20th January 2026: DSC

(PRELIMS FOCUS)

Irrawaddy Dolphin

Category: Environment and Ecology

Context

The Union Ministry of Environment, Forest and Climate Change has initiated the **second nationwide dolphin population estimation exercise under Project Dolphin**, marking the **first inclusion of the Irrawaddy dolphin** in the assessment framework.

About the Irrawaddy Dolphin

- **Nature:**
  The Irrawaddy dolphin is a **euryhaline oceanic species**, capable of surviving in both saltwater and freshwater environments. It exists in **fragmented and discontinuous populations**, primarily along coastal regions, estuaries, and river systems across parts of the Bay of Bengal and Southeast Asia.
- **Scientific Name:**
  Orcaella brevirostris
- **Habitat Preference:**
  These dolphins favour **nearshore coastal waters**, particularly **muddy, shallow, and brackish zones** near river mouths and deltaic systems. They are generally absent from deep offshore waters.
- **Global Distribution:**
  The species is found in only **three major river systems** in South and Southeast Asia:
  - Irrawaddy River (Myanmar)
  - Mahakam River (Kalimantan, Indonesia)
  - Mekong River (Cambodia)
- **Distribution in India:**
  In India, Irrawaddy dolphins are predominantly found in **Chilika Lake in Odisha**, with additional reported presence in the **Sundarbans region**.
- **Distinctive Characteristics:**
  The species is easily recognisable due to its **rounded head and face**, lacking a beak. Its appearance closely resembles that of a **juvenile beluga whale**, except for the presence of a dorsal fin. Their **movable lips** give them expressive facial features, while **neck creases** indicate their ability to turn the head freely in all directions.
- **Physical Appearance:**
  The body is uniformly grey, with a lighter underside. The **dorsal fin is small**, while the **flippers are large and elongated**, featuring curved leading edges and rounded tips. The tail flukes are also notably broad.

- **Dentition:**
  The Irrawaddy dolphin possesses **narrow, pointed, peg-shaped teeth**, approximately one centimetre long, present in both the upper and lower jaws.
- **Ecological Role:**
  It is categorised as an **edge species**, thriving in **ecotones**, which are transitional zones between freshwater and marine ecosystems.
- **Behavioural Traits:**
  - **Cooperative fishing:** In Myanmar, these dolphins are known to assist fishermen by herding fish into nets.
  - **Spy-hopping:** They frequently rise vertically above the water surface to observe their surroundings.
- **Conservation Status:**
  Classified as **Endangered** under the IUCN Red List.

Source: The New Indian Express

Samakka–Saralamma Jatara

Category: History and Culture

Context

The Government of Telangana has commenced preparations for the **biennial Samakka–Saralamma Jatara**, recognised as one of the **largest indigenous spiritual congregations globally**.

About Samakka–Saralamma Jatara

- **Nature:**
  This is a **tribal religious festival** dedicated to the worship of goddess figures revered by indigenous communities in Telangana.
- **Location:**
  The festival is held at **Medaram**, a remote forested area within the **Eturnagaram Wildlife Sanctuary**, located in the Dandakaranya region of Mulugu district.
- **Alternate Name:**
  Commonly referred to as the **Medaram Jatara**.
- **Frequency:**
  Conducted **once every two years**, coinciding with the period during which the tribal communities believe the goddesses visit them.
- **Significance:**
  It is acknowledged as the **largest indigenous tribal gathering in the world** and ranks as **India's second-largest fair after the Kumbh Mela**.
- **Historical Background:**
  The Jatara commemorates the **tribal uprising led by Sammakka and Saralamma**,

a mother–daughter pair who resisted excessive taxation imposed on tribal populations during a severe drought under the **Kakatiya rulers in the 12th century**.

- **Ritual Practices:**
  Devotees offer **Bangaram (gold)** equivalent to their body weight and take a ritual bath in **Jampanna Vagu**, a tributary of the Godavari River.
- **Associated Tribe:**
  All rituals are performed exclusively by **priests from the Koya tribe**, following their customary traditions.
- **Cultural Roots:**
  The festival retains strong **animistic and nature-worship traditions**, remaining largely uninfluenced by Vedic or Brahmanical practices.

Source: The Hindu

Disobind Tool

Category: Science and Technology

Context

Scientists have developed a **deep-learning-based computational tool named Disobind**, capable of predicting how **intrinsically disordered proteins (IDPs)** bind with their interaction partners.

About Disobind

- **Development:**
  Created by researchers at the **National Centre for Biological Sciences (NCBS)** under the **Tata Institute of Fundamental Research, Bengaluru**.
- **Nature:**
  An **open-source and freely accessible** platform for global research use.
- **Objective:**
  The tool analyses protein sequences using **protein language models**, a form of artificial intelligence trained on vast databases of known protein sequences.
- **Structural Independence:**
  Disobind does **not require protein structural data or sequence alignment**, making it highly user-friendly and efficient.
- **Accuracy:**
  The tool has demonstrated **superior predictive accuracy** compared to widely used platforms such as AlphaFold-multimer and AlphaFold3, particularly when tested on previously unseen protein pairs.
- **Applications:**
  Its utility extends across **disease biology, molecular research, and drug discovery and design**.

Intrinsically Disordered Proteins (IDPs)

- **Definition:**
  IDPs are proteins, or regions within proteins, that **lack a stable three-dimensional structure under physiological conditions**.
- **Alternate Terminology:**
  Also referred to as **natively unfolded** or **intrinsically unstructured proteins**.
- **Biological Importance:**
  These proteins play a central role in **cellular signalling, regulation, and communication**.
- **Functional Role:**
  Their structural flexibility allows them to guide signalling networks, regulate gene expression, assist in protein mobility, and facilitate molecular interactions within cells.
- **Broader Significance:**
  IDPs contribute to **protein quality control**, folding mechanisms, and the formation of dynamic cellular structures known as **condensates**.

Source: The Hindu

Womaniya Initiative

Category: Government Schemes

Context

The Government e-Marketplace (GeM) has completed **seven years of the Womaniya initiative**, aimed at strengthening women's participation in public procurement.

About the Womaniya Initiative

- **Launch Date:**
  14 January 2019
- **Nature:**
  A flagship programme designed to enhance the presence of **women-led Micro and Small Enterprises (MSEs)** in government procurement processes.
- **Objective:**
  To promote **women entrepreneurship** as a pathway to **inclusive and gender-responsive economic growth**.
- **Market Access:**
  Enables women entrepreneurs to sell products such as **handicrafts, handlooms, jute products, and home décor** directly to government ministries and departments, eliminating intermediaries.
- **Key Milestone:**
  By January 2026, women-led MSEs had completed orders worth **over ₹80,000 crore** through the GeM platform.
- **Procurement Mandate Support:**
  Assists government bodies in meeting the mandatory requirement of **at least 3% of annual procurement from women-owned enterprises**.

- **International Collaboration:**
  A Memorandum of Understanding between **GeM and UN Women India** aims to strengthen gender-responsive procurement aligned with **Sustainable Development Goal 5 (Gender Equality)**.
- **Digital Reach:**
  Over **two lakh women-led MSEs** are registered on the platform, contributing approximately **4.7% of GeM's total order value**.
- **Significance:**
  The initiative addresses the **triple barriers of market access, finance, and value addition**, while supporting national programmes such as **Aatmanirbhar Bharat** and **Make in India**.

Source: PIB

Mount Elbrus

Category: Geography

Context

An **artificially triggered avalanche** was recently recorded cascading down **Mount Elbrus**, the highest mountain in Russia.

About Mount Elbrus

- **Location:**
  Situated in **southwestern Russia**, forming part of the **Caucasus Mountain range**.
- **Geological Formation:**
  The Caucasus Mountains originated from the **northward movement of the Arabian Plate colliding with the Eurasian Plate**. Geological evidence suggests Mount Elbrus formed over **2.5 million years ago** and experienced volcanic activity during the **Holocene Epoch**.
- **Elevation:**
  Rising to **18,510 feet (5,642 metres)**, it is the **highest peak in Russia and Europe** and lies within **Prielbrusye National Park**.
- **Global Significance:**
  It is one of the **Seven Summits**, representing the tallest mountain on each continent.
- **Volcanic Nature:**
  Mount Elbrus is a **dormant volcano**, characterised by two main summits composed of inactive volcanic domes.
- **Climate:**
  The region experiences a **cold alpine climate**, with summer night temperatures dropping to around **–8°C**.
- **Major Glaciers:**
  Includes the **Bolshoi Azaou** and **Irik glaciers**.

- **River Origins:**
  Several Russian rivers such as the **Baksan, Malka, and Kuban** originate from these glaciers.

Source: BBC

(MAINS FOCUS)

Patent Rights and Public Health: India's Strategic Choices

GS II

Government policies and interventions in the health sector; issues in design and implementation

GS III

Science and Technology; Intellectual Property Rights and their societal impact

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Context (Introduction)

India's pharmaceutical industry operates at a complex intersection of **international TRIPS commitments**, **domestic public health responsibilities**, and the **global political economy of medicines**. Persistent concerns surrounding patent evergreening by multinational drug companies, escalating prices of essential life-saving medicines, and inequitable access—particularly across the Global South—have once again brought focus on how India should strategically deploy its patent regime in the broader public interest.

Core Argument

India's patent framework is **fully compliant with TRIPS**, yet consciously designed to remain **public welfare–oriented**. It empowers the State to strike a balance between **encouraging genuine pharmaceutical innovation** and **ensuring affordable access to medicines**. Claims that India enforces "weak intellectual property protection" overlook the fact that **TRIPS itself embeds public health safeguards**, which member states are legally entitled to invoke to prevent abuse of patent monopolies.

Key Governance and Policy Challenges

- **Patent evergreening:**
  Incremental and minor modifications to existing drugs are frequently used to extend monopoly periods without delivering meaningful therapeutic improvement.
- **Excessive pricing of patented medicines:**
  Particularly acute in oncology and chronic disease treatment, placing life-saving drugs beyond the reach of large populations.
- **Underuse of statutory powers:**
  Despite strong legal provisions, compulsory licensing and government-use powers are rarely exercised.

- **External pressure:**
  Persistent lobbying and diplomatic pressure from pharmaceutical corporations and governments in the Global North.
- **Manufacturing–access divide:**
  Many developing countries lack domestic pharmaceutical capacity, increasing reliance on affordable Indian generics.

Why This Issue Matters

- **Constitutional obligation:**
  The Right to Health, derived from Article 21, necessitates active State intervention when access to medicines is threatened.
- **Public health emergencies:**
  Pandemics and health crises demand rapid availability of affordable drugs and vaccines.
- **Global responsibility:**
  India's role as the "Pharmacy of the Global South" strengthens South–South cooperation and health security.
- **Market regulation:**
  Prevents anti-competitive practices and distortion of drug markets.
- **Multilateral credibility:**
  Reinforces India's commitment to rules-based trade under the WTO–TRIPS framework.

India's Legal and Strategic Instruments

- **Section 3(d), Patents Act:**
  Blocks patenting of incremental innovations without enhanced therapeutic efficacy, curbing evergreening.
- **Section 47(4):**
  Allows government use of patented inventions without consent under specified conditions.
- **Section 84:**
  Enables compulsory licensing when reasonable public health requirements are unmet.
- **Section 66:**
  Permits revocation of patents that are prejudicial to public interest.
- **Section 102:**
  Provides for acquisition of patents by the government with due compensation.
- **Section 92A:**
  Facilitates export of generic medicines to countries with insufficient manufacturing capacity.

- **Competition Act, 2002:**
  Addresses abuse of dominance and cartelisation in pharmaceutical markets.
- **TRIPS flexibilities:**
  Explicitly recognised public health safeguards within WTO law.

International Dimension

- Supports medicine access across Africa and the Global South
- Counters monopolistic control by dominant pharmaceutical innovators
- Aligns with India's leadership in global health diplomacy and vaccine equity

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Way Forward

- Institutionalise **regular patent audits** in health-critical sectors
- Adopt a **proactive approach** to compulsory licensing and government-use provisions
- Integrate **competition law oversight** with patent enforcement
- Develop a **transparent public-interest–oriented patent policy**
- Parallel investment in **domestic pharmaceutical R&D and manufacturing capacity**

Conclusion

India's patent regime is not hostile to innovation; it is resistant to abuse. A calibrated and confident use of **TRIPS-compliant flexibilities** enables India to safeguard public health, uphold constitutional values, and retain credibility within the global intellectual property order—while continuing to encourage genuine pharmaceutical innovation.

Mains Question

"India's patent regime provides several flexibilities to reconcile intellectual property protection with public health imperatives." Elaborate. (250 words)

Source: The Indian Express

Rationalising Food and Fertiliser Subsidies: Completing India's Reform Agenda

GS II

Government policies and interventions for development

GS III

Agriculture, food security, subsidies, environmental sustainability

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Context (Introduction)

India's reform trajectory—marked by initiatives such as GST, Insolvency and Bankruptcy Code, Direct Benefit Transfers, and Free Trade Agreements—has now reached its most politically sensitive domain: **food and fertiliser subsidies**. Despite moderating inflation and improved macroeconomic stability, agricultural growth is slowing, while distorted price signals continue to undermine crop diversification, soil health, and fiscal efficiency.

Core Argument

Although India's subsidy framework is rooted in food security and farmer welfare, its current design has become **economically inefficient and environmentally unsustainable**. The existing structure disproportionately incentivises **rice–wheat cultivation and urea-intensive farming**, marginalising pulses, oilseeds, fruits, and vegetables—crops essential for nutrition security and climate-resilient agriculture.

Key Distortions and Issues

Food Subsidy (≈ ₹2 trillion)

- Economic cost:
  Rice ≈ ₹42/kg, Wheat ≈ ₹30/kg
- Distributed free to nearly **56% of the population** under PDS
- World Bank PPP estimates indicate **extreme poverty declined to 5.3% in 2022**, raising questions over universal coverage

Fertiliser Subsidy (≈ ₹2 trillion)

- Artificially low urea prices encourage overuse
- Severe imbalance in N:P:K application
- Excess fertiliser use contaminates groundwater and increases greenhouse gas emissions

Cropping Pattern Bias

- MSP, assured procurement, subsidised power, and fertilisers skew incentives toward rice, wheat, and sugarcane

Fiscal Pressure

- Combined food and fertiliser subsidies consume **8–8.5% of the Union Budget**

Why This Matters

- **Governance:**
  Inefficient subsidies crowd out productive public investment
- **Health and Nutrition:**
  Calorie security through PDS does not ensure nutrition security
- **Agriculture and Environment:**
  Soil degradation, groundwater depletion, and rising emissions
- **International Commitments:**
  Climate goals and trade competitiveness demand rational subsidy regimes

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Way Forward

- **Phased PDS rationalisation:**
  Reduce coverage from 56% → 40% → 25%, while safeguarding Antyodaya households
- **Direct Benefit Transfers:**
  Replace in-kind food support for non-poor households with cash or vouchers
- **Crop-neutral incentives:**
  Redirect support toward pulses, oilseeds, millets, fruits, and vegetables
- **Fertiliser reform:**
  Expand nutrient-based subsidy and rationalise DAP and MOP pricing
- **Income support:**
  Integrate fertiliser subsidies with PM-KISAN–type direct income transfers

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Conclusion

Completing India's reform agenda requires a decisive shift from **input-heavy, distortionary subsidies** to **income support and nutrition-centred welfare**. Political resolve, gradual implementation, and DBT-backed reforms can harmonise fiscal responsibility, farmer incomes, nutrition security, and environmental sustainability—true to the ethos of comprehensive economic reform.

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Mains Question

Food and fertiliser subsidies in India have evolved from instruments of social protection into sources of economic, nutritional, and environmental distortion. Discuss the political economy constraints in rationalising these subsidies and suggest a reform pathway that balances fiscal prudence, farmer incomes, nutrition security, and sustainable agriculture. (250 words, 15 marks)

Source: The Indian Express

20th January 2026: Daily MCQs

Q1. With reference to India's patent regime and public health, consider the following statements:

1. Section 3(d) of the Indian Patents Act aims to prevent patent evergreening.
2. Compulsory licensing under Indian law can be issued only during a declared national emergency.
3. TRIPS Agreement permits member countries to adopt public-health safeguards.

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

Q2. Which of the following provisions allows India to export generic medicines to countries with insufficient pharmaceutical manufacturing capacity?

A. Section 84 of the Patents Act
B. Section 66 of the Patents Act
C. Section 92A of the Patents Act
D. Section 102 of the Patents Act

Answer: C

Q3. Consider the following statements regarding food and fertiliser subsidies in India:

1. Rice and wheat are distributed free of cost to more than half of India's population under the PDS.
2. Fertiliser subsidies have contributed to an imbalance in the N:P:K nutrient ratio.
3. Combined food and fertiliser subsidies account for less than 3% of the Union Budget.

Which of the statements given above is/are correct?

A. 1 and 2 only
B. 2 and 3 only
C. 1 only
D. 1, 2 and 3

Answer: A

Q4. Which of the following outcomes is most directly associated with prolonged urea price controls in India?

A. Increased cultivation of pulses and oilseeds
B. Balanced fertiliser use across nutrients
C. Groundwater contamination and soil degradation
D. Reduction in greenhouse gas emissions

Answer: C

Q5. India's role as the "Pharmacy of the Global South" is best explained by which of the following?

A. Dominance in patented drug innovation
B. Export of affordable generic medicines to developing countries
C. Leadership in global pharmaceutical regulation
D. High domestic consumption of medicines

Answer: B

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