

## Prelims Exam Topics

### BLUE BOND

#### Context

Sagarmala Finance Corporation, a state-owned NBFC under the Ministry of Ports, Shipping and Waterways, has announced plans to issue India's first Blue Bond.

#### About Blue Bond

- A **Blue Bond** is a **debt instrument** that raises funds specifically for projects linked to: Oceans, seas, and coasts, Rivers and inland waterways, Water-based ecosystems.
- It targets investors interested in **sustainable and environmentally focused finance**.

#### Blue Bond Vs Green Bond

Parameter	Green Bond	Blue Bond
<b>Focus</b>	Broad climate and environmental projects	Ocean, marine, and water-specific projects
<b>Scope</b>	Renewable energy, afforestation, clean transport, waste management, etc.	Sustainable fisheries, ports, coastal resilience, waterways, marine conservation, etc.
<b>Specificity</b>	Wider environmental focus	Narrower, exclusively water-centric focus
<b>Objective</b>	Promote overall environmental sustainability and climate action	Support sustainable use and conservation of aquatic and marine resources

#### Significance of Blue Bonds

- Attracts **global sustainable finance** (ESG investors)
- Reduces pressure on **budgetary resources**
- Supports **coastal communities and livelihoods**
- Balances **maritime infrastructure growth** with **marine conservation**

#### Global Precedents

- **2018 – Seychelles:** Issued the **world's first sovereign Blue Bond**, raising funds for sustainable fisheries and marine conservation.
- **2021 – Belize:** Implemented a landmark **debt-for-ocean swap**, restructuring sovereign debt in exchange for long-term marine conservation commitments.

## RUDRAM-II

### Context

India's defence indigenisation drive received a major boost with the successful flight-test of RudraM-II

### About RudraM-II

- **Developed by:** DRDO in collaboration with IAF
- **Class:** Air-to-Surface missile (ASM)
- **Launch Platform:** Airborne (fighter aircraft)
- **Strike Type:** Precision stand-off strike, launched from safe distance outside enemy air defence range
- **Guidance:** Multi-mode seeker for accurate target engagement
- **Propulsion:** Solid-fuel rocket motor (developed by HEMRL)
- **Range:** Medium-to-long range (exact range classified)
- **Warhead:** High-explosive; developed by ARDE
- **Target:** Ground-based and surface targets

**Anti-Radiation Missile** = designed to detect, track and neutralise enemy radar and air defence systems by homing onto their electromagnetic emissions.

**RudraM-I** → Anti-Radiation Missile (ARM); homes onto enemy radar electromagnetic emissions

## BOLLIDES

### Context

On 30 May 2026, a meteor exploded over the northeastern United States, releasing energy equivalent to about 300 tonnes of TNT; NASA identified it as a bolide.

### About Bollides

- A bolide is an exceptionally bright meteor that breaks apart or explodes within Earth's atmosphere, releasing large amounts of energy and producing shockwaves heard as loud booms.
- **Origin:** Small fragments of **asteroids** (most common) or comets orbiting the Sun
- **Entry:** Paths intersect with Earth's orbit → enter atmosphere at tens of km per second
- **Compression Effect:** Air ahead gets compressed and heated → object glows → bright light streak
- **Explosion:** Larger objects fragment violently → release energy → produce **shockwaves**
- **Sound:** Loud booming noises = result of **shockwaves** generated by violent fragmentation
- **Energy Release:** Measured in TNT equivalent

- **Altitude of Explosion:** Typically tens of kilometres above the ground
- **Most meteors** burn up completely before reaching the ground; only larger ones become fireballs/bolides

Stage	Description
<b>Meteoroid</b>	Small rock or metallic fragments travelling through space, usually originating from asteroids or comets and orbiting the Sun.
<b>Meteor</b>	A meteoroid that enters Earth's atmosphere and glows due to intense heating caused by compression of air, appearing as a streak of light ("shooting star").
<b>Fireball</b>	An exceptionally bright meteor produced by a relatively large meteoroid that remains visible for a longer duration in the atmosphere.
<b>Meteorite</b>	A fragment of a meteoroid that survives atmospheric passage and reaches the Earth's surface.

## MISSION SENEHJORI

### Context

The Ministry of Development of North-East Region launched **Mission "Senehjori" – Assam Muga Silk USP**, a comprehensive cluster-based initiative to transform Assam's Muga silk sector into a globally competitive luxury textile ecosystem.

### Key features of Mission Senehjori

- **GI Authentication:** enforce traceability; prevent adulteration of genuine Muga silk
- **Digital Traceability:** farm-to-market tracking for producer households
- **FPOs & CFCs:** Farmer Producer Organisations and Common Facility Centres to strengthen producer collectives
- **Branding:** unified global brand identity under "Senehjori"
- **Export Promotion:** target premium domestic and international luxury markets
- **Silk Tourism:** Muga Silk Trail, Silk Tourism Park, annual **Muga Utsav** festivals
- **Host Plant Ecology:** regeneration of Som and Soalu plantations for silkworm sustenance
- **Targets**
  - Establish **5 modernised Muga reeling units** and a Muga Spun Mill
  - Create **30 FPOs** and over **1,180 Farmer Interest Groups**
  - Regenerate **5,000 hectares** of Som and Soalu plants
  - Authenticate **80%+** of traded Muga silk through **GI-linked systems**

- Create digital traceability for **8,000+ households**
- Expand Muga silk exports to **2,000+ kg annually**

### About Muga silk

Feature	Details
Type	Naturally golden-coloured silk
Uniqueness	World's only naturally golden silk
GI Status	India's first silk to receive a Geographical Indication (GI) tag
Production Hub	Assam produces nearly 90% of the world's Muga silk
Host Plants	Silkworms feed primarily on Som and Soalu plants
Livelihood Support	Sustains around 2.6 lakh rearer and weaver families

## PRODUCER PRICE INDEX (PPI)

### Context

The Centre announced phasing out of the Wholesale Price Index (WPI) over the next five years, replacing it with the Producer Price Index (PPI) for a more realistic assessment of inflationary trends.

### WPI to PPI transition

- WPI new series (base year 2022-23) releases on June 15, 2026, replacing old 2011-12 series
- PPI new series also launches on June 15, 2026 simultaneously
- WPI will continue for 5 years alongside PPI, gives users time to switch from WPI to PPI
- WPI currently embedded in price escalation clauses in contracts, 5-year window allows smooth transition
- After 5 years, PPI will fully replace WPI

### About PPI

- Producer Price Index (PPI) measures price changes at the producer/factory gate level, capturing prices before goods and services reach the wholesale or retail market.
- Compiled by **DPIIT** under the Ministry of Commerce & Industry.
- **Base year:** 2022–23
- **Components:**
  - **Output PPI:** Price changes of goods/services produced (at factory gate)
  - **Input PPI (Trial) :** Price changes of raw materials/inputs used in production
  - **Services PPI:** Price changes in service sectors

- Banking, Securities Transaction, Insurance, Management of Pension Funds, Railways, Air (Passenger), Telecom

### Why PPI is better than WPI

- WPI covers only goods; PPI covers goods and services
- PPI captures both output and input price movements
- Gives better understanding of producer-level inflation transmission
- Aligns India with advanced economies and IMF standards

### Wholesale Price Index (WPI)

- **Definition:** WPI measures the average change in prices of a fixed basket of goods at the **wholesale (bulk-sale) level** in the domestic market over a period of time.

#### • Items to weights: How the WPI is changing

	WPI-2011/12 series		WPI-2022/23 series	
	No. of items	Weight	No. of items	Weight
Primary Articles items	115	22.62%	129	22.76%
Fuel & Power items	18	13.15%	25	14.11%
Manufactured items	564	64.23%	803	63.13%
<b>TOTAL ITEMS</b>	<b>697</b>	<b>100%</b>	<b>957</b>	<b>100%</b>

SOURCE: MINISTRY OF COMMERCE & INDUSTRY

- **Released by:** Office of the Economic Adviser (OEA) under the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industry.

### Key Changes in the Revised WPI Series

- **New Base Year:** Revised from **2011–12 to 2022–23**.
- **Broader Coverage:** Number of items increased from **697 to 957**, improving representation of the economy.
- **Rationalised Energy Basket:**
  - **Solar, wind and nuclear energy are included** under the electricity category.
  - **Crude petroleum and natural gas** shifted to the **Fuel & Power** group.

## YELLOW-THROATED MARTEN

### Context

Kaziranga National Park recorded the first-ever sighting of the Yellow-Throated Marten within its boundaries, adding to the park's rich biodiversity documentation.

### About Yellow-Throated Marten

- **Family:** Mustelidae (same as otters, badgers, wolverines, weasels)
- **Habitat:** Dense forests- tropical, subtropical and temperate; highly arboreal (tree-dwelling)
- **Distribution:** South Asia, Southeast Asia, East Asia, Russian Far East, India: Northeast India, Western Ghats, Himalayas, Andaman Islands
- **Key Features**
- **Size:** Largest marten in the Old World
- **Distinctive Feature:** Bright yellow/golden throat and chest patch; gives it the name
- **Body:** Slender, long-bodied; dark brown back with yellow underparts
- **Tail:** Long and bushy- used for balance in trees
- **Diet:** Omnivore-small mammals, birds, eggs, fruits, honey, insects; known to hunt deer fawns in packs
- **Hunting Style:** Diurnal (active during day), unusual among mustelids
- **Social:** Often seen in pairs or small groups, rare among mustelids
- **Locomotion:** Excellent climber; moves swiftly through forest canopy
- **Conservation status**
  - **IUCN Red List:** Least Concern
  - **CITES:** Appendix III
  - **Wildlife Protection Act, 1972:** Schedule II



### PRIME MINISTER RESEARCH CHAIR (PMRC) SCHEME 2026

#### Context

The Department of Higher Education, Ministry of Education launched applications for the Prime Minister Research Chair (PMRC) Scheme 2026

#### About PMRC Scheme

- **Objective:** To connect accomplished Indian-origin researchers, scientists and professionals working abroad with India's research, innovation and technology sectors.

- **Target Areas:** Covers 13 priority sectors including AI, Quantum Computing, Semiconductors, Cybersecurity, Biotechnology, Healthcare, Critical Minerals, Space, Defence, Blue Economy and Atomic Energy.
- **Three Pillars:** Built around **Lead Institutions, Host Institutions and PMRC Fellows.**
- **Institutions Involved**
  - **Host Institutions:** Top-ranked Government HEIs (NIRF) and national laboratories under DST, DBT, ICMR, CSIR and other agencies.
  - **Lead Institutions:** Seven premier institutions—six IITs (Delhi, Bombay, Madras, Kanpur, Hyderabad, ISM Dhanbad) and IISc Bengaluru—will coordinate implementation across thematic areas.
- **Categories of Fellows:** Young Research Fellows, Senior Research Fellows and Research Chairs.
- **Eligible Fellows:** Indian nationals working abroad, OCI cardholders and Persons of Indian Origin (PIOs) with significant achievements in research and technology.
- **Support Provided:** Fellowship grants, research funding, access to laboratories, research infrastructure and collaboration with leading Indian institutions.
- **Selection Mechanism:** Fellows and institutions will be selected through an Empowered Committee chaired by the Principal Scientific Advisor (PSA) to the Government of India.

### Context

The U.S. FDA approved **Zaynich**, a novel antibiotic developed with significant Indian scientific contributions.

### About Zaynich

- **Type:** Novel antibiotic for drug-resistant bacterial infections.
- **Significance:** Showcases India's capability in new drug discovery.
- **AMR Focus:** Developed considering resistance patterns seen in India.
- **Regulatory Milestone:** Approved by the U.S. FDA.
- **Importance:** Expands treatment options against resistant infections.

### About Antimicrobial Resistance (AMR)

- **Meaning:** Microorganisms (bacteria, viruses, fungi and parasites bacteria, viruses, fungi and parasites) become resistant to medicines.
- **Impact:** Makes infections harder to treat.

- **Causes:** Overuse and misuse of antimicrobial drugs.
- **Global Concern:** One of WHO's major public health threats.
- **Solution:** Requires new antibiotics and responsible drug use.



## Mains Exam Topics

### INDIA-CHINA BORDER DISPUTE

#### Context

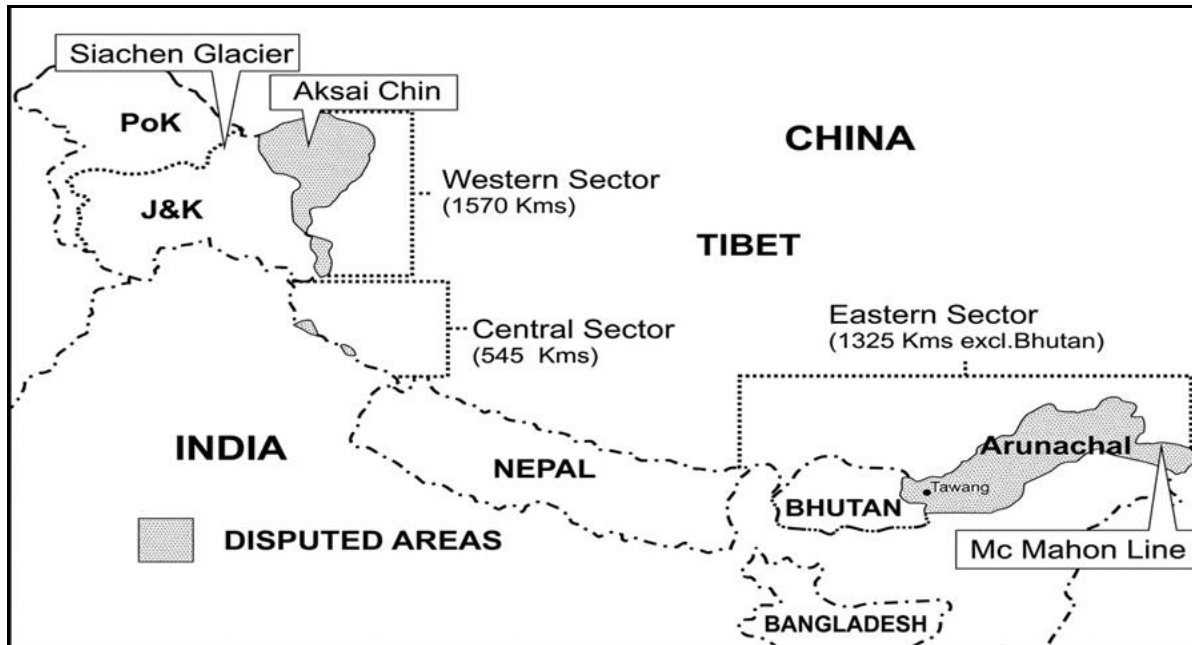
The 35th meeting of the Working Mechanism for Consultation & Coordination on India-China Border Affairs (WMCC) recently reviewed the situation along the India-China border areas.

#### About India-China Border

- Total boundary length: **3,488 km**, India's **second longest** land boundary after Bangladesh (4,096 km)
- The boundary is **un-demarcated**, defined by the **Line of Actual Control (LAC)**, not a formal, mutually agreed border

#### India-China Disputed Areas

Sector	Location / Key Areas	Major Issues
<b>Western Sector</b>	Ladakh – Aksai Chin	China controls Aksai Chin, while India claims it as part of Ladakh. It is the most strategically sensitive sector and was the site of the Galwan Valley clash (2020).
<b>Middle Sector</b>	Himachal Pradesh & Uttarakhand	Includes Kaurik and Lahaul-Spiti Valley (Himachal Pradesh), and Bara Hoti and Nelang Valley (Uttarakhand). It is the least contentious sector of the India–China boundary.
<b>Eastern Sector</b>	Arunachal Pradesh, Sikkim	China claims Arunachal Pradesh as "South Tibet" (Zàng Nán), with particular emphasis on the Tawang region. The dispute is centered on the McMahon Line. <b>Sikkim:</b> Key areas include Nathu La, Naku La, Cho La, Doklam Plateau (site of the 2017 India–China standoff), Jampheri Ridge, Mount Gipmochi, and Batang La. The sector is strategically important due to its proximity to the India–Bhutan–China tri-junction.



### Early Harvest Proposal

The Early Harvest concept proposes resolving **comparatively easier sectors first**, with **Sikkim** as the primary candidate, while deferring contentious disputes in Eastern Ladakh and Arunachal Pradesh to later negotiations.

- **Why China Pushes It**
  - Locks in **formal territorial recognition** in settled sectors permanently
  - **Weakens India's package-settlement leverage**, once a sector is settled, it exits the negotiating table
  - Retains China's **full flexibility** in contested areas like Aksai Chin and Arunachal Pradesh
  - Advances China's goal of **altering the tri-junction** location near Doklam favourably
  - Creates diplomatic momentum that **pressures India** toward further concessions over time
- **Why India is Wary**
  - Sikkim settlement is **not truly easy**, it involves the tri-junction dispute with profound strategic consequences
  - China has already **changed ground realities** through infrastructure and border villages, a settlement could legitimise these unilateral changes
  - **Asymmetric outcome**: China gains formal recognition; India receives only diplomatic atmosphere in return
  - Historical precedent: CBMs of 1993 and 1996 **did not prevent** Galwan 2020

### India-China-Bhutan tri-junction

#### Significance

- The **Jampheri/Zompelri Ridge** directly overlooks the **Siliguri Corridor**, India's only land link to its eight northeastern states
- The **Siliguri Corridor ("Chicken's Neck")** is barely ~22 km wide at its narrowest; any Chinese military access near it is an existential strategic threat
  - A favourable tri-junction gives China greater **strategic depth and observation capability** from the Chumbi Valley

#### Boundary Dispute

- **India and Bhutan's Position:** India and Bhutan maintain that the tri-junction lies near Batang La, which is about 6.5 km north of Gipmochi.
- **China's Position:** China insists that the 1890 Convention places the tri-junction at Mount Gipmochi, which gives China a more advantageous position.

### Should India Accept Sector-Wise Settlement?

- **Arguments For**
  - Incremental progress prevents complete stagnation of boundary talks
  - Reduces day-to-day friction and ambiguity in settled regions
  - Confidence-building effect may improve the broader bilateral atmosphere
  - Frees diplomatic bandwidth for trade, connectivity and people-to-people engagement
- **Arguments Against**
  - **Loss of leverage:** settled sectors permanently exit the negotiating table; India cannot revisit them
  - **Siliguri Corridor risk:** even marginal shifts in the tri-junction location threaten India's most critical strategic chokepoint
  - **Fragments 2005 framework:** abandons the comprehensive package approach India painstakingly negotiated over decades
  - **Signals weakness:** may embolden China to push harder in Western and Eastern sectors
  - **Bhutan dimension:** settling Sikkim without tri-junction clarity could damage India-Bhutan relations

### Way Forward

- Pursue **comprehensive political settlement** rooted in the 2005 framework , resist piecemeal concessions under diplomatic pressure
- Make **full disengagement** at all friction points a firm precondition, no settlement talks should advance while Chinese troops occupy previously unpatrolled areas
- Accelerate **border infrastructure parity**-roads, tunnels, airfields, border villages under the **Border Area Development Programme (BADP)**
- Coordinate actively with **Bhutan** to ensure any tri-junction resolution protects both countries' interests
- Leverage **QUAD and Indo-Pacific partnerships** to raise the diplomatic cost of Chinese coercion
- Institutionalise **LAC monitoring mechanisms**: satellite surveillance, patrol coordination, hotlines to prevent surprise incursions

