and engineering goods:** Direct raw material cost increase.
- Indian industry imports **~85% of its copper requirements**, making India particularly vulnerable to global price cascades.

Aluminium as a Substitute

- Industry (EVIA — Electric Vehicle Industry Alliance) suggests **aluminium** is emerging as an alternative:
 - **61% of copper's electrical conductivity.**
 - **6× larger cross-sectional area** required for the same electrical load.
 - Aluminium conductors therefore need to be larger in size to carry the same electrical load.
- Copper remains difficult to replace in several applications requiring **compactness and high conductivity**.

Impact on Indian Industries

- India imports around **85% of its copper requirements**, making domestic industries vulnerable to global price fluctuations.
- Higher copper prices can raise **input and production costs** for electrical goods, engineering products, **EVs and consumer electronics**.
- The impact is greater in sectors where **copper has limited substitutes**, potentially putting pressure on manufacturers' profit margins.

Q. With reference to copper and its industrial use, consider the following statements:

1. Electric vehicles utilize significantly less copper compared to conventional internal combustion engine vehicles due to battery miniaturization.
2. India relies on imports for more than 80% of its domestic copper requirements.
3. Aluminium possesses higher electrical conductivity than copper, making it the preferred substitute in compact electric vehicle motors.

Which of the statements given above is/are correct?

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

Answer: (a) 2 only

Explanation:

- **Statement 1 is incorrect:** Electric vehicles (EVs) require approximately 3 to 4 times more copper than traditional combustion vehicles due to electric motors, battery packs, inverters, and charging harnesses.

- **Statement 2 is correct:** India is heavily import-dependent, importing around 85% of its total copper requirements.
- **Statement 3 is incorrect:** Aluminium has only about 61% of the electrical conductivity of copper; an aluminium conductor must be roughly 1.6 times larger in cross-section to transmit the same electrical load, limiting its feasibility in tight, high-heat EV motors.

2.2. EPFO WAGE CEILING RAISED TO ₹25,000

Context

- Recently, The Union Cabinet has approved an increase in the wage ceiling for mandatory EPFO coverage from ₹15,000 to ₹25,000 per month. The ceiling was last revised to ₹15,000 in September 2014.



What Has Changed?

Earlier	New
₹15,000/month wage ceiling	₹25,000/month
Employees above the ceiling were not automatically covered	Employees earning up to ₹25,000 can come under mandatory EPFO coverage, subject to applicable provisions
Narrower coverage	51 lakh+ additional employees expected to be covered

EPFO and Its Three Key Schemes

- The expansion will extend access, under applicable scheme provisions, to three major components of EPFO social security:
 - **Employees' Provident Fund (EPF):** Provides accumulated retirement savings to employees.
 - **Employees' Pension Scheme (EPS), 1995:** Provides pension-related benefits to eligible members.
 - **Employees' Deposit Linked Insurance Scheme (EDLI), 1976:** Provides insurance benefits linked to the employee's EPF membership.
- EPFO administers these schemes under the **Ministry of Labour and Employment**.

Financial Implication

- The decision is estimated to bring over 51 lakh additional employees under mandatory EPFO coverage.
- The annual Government outgo is estimated at around **₹11,339 crores**, compared with existing annual budgetary support of about **₹10,250 crore**.
- The measure is also expected to strengthen **formalisation of employment** and wider social-security coverage.

EPFO: Contribution Mechanics

Contribution Mechanics

Standard rate — **12% of Basic + DA**, contributed by **both employee and employer**

Split-up of Employer's 12% share

3.67% EPF 8.33% EPS

EPS portion is subject to the wage ceiling cap

Government Contribution: Central Government contributes **1.16%** of the wage ceiling toward the Employee's Pension Scheme (EPS).

About EPFO

Statutory Body Status:
Established under the Employees' Provident Fund and Miscellaneous Provisions Act, 1952.

Administrative Ministry:
Functions under the administrative control of the Ministry of Labour and Employment.

Mandatory vs. Voluntary: Coverage is **mandatory** for employees earning below the wage threshold; contributions beyond the wage limit are **voluntary**.

Q. Consider the following statements regarding the Employees' Provident Fund Organisation (EPFO):

1. The wage ceiling for mandatory EPFO coverage has been increased from ₹15,000 to ₹25,000 per month.
2. The Employees' Pension Scheme (EPS) and Employees' Deposit Linked Insurance Scheme (EDLI) are administered by the EPFO.
3. EPFO functions under the Ministry of Finance.

Which of the statements given above is/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

- **Statement 1 is correct:** The wage ceiling for mandatory EPFO coverage has been raised from **₹15,000 to ₹25,000 per month**.
- **Statement 2 is correct:** EPFO administers **EPF, EPS and EDLI**.
- **Statement 3 is incorrect:** EPFO functions under the **Ministry of Labour and Employment**, not the Ministry of Finance.

2.3. GLOBAL GENDER GAP INDEX 2026

Context

- Recently, the **World Economic Forum (WEF)** released the 20th edition of the Global Gender Gap Report 2026, benchmarking gender parity across 145 economies, with **India ranking 131st** and closing 64.5% of its overall gender gap against the global average of 69.2%, while Iceland retained the highest position in the index.

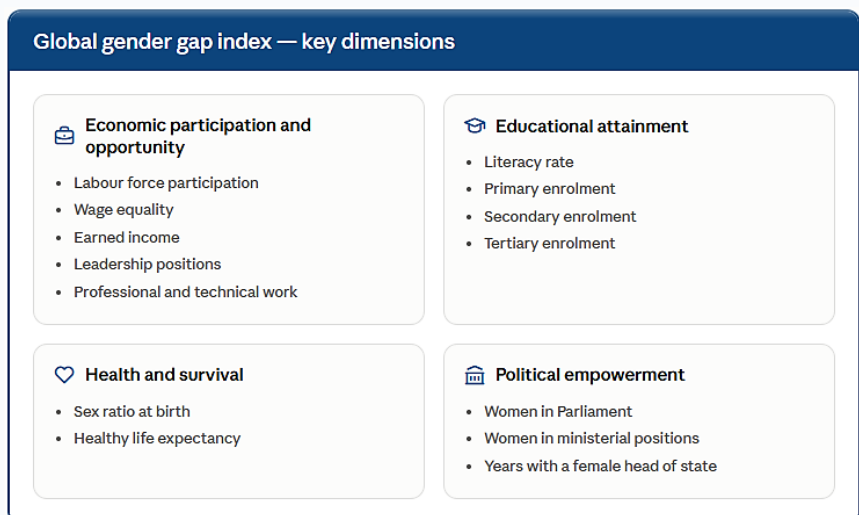


What is the Global Gender Gap Index?

- The **Global Gender Gap Index (GGGI)** was introduced by the **World Economic Forum in 2006** to measure the relative gaps between women and men across key areas of social and economic life.
- Scoring Methodology:** Scores range from **0 to 1** (or 0% to 100%), where **1.0 represents full gender parity** and **0 represents complete disparity**.
- Key Principle:** The index evaluates gender gaps in outcomes rather than the absolute level of available resources or overall development of a nation.

Global Rankings Overview (2026)

- Top Performers:** Iceland maintained the **1st rank globally** (the long-standing global leader), followed by **Finland (2nd)** and **Norway (3rd)**.
- Bottom Performers:** Chad was the lowest-ranked nation, joined by Iran and Pakistan in the bottom three slots.
- Countries Ranked Below India:** 14 countries scored lower than India, including Papua New Guinea, Kuwait, Oman, Qatar, Tajikistan, Saudi Arabia, Egypt, Morocco, Mali, Algeria, and DR Congo.



India's Performance

- India retained the **131st position** with an overall gender parity score of **64.5%**.
- Its score has improved by **4.3 percentage points since 2006**, with much of the long-term improvement coming from **Educational Attainment**.

India's Dimension-Wise Summary

Dimension	Score	Key Takeaway
Political Empowerment	24.5%	Highest rank (67th globally); Parliament (16.1%) and ministerial parity (5.9%) remain low.
Educational Attainment	96.6%	Full parity in secondary and tertiary enrolment; adult literacy lags at 82.5%.
Health and Survival	95.6%	Score improved, but sex ratio at birth remains below the 2006 baseline.
Economic Participation & Opportunity	41.2%	Lowest-performing area; labour force parity stands at 44.1%.

Q. Consider the following statements regarding the Global Gender Gap Index 2026:

1. It is released by the World Economic Forum.
2. It measures gender parity across four dimensions.
3. India recorded its highest score in Economic Participation and Opportunity in 2026.
4. The index measures the absolute level of development of women in an economy.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 1, 2 and 3 only
- (c) 2 and 4 only
- (d) 1, 2, 3 and 4

Answer: (a) 1 and 2 only

- **Statement 1 is correct:** The index is published by the **World Economic Forum**.
- **Statement 2 is correct:** It measures gender gaps across **Economic Participation and Opportunity, Educational Attainment, Health and Survival, and Political Empowerment**.
- **Statement 3 is incorrect:** India's strongest dimension in 2026 is **Educational Attainment (96.6%)**, not Economic Participation and Opportunity.
- **Statement 4 is incorrect:** The index measures **relative gender gaps/parity**, not the absolute level of development of women.

2.4. CAZRI MOTH BEAN VARIETIES

Context

- **ICAR-CAZRI, Jodhpur** developed four moth bean varieties- **CAZRI Moth-4, 5, 6 & 7**- that withstood a 35-day dry spell during Kharif 2026, showing strong potential for climate-resilient agriculture in western Rajasthan.



What is Moth Bean?

- Moth bean is an important **Kharif pulse crop of the hot arid regions of western Rajasthan**, cultivated over nearly **10 lakh hectares**.
- **Native to South Asia**, it is primarily cultivated in hot, rainfed and marginal desert regions, particularly the Thar Desert of western Rajasthan, as well as parts of Gujarat, Haryana and Punjab.
- Planted at the onset of the monsoon rains around June or July and harvested in September or October.
- Highly drought-resistant and suited for hot, arid, or semi-arid regions.

Significance

- **Nutritional Security:** Provides **plant-based protein, essential amino acids and minerals**, particularly benefiting resource-poor rural communities in desert regions.
- **Livestock Support:** Offers **protein-rich green and dry fodder (pala)** for livestock during **post-monsoon and drought periods**.
- **Dryland Agriculture:** Supports **crop rotation and mixed cropping** while contributing to **sand-dune stabilisation**.
- **Climate Resilience:** Its adaptability to harsh arid conditions strengthens **dryland farming systems** amid increasing climate variability.
- **Pulse Self-Reliance:** Contributes to India's efforts towards **greater self-sufficiency in pulse production**.

About CAZRI

- **Full Name:** Central Arid Zone Research Institute (CAZRI).
- **Headquarter:** Jodhpur, Rajasthan.
- **Ministry:** It is an autonomous organisation under the Department of Agriculture Research and Education (DARE) of the Ministry of Agriculture and Farmers Welfare of Government of India.
- **Focus:** It conducts research on agriculture and natural-resource management in arid and desert regions.
- **Significance:** CAZRI develops climate-resilient crops and technologies suited to the harsh and water-scarce conditions of arid regions.

Q. With reference to CAZRI-developed moth bean varieties, consider the following statements:

1. Moth bean is an important pulse crop of the hot arid regions of western Rajasthan.
2. Developmental plasticity enables the varieties to adjust their growth according to available soil moisture.
3. The CAZRI varieties demonstrated resilience during a prolonged dry spell during Kharif 2026.

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

Explanation:

- **Statement 1 – Correct:** Moth bean is an important pulse crop of the hot arid regions of western Rajasthan.
- **Statement 2 – Correct:** Developmental plasticity allows the crop to adjust growth and maturity according to environmental conditions and soil-moisture availability.
- **Statement 3 – Correct:** The varieties withstood a prolonged **35-day dry spell** during Kharif 2026.

2.5. NSO RELEASES FIRST-EVER DISTRICT-LEVEL DATA ON UNINCORPORATED NON-FARM SECTOR

Context

- For the first time, the **National Statistics Office (NSO)** under **MoSPI** released district-level data for small, informal (unincorporated) **non-agricultural** businesses. It uses data from the **Annual Survey of Unincorporated Sector Enterprises (ASUSE) 2025** to help design targeted policies at the local district level.



Key Institutional Survey Facts

Item	Detail
Releasing body	National Statistics Office (NSO) , under MoSPI (Ministry of Statistics & Programme Implementation)
Survey base	ASUSE 2025 (Annual Survey of Unincorporated Sector Enterprises)
Novelty	First-ever district-level estimates from a large-scale nationwide enterprise survey
Districts covered	757 out of 770 districts in the ASUSE 2025 sampling frame
Districts excluded	District-level estimates were not generated for Delhi (due to merged sampling strata) or Chandigarh and Lakshadweep (each treated as a single UT-level stratum)

What ASUSE Covers

- **Geographic coverage:** Whole of India, rural and urban (**except some inaccessible Andaman & Nicobar villages**).
- **Sectors covered:** **Manufacturing, Trade, and Other Services** (non-agricultural, unincorporated).
- **Ownership types covered:** Proprietorship, partnership (**excluding LLPs**), cooperatives, societies/trusts.
- **Sampling method:** Multi-stage stratified sampling.

- First Stage Units (FSUs): Census villages (rural) / UFS blocks (urban) — exception: **rural Kerala uses Panchayat wards** as FSUs.
- Ultimate Stage Units (USUs): Establishments.
- **Data collection: CAPI** (Computer Assisted Personal Interviewing) via tablets; oral enquiry, monthly reference period.

Key Economic Findings

- **Geographical Concentration:**
 - **Top 10 Districts:** Account for ~10% of all establishments, workforce, and Gross Value Added (GVA). Located across 4 states: Gujarat, Telangana, Uttar Pradesh, and West Bengal.
 - **Top 50 Districts:** Account for nearly **one-third (33%)** of the sector's total establishments, workforce, and GVA across 12 states.
 - **Scale Distribution:** ~33% of districts have >1 lakh establishments; 16 districts have >5 lakh establishments (led by West Bengal with 8 districts).
- **Productivity Metrics:**
 - **National Benchmark:** All-India average GVA per worker is **₹1,56,539**.
 - **High-Productivity Districts:** 280 districts surpass the all-India average GVA per worker.
- **Women's Participation & Entrepreneurship:**
 - **Workforce Inclusion:** Women constitute **at least one-third (33%)** of the unincorporated workforce in **237 districts**, and **>50%** in 25 districts.
 - **Top Female-Led Districts:** Concentrated heavily in **Telangana, Manipur, Meghalaya, and Mizoram**. In Mizoram, female-owned proprietary units account for at least **50%** of establishments across *every* district.

Strategic State Leaders (Top Contributing District per State)

State/UT	Top District	% Contribution
Maharashtra	Pune	9.14%
Karnataka	Bengaluru (Urban)	12.83%
Tamil Nadu	Chennai	7.13%
Telangana	Rangareddy	23.53%
West Bengal	North 24 Parganas	15.99%
Gujarat	Surat	19.43%
Goa	North Goa	77.66%
Puducherry	Puducherry	76.64%
Ladakh	Leh	59.00%
Dadra & Nagar Haveli and Daman & Diu	Dadra & Nagar Haveli	65.48%

Q. With reference to the district-level estimates of the unincorporated non-agricultural sector (ASUSE 2025) released by NSO, consider the following statements:

1. The top 50 districts account for nearly one-third of the total establishments, workforce, and Gross Value Added (GVA) of India's unincorporated sector.
2. In all districts of Mizoram, female-owned proprietary establishments constitute at least 50% of total establishments.
3. More than half of all surveyed districts in India have recorded a GVA per worker that exceeds the all-India average.

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

Explanation:

- **Statement 1 is correct:** The survey highlights high economic concentration, with the top 50 districts capturing nearly one-third of total establishments, workforce, and GVA.
- **Statement 2 is correct:** In Mizoram, female-owned proprietary units account for at least 50% of establishments in every district of the State.
- **Statement 3 is incorrect:** Out of 757 surveyed districts, **280 districts** (around 37%, which is less than half) recorded a GVA per worker exceeding the all-India average of ₹1,56,539.

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ENVIRONMENT & GEOGRAPHY

3.1. KISHAU MULTIPURPOSE PROJECT

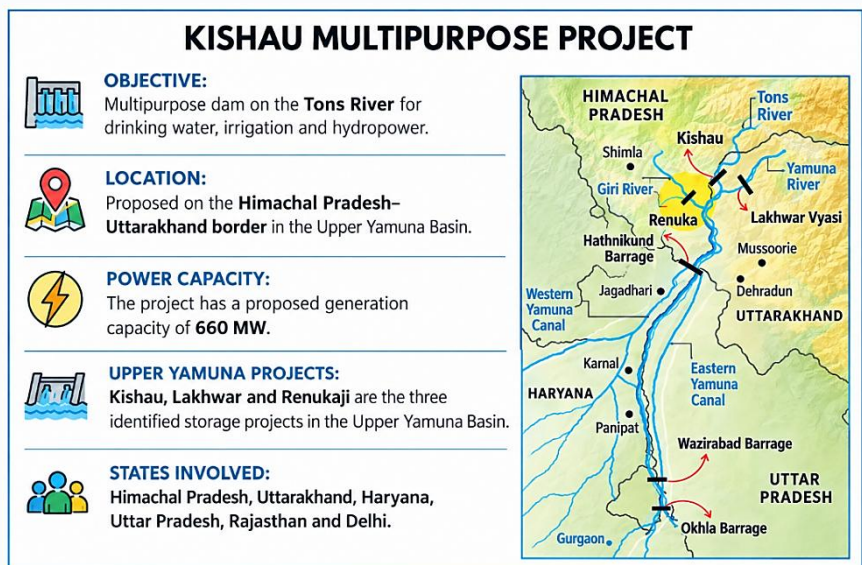
Context

- **Recently**, six states - Himachal Pradesh, Haryana, Uttarakhand, Uttar Pradesh, Delhi, and Rajasthan—have signed a milestone agreement to implement the ₹15,624-crore Kishau Multipurpose Project, marking the resolution of a long-standing inter-state water sharing dispute.



Key Points of the Agreement:

- **Participating States:** Himachal Pradesh, Uttarakhand, Haryana, Uttar Pradesh, Delhi, and Rajasthan.
- **Location:** A 232.6-metre-high dam built on the **Tons River** (a major tributary of the Yamuna) on the border between Himachal Pradesh and Uttarakhand.
- **Total Cost & Funding:** The Central Government will pay around **90%** of the cost, and the remaining **10%** will be shared among the six states.



Main Benefits of the Project:

- **Electricity:** Generates 422 MW of hydropower (approx. 1,476 million units of clean electricity per year).
- **Irrigation:** Provides water to irrigate roughly 97,000 hectares of farmland.
- **Drinking Water:** Delhi will be a major beneficiary, receiving around 110 million cubic metres of drinking water annually to address shortages.

Q. Consider the following statements regarding the Kishau Multipurpose Project:

- I. It is proposed on the Tons river along the Himachal Pradesh--Uttarakhand border.
- II. It has a proposed installed capacity of 422 MW and an estimated cost of ₹15,624 crore.
- III. Under the 1994 agreement, the Centre will bear about 50 per cent of the project cost.

Which of the statements given above is/are correct?

- (a) I only
- (b) I and II only
- (c) II and III only
- (d) I, II and III

Answer: (b)

Explanation:

- **Statement I -- Correct:** The dam is to be built on the Tons, a Yamuna tributary, straddling the Himachal Pradesh--Uttarakhand border.
- **Statement II -- Correct:** The 422 MW project carries an estimated cost of ₹15,624 crore.
- **Statement III -- Incorrect:** The Centre will bear approximately 90 per cent of the financial burden, with the participating States contributing the remaining 10 per cent.

3.2. NEW LEGLESS AMPHIBIAN DISCOVERED IN MAHARASHTRA

Context

- Recently, Scientists have discovered a **new species of legless amphibian, *Gegeneophis chandgadi***, from **Chandgad in Kolhapur district, Maharashtra**. The discovery takes the number of known *Gegeneophis* species in India to **12**, of which **11 are endemic to the Western Ghats**.



About *Gegeneophis chandgadi*

- **New Species:** *Gegeneophis chandgadi* is a newly described **caecilian**, a limbless, burrowing amphibian belonging to the order Gymnophiona.
- **Location:** It was discovered near Buzawade village in Chandgad, Kolhapur district, Maharashtra, in the Northern Western Ghats.
- **Physical Features:** It has a slender, flesh-coloured, worm-like body with ring-like folds called annuli.
- **Habitat:** Like other caecilians, it is adapted to a subterranean lifestyle, spending most of its life in moist soil.
- **Naming Classification:** The species name chandgadi pays tribute to the local culture, being named after the **Chandgadi language**, a distinct dialect of Marathi spoken by the people of the region where the species was discovered.

What are Caecilians?

- Caecilians are **legless, elongated amphibians** adapted mainly to a **burrowing lifestyle**.

- Their worm-like appearance can lead to confusion with **earthworms or snakes**, but they are **amphibians**.
- They generally live **underground or in moist soil**, making them difficult to detect.
- Their reduced eyes and specialised sensory structures reflect their **subterranean adaptation**.
- Caecilians constitute one of the **three living orders of amphibians**.

Ecological Importance of Caecilians

- **Soil Health:** Burrowing helps maintain **soil aeration and nutrient cycling**.
- **Food Web:** Act as both **predators and prey** in soil ecosystems.
- **Bioindicators:** Their dependence on moist habitats can indicate **ecosystem health**.
- **Biodiversity:** Their high endemism reflects the **unique biodiversity of the Western Ghats**.

Gegeneophis chandgadi

- **Group:** Caecilian
- **Order:** Gymnophiona
- **Genus:** *Gegeneophis*
- **Distribution:** Northern Western Ghats, Maharashtra
- **Habitat:** Moist soil and **subterranean environments**
- **Endemism:** Part of the highly endemic caecilian diversity of the Western Ghats.

Q. With reference to caecilians, consider the following statements:

1. They are legless amphibians belonging to the order Gymnophiona.
2. They are primarily adapted to a subterranean or burrowing lifestyle.
3. All caecilian species found in India are endemic to the Western Ghats.

Which of the statements given above is/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

Statement 1 is Correct: Caecilians are **legless amphibians** belonging to the order **Gymnophiona**.

Statement 2 is Correct: They are generally **burrowing and subterranean**, living in moist soil and leaf litter.

Statement 3 is Incorrect: While most Indian *Gegeneophis* species are endemic to the **Western Ghats**, it is incorrect to state that **all caecilians in India** are endemic to the Western Ghats.

3.3. MONTREAL PROTOCOL AND THE ROAD TO OZONE RECOVERY

Context

- 16 September is observed as World Ozone Day, marking the adoption of the Montreal Protocol on Substances that Deplete the Ozone Layer in 1987.

Why Was the Montreal Protocol Needed?

The stratospheric ozone layer absorbs harmful **Ultraviolet-B** (UV-B) radiation. Certain man-made chemicals release chlorine and bromine in the stratosphere, which catalytically destroy ozone.



- Ozone depletion:** Reduction in stratospheric ozone concentration.
- Ozone hole:** A region of severe seasonal ozone depletion, most prominently over Antarctica.
- Major ozone-depleting substances (ODS):** CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs and methyl bromide.
- Major impacts:** Increased risk of skin cancer, cataracts and damage to ecosystems.

Montreal Protocol at a Glance

- Adopted:** 1987; **Entered into force:** 1989.
- Objective:** Protection of the **stratospheric ozone layer**.
- Focus:** Phasing out **Ozone-Depleting Substances (ODS)**.
- Nature:** **Legally binding international environmental treaty** under the **Vienna Convention framework**.
- Implementation:** Different phase-out schedules for **developed and developing countries**.
- Multilateral Fund:** Provides **financial and technical assistance** to developing countries.
- Kigali Amendment (2016):** Entered into force: 1 January 2019, mandates the **phase-down of HFCs**, which are **not ODS but are potent greenhouse gases**.

What Does the Protocol Control?

The Protocol does not merely regulate emissions after production. It controls the production, consumption, trade and use of ODS.

INDIA AND THE MONTREAL PROTOCOL

- Kigali Amendment:** India ratified it in 2021.
- Category:** India is an Article 5, Group 2 country.
- Baseline:** HFC baseline is based on the 2024–2026 average.
- Freeze Year:** India will freeze HFC consumption in 2028.
- Target:** India aims to reduce HFC consumption by 85% by 2047.

Domestic Action

- HPMPs:** India is implementing HCFC Phase-out Management Plans.
 - Phased reduction of HCFCs used in refrigeration, air-conditioning and foam sectors.
- Regulation:** ODS are regulated through the ODS (Regulation and Control) Rules.

Important substance groups

Substance	Major historical use	Ozone significance
CFCs	Refrigeration, aerosols	Major ozone-depleting chemicals
Halons	Fire extinguishers	High ozone-depleting potential
HCFCs	Transitional refrigerants	ODS, though generally less damaging than CFCs
Methyl bromide	Fumigation	Ozone-depleting substance
HFCs	Refrigeration and air-conditioning	Do not deplete ozone, but are powerful greenhouse gases

Q. Consider the following statements regarding the Montreal Protocol:

1. The Montreal Protocol controls the production and consumption of ozone-depleting substances.
2. The Kigali Amendment regulates HFCs because they are major ozone-depleting substances.
3. The Multilateral Fund provides financial assistance to developing countries for implementing the Protocol.

Which of the statements given above is/are correct?

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

Answer: (b) 1 and 3 only

Statement 1 is correct: The Montreal Protocol establishes controls on the production and consumption of ODS.

Statement 2 is incorrect: HFCs do not deplete the ozone layer; they are powerful greenhouse gases. The Kigali Amendment addresses their phasedown.

Statement 3 is correct: The Multilateral Fund supports developing countries in implementing Montreal Protocol obligations.

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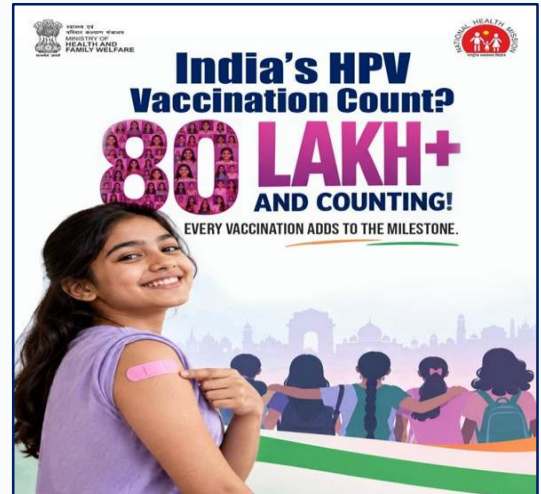
4.1. NATIONAL HPV VACCINATION CAMPAIGN & CERVICAL CANCER PREVENTION

Context

- India achieved a major public health milestone by administering over **80 Lakh (8 million) doses** of the Human Papillomavirus (HPV) vaccine under the **National HPV Vaccination Campaign** within seven months of its rollout.

About National HPV Vaccination Campaign

- Launch & Nodal Ministry:** Launched in **February 2026**; implemented by the **Ministry of Health and Family Welfare (MoHFW)**.
- Target Beneficiaries:** **14-year-old adolescent girls**.
- Annual Cohort Size:** Approximately **1.2 crore (12 million) girls** annually, based on **Registrar General of India (RGI) 2021 estimates**.
- Delivery Protocol:** Voluntary, free-of-cost single-dose vaccination with mandatory parental consent, delivered at Government health facilities.



State-Wise Coverage Highlights

- 100% Coverage** Achieved: Gujarat, Uttar Pradesh, Madhya Pradesh, and Mizoram.
- More than 90%** Coverage Achieved: Bihar, Andhra Pradesh, and Assam.
- Highest Absolute Volume:** **Uttar Pradesh** leads nationwide with over 22 Lakh adolescent girls vaccinated.

Monitoring Mechanism

- U-WIN Platform:** Enables real-time district-level vaccination monitoring, identifies coverage gaps/missed beneficiaries, and supports resource allocation.
- AEFI (Adverse Events Following Immunization) Management:** Ensures post-vaccination safety through trained Medical Officers and 24x7 referral hospital linkages for managing severe reactions, strengthening public trust and addressing vaccine hesitancy.
- Community Engagement:** ASHAs, ANMs, teachers, pediatricians, gynecologists and AIIMS experts help address vaccine hesitancy and misinformation.

About HPV

- Types:** Human Papillomavirus (HPV) is a group of over 200 related non-enveloped **DNA viruses**.
- Primary Types:** HPV 16 and HPV 18 (responsible for ~70% of cervical cancers globally).
- Genetic Material:** **Double-stranded circular DNA** enclosed within an icosahedral protein capsid (composed mainly of L1 and L2 proteins).

- **Transmission:** Direct skin-to-skin contact, **primarily sexual contact** (vaginal, anal, or oral).
- **Prevention:** HPV vaccination is highly effective when administered before exposure to the virus (**ideally between ages 9–14**).
- **Major Cancers:** HPV is strongly associated with cervical cancer and also contributes to cancers of the anus, penis, vulva, vagina and oropharynx.
- **Types of Vaccines:**
 - **Gardasil 9:** Nonavalent vaccine covering types 6, 11, 16, 18, 31, 33, 45, 52, and 58.
 - **Cervavac:** India's indigenous quadrivalent HPV vaccine developed by the Serum Institute of India (SII) covering types 6, 11, 16, and 18.

Q. With reference to the National HPV Vaccination Campaign and cervical cancer in India, consider the following statements:

1. The National HPV Vaccination Campaign targets 14-year-old adolescent girls for a voluntary, single-dose vaccination at government health facilities.
2. The campaign utilizes the Co-WIN platform for district-level tracking of vaccination coverage and missed beneficiaries.
3. Cervical cancer is primarily caused by persistent infection with high-risk human papillomavirus (HPV) types 16 and 18.
4. Madhya Pradesh has recorded the highest absolute number of adolescent girls vaccinated under the national campaign.

Which of the statements given above are correct?

- (a) 1, 2, and 3 only
- (b) 1, 3 only
- (c) 2 and 4 only
- (d) 1, 2, 3, and 4

Answer: (b) 1, 3 only

Explanation:

- **Statement 1 is correct:** The campaign provides voluntary, free-of-cost single-dose HPV vaccination to 14-year-old adolescent girls with parental consent at government facilities.
- **Statement 2 is incorrect:** The campaign leverages the **U-WIN platform** (dedicated to universal immunization), not the Co-WIN platform (which was developed specifically for COVID-19 vaccination tracking).
- **Statement 3 is correct:** Over 80% of cervical cancer cases in India are caused by persistent infection with oncogenic HPV types **16 and 18**.
- **Statement 4 is incorrect:** Among all States and UTs, **Uttar Pradesh** leads in absolute numbers, having vaccinated over 22 Lakh adolescent girls.

4.2. BADRI CATTLE

Context

- Recently, a healthy Badri female calf was successfully born through Ovum Pick-Up and In Vitro Fertilization (OPU-IVF) technology, marking an important step towards the conservation and genetic improvement of Uttarakhand's indigenous Badri cattle breed.
- The reproductive technology, jointly developed by ICAR–National Dairy Research Institute (NDRI), Karnal, and G. B. Pant University of Agriculture and Technology, Pantnagar, marks an important step towards the conservation and genetic improvement of the Badri breed.



Key Highlights of the Achievement

- Breed Significance:** Badri cattle are the indigenous state animal of Uttarakhand.
- Collaborating Institutions:** ICAR–National Dairy Research Institute (ICAR-NDRI), Karnal, and G. B. Pant University of Agriculture and Technology, Pantnagar, with funding from the Uttarakhand Biotechnology Council, Haldi.

What is OPU-IVF?

- Ovum Pick-Up (OPU):** A technique in which **oocytes (egg cells)** are collected from **genetically valuable female animals**, generally through ultrasound-guided procedures.
- In Vitro Fertilization (IVF):** The collected oocytes are **matured and fertilised with semen under controlled laboratory conditions**.
- Embryo Transfer:** The resulting embryos are transferred into **synchronised recipient cows** for gestation.
- Advantage:** Enables the production of **multiple embryos from elite females**, potentially accelerating the multiplication of superior germplasm compared with conventional reproductive methods.

About Badri Cattle

- Indigenous Breed:** Badri cattle are an important **indigenous cattle genetic resource of Uttarakhand**.
- State Animal:** Badri cattle are recognised as the **state animal of Uttarakhand**.
- Conservation:** Advanced reproductive technologies such as **OPU-IVF and embryo transfer** can support their long-term conservation and genetic improvement.
- Characteristics:** Badri cattle are relatively small in size, with varied coat colors ranging from black, brown, red, and white to gray. Badri is reared mainly for **bullock power, milk and manure**.

Significance for Himalayan Livestock Development

- The initiative demonstrates how **indigenous genetic resources can be integrated with advanced reproductive biotechnology**.
- It supports the **conservation of indigenous breeds**, faster multiplication and wider dissemination of **elite germplasm**, and genetic improvement of valuable cattle.
- It also promotes **sustainable livestock development** and strengthens cattle breeding in the **Himalayan region**.

Q. Consider the following statements regarding the recent advancement in Badri cattle conservation:

- I. Badri cattle are recognized as the state animal of Uttarakhand.
- II. The OPU-IVF embryo transfer for the landmark calf was successfully carried out using a Holstein Friesian recipient cow.
- III. The collaborative research was initiated in 2023 under the leadership of G. B. Pant University and ICAR-NDRI.

Which of the statements given above are correct?

- (a) I and II only
- (b) I and III only
- (c) II and III only
- (d) All of the above

Answer: (b)

Explanation:

- **Statement I** is Correct: Badri cattle are an important indigenous genetic resource recognized as the state animal of Uttarakhand.
- **Statement II** is Incorrect: The embryo was transferred into a Sahiwal recipient cow, not a Holstein Friesian cow.
- **Statement III** is Correct: The research programme was initiated in 2023 through scientific collaboration between G. B. Pant University and ICAR-NDRI.

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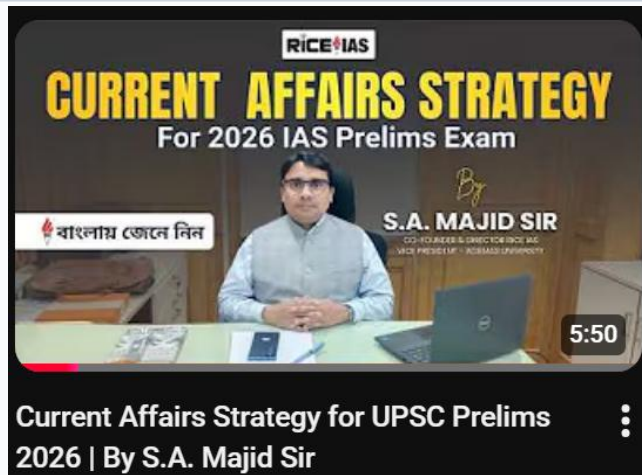
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