



MAINS ARTICLE

GS-I • FERTILITY LEVELS DROP BELOW ONE IN MANY ASIAN NATIONS

- GS-II ONLINE VOTING, AN IDEA THAT HOLDS PROMISE
- GS- III D AVIATION SECTOR:

 CONTRIBUTOR TO GREEN HOUSE

 EFFECT
 - HOW INDIA'S BEACHES CAN UNLOCK A NUCLEAR-POWERED FUTURE
 - **TO WEALTH CREATION**
 - IMF: US, CHINA DEBT POSE RISKS FOR GLOBAL PUBLIC FINANCES
 - **□** CENTRE'S TWEAK IN GREEN CREDIT PROGRAMME NORMS
 - ON INDIA'S 'HEAT ACTION PLANS'
 - INDIA-JAPAN FREE TRADE DEAL LIKELY TO BE REVIEWED SOON

PRELIMS ARTICLE

HISTORY

Operation Meghdoot

GEOGRAPHY

- Siachen Glacier
- Tiger Hill

INTERNATIONAL RELATIONS

Arctic Council

SPACE

Angara-A5 Rocket

ENVIRONMENT

- Soil Acidification
- Ashwagandha (Withania somnifera)
- Parrot Fish (Family: Scaridae)
- checkerboard wrasse (Halichoeres hortulanus)
- Flood in UAE

DEFENCE

- Iron Dome System
- LCA Mark 1A

ECONOMIC

- Wholescale Price Inflation
- Green Bonds

TERMS OF THE WEEK



DISCLAIMER

he current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

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SECTION A

MAINS ARTICLES

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- 9. India-Japan Free Trade Deal Likely to be Reviewed Soon



1. FERTILITY LEVELS DROP BELOW ONE IN MANY ASIAN NATIONS

Context: Many countries in East and Southeast Asia are in the midst of a population crisis, with fewer births every year and record-low fertility rates.

1: Dimension- Declining Fertility Rates in Asian Nations

- Crisis in Population Dynamics: Many countries in East and Southeast Asia are facing a severe population crisis, characterized by a steady decline in birth rates and record-low fertility rates.
- Historical Context: Between 1950 and 1970, fertility rates in East Asian and Southeast Asian nations ranged from 3.5 to 7.5, illustrating a significant shift over time.
- Current Fertility Rates: Countries like South Korea, Singapore, Hong Kong, and Taiwan are witnessing fertility rates lower than one, indicating a critical situation where the average number of children per woman falls below the replacement level.
- Current Situation: In recent times, several hospitals in China have ceased offering newborn delivery services due to declining demand, showcasing the stark reality of diminishing birth rates.

2: Dimension-Factors Contributing to Declining Fertility

- Changing Societal Trends: Factors such as couples opting to remain childless, individuals choosing to stay single, and the escalating costs associated with raising children have contributed to the decline in fertility rates.
- Policy Impact: Historical slogans promoting strict family planning measures in countries like South Korea and Singapore have influenced societal norms and impacted fertility rates.
- Economic Considerations: The increasing opportunities for women in the workforce, declining marriage rates, and the financial burden associated with raising children have further exacerbated the decline in fertility rates.

3: Dimension- Implications of Declining Fertility Rates

- Population Imbalance: The imbalance created by poor fertility rates results in an aging population, with older individuals forming a significant proportion of the demographic landscape.
- Socio-economic Challenges: The aging population poses various socioeconomic challenges, including increased dependency ratios and strains on healthcare and pension systems.

Financial Burden: Governments are implementing costly programs and incentives to encourage childbirth, but the effectiveness of these initiatives in reversing fertility trends remains uncertain.

4: Dimension-Addressing the Population Crisis

- Investment in Social Support: Governments should prioritize investments in social support systems, including childcare facilities, parental leave policies, and financial assistance programs, to alleviate the financial burden associated with raising children.
- Promoting Work-Life Balance: Creating conducive environments that support work-life balance, flexible employment opportunities, and gender equality in the workplace can encourage individuals to pursue both career and family aspirations.
- Maintaining Cultural Resilience: Efforts should be made to preserve cultural values and traditions surrounding family and parenthood while adapting to evolving societal norms and economic realities.

MAINS PRACTICE QUESTION

Q. "Declining fertility rates pose significant challenges to the socio-economic fabric of societies". Discuss the implications of this trend and suggest measures to address the population crisis.

2. ONLINE VOTING, AN IDEA THAT HOLDS PROMISE

Context: The landscape of governance and civic engagement has been evolving rapidly with the advent of digital technologies. From banking to e-commerce, various sectors have embraced automation and digitization. The concept of online voting emerges as a natural progression in this digital era, promising convenience and efficiency in the electoral process.

1: Dimension-Nominations

- Transition to Online Filing: Candidate nominations should be shifted from physical to online filings before Election Commission (EC) officials, incorporating robust identity verification measures.
- Leveraging E-filing Platforms: Drawing from the success of e-filing platforms in income tax and corporate laws, the transition to online nominations should be streamlined and seamless.
- Ensuring Validation Checks: Appropriate identity and validation checks must be integrated into the online filing system to maintain the integrity of the nomination process.

2: Dimension-Polling Booths

- Redundancy of Traditional Infrastructure: With the adoption of online voting, the traditional infrastructure of polling booths, EVMs, and duty personnel will become obsolete, necessitating a redefinition of roles.
- Role Redefinition: Presiding officers and EC officials' roles may need to be redefined to align with virtual monitoring and supervision, reducing the reliance on physical infrastructure.
- Limited Need for Physical Booths: While a limited number of physical booths may still be necessary initially, the gradual shift towards online voting will significantly reduce the requirement for physical infrastructure.

3: Dimension-Voter list

- Streamlining Voter Registration: Linking Aadhaar with the voter ID facilitates seamless identification of voters, enhancing the efficiency of the registration process.
- Addressing Existing Voters: Proactive measures are required to ensure the linkage and confirmation of Aadhaar with existing voter IDs, ensuring inclusivity and accuracy in the voter list.
- Facilitating Global Voting: Integration with Aadhaar enables voters to cast their ballots from anywhere in the world on the polling day, enhancing accessibility and participation.

4: Dimension-Securing the Process

- Authentication Process: On polling day, voters should receive a web link via SMS to access the voting site on their registered mobile, initiating a two-step authentication process.
- Ensuring Integrity: Stringent measures must be implemented to prevent duplicate voting and safeguard voter data, maintaining the secrecy and integrity of the voting process.
- Addressing Data Privacy: System controls should ensure restricted access to voter data and segregation of databases to uphold data privacy and confidentiality.

MAINS PRACTICE QUESTION

Q. "Online voting holds the potential to revolutionize the electoral process". Discuss

3. AVIATION SECTOR: CONTRIBUTOR TO GREEN HOUSE EFFECT

Context: Aviation, despite constituting only a fraction of global carbon emissions, has a disproportionate impact

on climate change. Understanding the dynamics of aviation emissions is crucial in devising strategies to mitigate its environmental impact.

1: Dimension - Historical Trends

- Surge in Aviation Demand: Between 1990 and 2019, global aviation demand, encompassing both passenger and freight travel, experienced a fourfold increase. This surge reflects evolving travel patterns and economic growth, driving higher air travel volumes.
- Enhanced Energy Efficiency: Over the same period, aviation witnessed significant improvements in energy efficiency, with flying becoming more than twice as energy-efficient. Advancements in technology, aircraft design, and improved load factors contributed to this enhancement.
- Influence of Technological Advancements: The aviation sector's evolution, marked by innovations in aircraft design and propulsion systems, has played a pivotal role in improving energy efficiency. Larger aircraft with higher passenger capacity and streamlined operations have contributed to reduced emissions per passenger-kilometer.

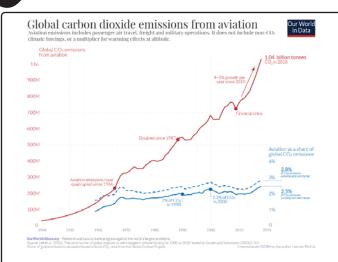
2: Dimension - Carbon Intensity

- Persistence of Carbon-Intensive Fuels: Despite advancements in aviation technology, the sector continues to rely predominantly on carbon-intensive jet fuels. The limited integration of cleaner alternatives like biofuels underscores challenges in reducing carbon intensity.
- Need for Sustainable Fuel Solutions: Addressing aviation's carbon intensity necessitates a concerted effort to explore and implement sustainable fuel solutions. Biofuels and synthetic fuels show promise but require scaling up to make a substantial impact on emissions reduction.
- Regulatory Frameworks for Emission Reduction: Effective regulation and policy frameworks are crucial in incentivizing the adoption of cleaner fuels and technologies. Government initiatives, coupled with industry collaboration, can accelerate the transition towards low-carbon aviation.

3: Dimension - Impact on CO2 Emissions

Doubling of Emissions: Despite improvements in energy efficiency, the exponential growth in aviation demand has resulted in a doubling of CO2 emissions since 1990. This underscores the challenge of reconciling economic growth with environmental sustainability





- Global Emission Trends: In 2019 alone, global aviation emitted approximately 1 billion tonnes of CO2, marking a significant contribution to overall emissions. The sector's emissions trajectory reflects broader trends in transportation and energy consumption.
- Urgency of Mitigation Strategies: Mitigating aviation emissions requires urgent action, encompassing technological innovation, policy intervention, and industry collaboration. Efforts to decarbonize aviation must align with global climate goals to limit temperature rise and mitigate environmental degradation.

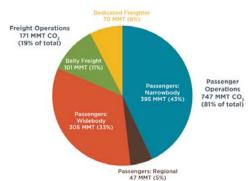


Figure 1. CO₂ emissions in 2018 by operations and aircraft class

MAINS PRACTICE QUESTION

Q. Discuss the historical trends, carbon intensity, and impact on CO2 emissions of the aviation sector, highlighting the urgency of mitigation strategies to address its environmental impact.

4. HOW INDIA'S BEACHES CAN UNLOCK A NUCLEAR-POWERED FUTURE

Context: As the nation seeks to balance energy security with environmental concerns, the exploration of thorium as a fuel source gains significance. The Indigenous Prototype

Fast Breeder Nuclear Reactor exemplifies India's efforts to harness thorium for a cleaner, more sustainable future.

Dimension- Thorium's Role in Energy Security

- Thorium is hailed as a practically inexhaustible energy source that emits no greenhouse gases, making it a sustainable alternative.
- India's extensive thorium deposits present an opportunity to reduce dependence on the uncertain uranium supply chain.
- The three-stage nuclear power programme aims to utilize thorium as a primary fuel, ensuring long-term energy security.

2: Dimension- Global Competition and Cooperation

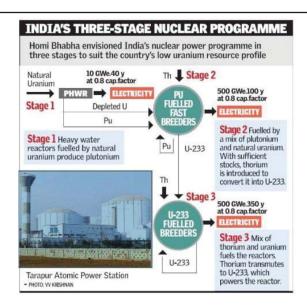
- China's advancements in molten salt thorium nuclear reactor technology highlight the global race in thoriumbased systems.
- Despite past hesitations, renewed collaboration between India and the US signals potential advancements in nuclear energy technology.
- Negotiations with other countries like France, Canada, and Russia showcase India's efforts to diversify its nuclear partnerships.

3: Dimension- Challenges and Opportunities

- Commercial utilization of thorium hinges on the availability of Uranium-233 or Plutonium resources, posing a technological challenge.
- India's efforts in thorium research and development aim to overcome technical barriers and accelerate progress towards commercial viability.
- Thorium-based systems offer immense potential in decarbonizing India's energy sector and achieving sustainable development goals.

4: Dimension- International Engagement and Diplomacy

- India's participation in international forums like the IAEA positions it as a key player in thorium-based systems.
- Leveraging its research and non-proliferation credentials, India can advocate for accelerated development of thorium-based technologies on the global stage.



MAINS PRACTICE QUESTION

Q. How does India's extensive thorium reserve present an opportunity for long-term sustainability in the energy sector?

5. CENTRE'S TWEAK IN GREEN CREDIT PROGRAMME NORMS

Context: The Union Environment Ministry has introduced amendments to the Green Credit Programme (GCP) to emphasize the restoration of ecosystems over mere tree planting, addressing concerns of potential misalignment with conservation objectives.

Key Highlights of the Programme

- Focus on Ecosystem Restoration: The revised norms prioritize the restoration of degraded forest lands rather than solely emphasizing tree planting for financial incentives, aligning with broader ecological conservation goals.
- State Participation: Thirteen states have already identified 387 parcels of degraded forest land spanning approximately 10,983 hectares for restoration efforts, indicating active state involvement in the programme.
- Role of Individuals and Organizations: Individuals and companies can contribute to ecosystem restoration by financing the restoration process through the Indian Council of Forestry Research and Education (ICFRE).
- Credit Mechanism: The programme introduces the concept of 'green credits,' wherein each planted tree evaluated by the ICFRE after two years can translate into one green credit. These credits can be utilized for compliance with forest laws or corporate social responsibility obligations.

1: Dimension - Emphasis on Ecosystem Restoration

- Clarification on Objectives: The amendments underscore the importance of restoring degraded ecosystems, acknowledging the complexity and significance of ecosystem health beyond mere afforestation.
- State-led Initiatives: State forest departments are entrusted with the task of actual afforestation activities, ensuring localized management and expertise in ecosystem restoration.

2: Dimension - Integration with Corporate Responsibility

- Utilization of Green Credits: The programme offers a dual benefit by allowing organizations to fulfill legal obligations, such as compensatory afforestation, while also integrating environmental stewardship into corporate governance practices.
- Alignment with CSR Mandates: Green credits provide organizations with a mechanism to meet corporate social responsibility requirements, fostering sustainable development practices.

3: Dimension - Adaptive Guidelines for Restoration

- ♦ Flexible Criteria: The Ministry's decision to remove the fixed requirement of 1,100 trees per hectare for reforestation reflects an adaptive approach, allowing states to tailor restoration efforts according to local ecological conditions.
- Ecosystem Diversity Considerations: Recognizing the diverse nature of degraded forests, the guidelines permit the restoration of ecosystems using a variety of vegetation types, including shrubs, herbs, and grasses, based on ecological suitability.

MAINS PRACTICE QUESTION

Q. Discuss the significance of prioritizing ecosystem restoration over mere afforestation.

6. ON INDIA'S 'HEAT ACTION PLANS'

Context: With rising temperatures across India and the onset of heat alerts as early as February, the effectiveness of Heat Action Plans (HAPs) in mitigating the impacts of heatwaves warrants examination.

1: Dimension - Implementation of Heat Action Plans

State-Level Preparedness: Governments at various levels have devised HAPs to enhance readiness and minimize adverse effects of heatwaves. Collaborative efforts



between the National Disaster Management Authority, IMD, and 23 states aim to develop comprehensive HAPs tailored to local conditions.

- Community Engagement: Effective implementation of HAPs requires active involvement and awareness among communities. Public participation through awareness campaigns, community meetings, and capacity-building workshops enhances the effectiveness of heat resilience measures.
- Inter-Agency Coordination: Seamless coordination among various agencies and departments is vital for the successful execution of HAPs. Integration of efforts between health departments, disaster management authorities, and urban planning bodies ensures a holistic approach to heatwave management.

2: Dimension - Recommendations and Strategies

- Mitigation Measures: HAPs advocate a range of strategies including early warning systems, public education campaigns, establishment of cooling centers, and provision of clean water to combat dehydration.
- Healthcare Preparedness: Hospitals are advised to equip themselves with necessary supplies and trained personnel to manage heat-related illnesses, while longterm measures emphasize urban planning for heat resilience.

3: Dimension - Challenges and Limitations

- Local Contextualization: HAPs face challenges in accurately defining heatwaves at local scales and incorporating factors like urban heat islands and humidity levels. A broader understanding of heatwave impacts beyond temperature is crucial for effective planning.
- Methodological Consistency: Variability in vulnerability assessments across HAPs underscores the need for standardized climate risk assessments and hotspot mapping to prioritize interventions effectively.
- Addressing Vulnerable Populations: While HAPs prioritize vulnerable groups, targeted interventions accounting for socio-economic disparities and infrastructure limitations are essential for equitable heat resilience.
- Resource Allocation and Integration: Dedicated funding and integration of HAPs with broader urban resilience plans can enhance implementation and ensure effective utilization of resources.
- Nature-Based Solutions: HAPs should emphasize nature-based solutions alongside infrastructural developments, incorporating green and blue spaces to combat extreme heat in hotspots effectively.

FACT BOX

Heat Wave

- Heat wave is a condition of air temperature which becomes fatal to human body when exposed.
- Quantitatively, it is defined based on the temperature thresholds over a region in terms of actual temperature or its departure from normal.
- For declaring a heat wave, the temperature should be 4.5 °C above normal for that time in a region.
- The criteria for the coastal station maximum temperature should be greater than or equal to 37 °C.

Favourable conditions of heat wave formation

- Transportation / Prevalence of hot dry air over a region: There should be a region of warm dry air and appropriate flow pattern for transporting hot air over the region.
- **Absence of moisture in the upper atmosphere:** As the presence of moisture restricts the temperature rise.
- The sky should be practically cloudless: To allow maximum insulation over the region.
- Large amplitude anti-cyclonic flow over the area.

MAINS PRACTICE QUESTION

Q. Assess the effectiveness of Heat Action Plans in mitigating the impacts of heatwaves in India.

7. KNOWLEDGE GAP: A HINDRANCE TO WEALTH CREATION

Context: Micro-entrepreneurship in India faces hurdles of inadequate training and knowledge gaps, exacerbating disparities among marginalized communities. A recent survey by Bhartiya Yuva Shakti Trust reveals concerning trends, necessitating urgent policy interventions to foster inclusive economic growth.

1: Dimension - Training Discrepancies

- ◆ Training Deficiency: The survey conducted by Bhartiya Yuva Shakti Trust (BYST) highlights a concerning reality: less than one-third of micro-entrepreneurs have received any form of training. This dearth of training extends to over half of the respondents who are unaware of the fundamental factors involved in commencing a business venture.
- Disparities in Scheduled Castes and Scheduled Tribes (SC/ST): Particularly alarming is the sharp decline in training accessibility among micro-entrepreneurs from



the SC/ST category. Only a dismal 17% and 28% of SC/ST entrepreneurs, respectively, reported receiving adequate training or mentorship.

2: Dimension - Knowledge Gap Challenges

- ♦ **GST Awareness:** The survey findings underscore a significant knowledge gap among micro-entrepreneurs regarding essential business components such as the Goods and Services Tax (GST). A mere 28% of all respondents and a paltry 20% of SC/ST entrepreneurs exhibit awareness of GST-related matters.
- Financial Literacy: The survey illuminates the pervasive lack of financial literacy among micro-entrepreneurs, particularly concerning tax management and governmental policies. Only 43% of all respondents and 37% of SC/ST entrepreneurs profess knowledge in managing and filing business taxes.

3: Dimension - Digital Preparedness

♦ **Digital Readiness:** The survey evaluates the digital preparedness of micro-entrepreneurs, revealing notable gaps in digital presence, payments, and marketing strategies. While 43% of all entrepreneurs maintain a digital presence, only 21% of SC/ST entrepreneurs are active on social media platforms.

4: Dimension- Addressing the Disparities

- Policy Reevaluation: Policy reforms are needed to enhance entrepreneurship opportunities, particularly for underserved demographics. The necessity of updating existing policies to accommodate the diverse needs of micro-entrepreneurs, especially women.
- Financial Support and Education: Initiatives such as the Mudra Yojana and Stand-Up India Scheme are pivotal in fostering entrepreneurship. However, concerted efforts are required to ensure that financial support is complemented by comprehensive education and training programs tailored to the specific requirements of micro-entrepreneurs.
- Digital Literacy Promotion: Alongside traditional business training, emphasis should be placed on enhancing digital literacy among micro-entrepreneurs, thereby empowering them to leverage digital platforms for business growth and expansion.

MAINS PRACTICE QUESTION

Q. "Access to training and knowledge remains a critical barrier to the inclusive growth of microentrepreneurship in India." Discuss

8. IMF: US, CHINA DEBT POSE RISKS FOR GLOBAL PUBLIC FINANCES

Context: The International Monetary Fund (IMF) has highlighted the escalating public debt scenarios in the United States and China, which are poised to significantly impact global economic stability in the coming years.

Key Highlights of the Report

- Report Title: Fiscal Monitor
- ♦ The IMF predicts a near doubling of public debt in both the US and China by 2053 under current policies.
- The fiscal policies of these two economic powerhouses hold profound implications for the global economy, posing significant risks for fiscal projections worldwide.
- Increased interest rates in the US could exacerbate economic challenges for other nations by elevating the value of the dollar, consequently amplifying debt burdens for countries with USD-denominated loans.
- China's economic slowdown, potentially intensified by fiscal imbalances at local government levels, poses risks to global trade, external financing, and investments.

1: Dimension - Impact on Global Financial Stability

- Escalating Debt Burdens: The projected surge in public debt in the US and China threatens to destabilize global financial markets, with repercussions for economic growth and stability worldwide.
- Interest Rate Dynamics: Higher interest rates in the US could trigger ripple effects across the globe, amplifying borrowing costs and impeding economic recovery in other countries.

2: Dimension - Implications for International Trade and Investments

- Currency Valuation Effects: Strengthening of the US dollar relative to other currencies could render dollarpriced commodities more expensive, affecting trade balances and competitiveness globally.
- China's Economic Slowdown: A potential downturn in China's economy could disrupt international trade flows and dampen investor confidence, exerting downward pressure on global growth.

3: Dimension - Challenges for Fiscal Policy Governance

Election Year Dynamics: With a significant number of countries holding elections this year, fiscal policy faces heightened pressures, potentially leading to looser fiscal stances and increased expenditure.



Risks of Fiscal Slippages: Political preferences for expanded government spending could strain fiscal discipline, exacerbating deficits and debt levels, particularly in election years.

IMF

- The International Monetary Fund (IMF) works to achieve sustainable growth and prosperity for all of its 190 member countries.
- The IMF has three critical missions: furthering international monetary cooperation, encouraging the expansion of trade and economic growth, and discouraging policies that would harm prosperity.

Roles

- ► POLICY ADVICE
- ► FINANCIAL ASSISTANCE
- ► CAPACITY DEVELOPMENT

SDR

- The IMF issues an international reserve asset known as Special Drawing Rights, or SDRs, that can supplement the official reserves of member countries.
- The SDR itself is not a currency but an asset that holders can exchange for currency when needed.

MAINS PRACTICE QUESTION

Q. How do escalating public debts in the US and China pose significant risks to global economic stability?

9. INDIA-JAPAN FREE TRADE DEAL LIKELY TO BE REVIEWED SOON

Context: India's 2011 free trade deal (FTA) with Japan is likely to be reviewed in the coming months, with New Delhi keen to minimize the trade deficit with Tokyo, according to sources familiar with the matter

1: Dimension - Need for Review

- Trade Imbalance: Despite the 2011 Comprehensive Economic Partnership Agreement (Cepa) between India and Japan, the trade balance has been largely in favor of Japan, resulting in a significant trade deficit for India. Initiating a review of the deal is aimed at addressing this imbalance and ensuring more equitable trade relations between the two countries.
- Demand for Equitable Terms: India has long pursued the demand for a review of the FTA with Japan, emphasizing the need for more balanced and fair terms that benefit both nations. This includes revisiting non-

- tariff measures that have posed challenges for Indian companies and Micro, Small, and Medium Enterprises (MSMEs) in accessing the Japanese market.
- Impact of Economic Changes: Since the signing of the FTA in 2011, there have been significant economic changes in both India and Japan. A review of the deal is essential to align it with the current economic realities and address any disparities that may have emerged over time.

2: Dimension - Issues to be Addressed

- Non-Tariff Measures: One of the key areas of discussion in the review will be non-tariff measures, such as rules of origin (ROO) and product-specific rules (PSRs). These measures have impacted Indian businesses, particularly in terms of eligibility for preferential tariffs and determining the national source of products.
- Concerns Over Trade Deficit: India's imports from Japan have consistently outweighed its exports, leading to a widening trade deficit. Addressing this concern requires revisiting the terms of the FTA to ensure a more balanced flow of trade between the two countries.
- Market Access: The review will also focus on enhancing market access for Indian products in Japan. This includes addressing barriers and restrictions that hinder the entry of Indian goods into the Japanese market and exploring opportunities for expanding the range of products traded between the two countries.

3: Dimension - Prospects and Challenges

- Potential Impact on Indian Exports: While renegotiating the FTA with Japan may help address some of India's concerns regarding trade imbalances, there are doubts about its potential to significantly boost Indian exports. Low import duties in partner countries could limit the effectiveness of the renegotiation in increasing India's exports post-FTA.
- Navigating Complexities: The review process will involve navigating complex issues related to trade regulations and market access. Addressing concerns such as rules of origin and product-specific rules will require careful negotiation and collaboration between Indian and Japanese authorities.
- Geostrategic Considerations: Beyond economic factors, the review of the FTA with Japan also has geostrategic implications. Strengthening trade ties with Japan can contribute to India's broader strategic interests in the Indo-Pacific region, providing opportunities for enhanced cooperation and alignment on regional security and economic issues.

MAINS PRACTICE QUESTION

Q. There is a persistent trade deficit of India with its FTA partners. Critically analyze.

section B

QUICK BYTES

- 1. Operation Meghdoot
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- **NAVI MUMBAI**
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- **PATNA**
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- **PUNE**

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1. OPERATION MEGHDOOT

Context: IAF celebrates 40th Anniversary of 'Operation Meghdoot' with continued dominance in Northern Ladakh region.

About Operation Meghdoot

- Meghdoot was launched on 13 April 1984, when the Indian Army and Indian Air Force (IAF) advanced to the Siachen glacier to secure the heights dominating the Northern Ladakh region.
- The operation involved the airlifting of Indian Army soldiers by the IAF and dropping them on the glacial peaks.
- Siachen is the highest battlefield ever or the world's highest helicopter landing.

2. SIACHEN GLACIER

Context: Recently Indian airforce has celebrated 40 years of operation Meghdoot which led to the capture of Siachen glacier.

About

- The Siachen Glacier is a glacier located in the <u>eastern</u> <u>Karakoram range in the Himalayas</u> just northeast of the point NJ9842 where the Line of Control between India and Pakistan ends.
- The Siachen Glacier lies immediately south of the great drainage divide that separates the Eurasian Plate from the Indian subcontinent in the extensively glaciated portion of the Karakoram sometimes called the "Third Pole".
- The entire Siachen Glacier, with all major passes, is currently under the administration of India since 1984 (Operation Meghdoot).



3. TIGER HILL

Context: Iconic Tiger Hill near Darjeeling under 'development' threat, NGT pulls up government departments as it has been severely deteriorated due to unplanned activities.

About

- Tiger Hill is famous for watching sunrises on the background of Mt Kanchenjunga.
- It is part of the Senchal wildlife sanctuary, one of the oldest wildlife sanctuaries in the country that was established in 1915, holding two lakes that act as the main sources of drinking water to the town of Darjeeling.
- The hill is 2,590 meters high, 13 kilometers from Darjeeling.

4. ARCTIC COUNCIL

Context: India's maiden winter expedition at the Arctic have put the focus back on cooperation with Arctic circle countries and related governance architecture.

About Arctic Council

- The Arctic Council is the leading intergovernmental forum promoting cooperation, coordination and interaction among the Arctic States, Arctic Indigenous Peoples and other Arctic inhabitants on common Arctic issues, in particular on issues of sustainable development and environmental protection in the Arctic. It was formally established in 1996.
- ♦ All Arctic Council decisions and statements require consensus of the eight Arctic States.
- The Arctic Council is a high-level intergovernmental body set up in 1996 by the Ottawa declaration to promote cooperation, coordination and interaction among the Arctic States together with the indigenous communities and other Arctic inhabitants.
- Arctic Councilis an intergovernmental forum that addresses issues faced by the Arctic governments and the indigenous people of the Arctic.
- At present, eight countries exercise sovereignty over the lands within the Arctic Circle.
- Members of Arctic Council are- Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and United States.
- Headquarters of Arctic Circle is located at Tromso, Norway.
- Permanent participants:
 - ➤ Aleut International Association (AIA),
 - ➤ Arctic Athabaskan Council (AAC)
 - Gwich'in Council International (GCI)
 - Inuit Circumpolar Council (ICC)
 - Russian Association of Indigenous Peoples of the North (RAIPN)
 - Saami Council



India has observer status since 2013.

Status of India's presence in Arctic as of now?

- India has had a research base in the Arctic since 2008 and also has two observatories in the region.
- The country presently has a single station, Himadri, in Ny-Alesund, Svalbard, a Norwegian archipelago, where research personnel are usually present for 180 days.
- It is in the **process of procuring an ice-breaker research vessel** that can navigate the region.
- India, since 2007, has so far sent 13 expeditions to Arctic and runs 23 active science projects on the region.
- About 25 universities and institutes in India are involved in Arctic research in India.
- India has "Observer" status in Arctic Council.



5. ANGARA-A5 ROCKET

Context: Russia test-launched its Angara-A5 space rocket for the first time from the Vostochny Cosmodrome in the Far East, successfully putting a test load in low orbit as part of an effort to develop a new post-Soviet launch vehicle.

About

- ♦ It is a Russian heavy lift launch vehicle Weighing 773 tonnes at lift-off, Angara A5 has a payload capacity of 24.5 tonnes to a 200 km (120 mi) x 60° orbit.
- ♦ Angara A5 is able to deliver 5.4 tonnes to GTO with Briz-M, or 7.5 tonnes to the same orbit with KVTK.
- The Angara A5 is said to be much more environmentally friendly compared with Proton M.

India's LVM 3

- LVM-3 or Launch Vehicle Mark-III, is a three-stage medium-lift launch vehicle developed by ISRO and earlier known as the GSLV Mark III.
- It is the **most powerful rocket** in the space agency.
- Lift-off mass: 640 tonnes.

Payload capacity:

- ➤ upto 8,000 kilograms to a **low-Earth orbit**.
- ➤ Upto 4,000 kilograms of payload to a **geostationary transfer orbit**
- Its cryogenic upper stage is powered by CE-20 (India's largest cryogenics engine).
- The core stage is powered by two L110 liquid-stage Vikas rockets.

6. SOIL ACIDIFICATION

Context: Acidification may strip Indian soils of 3.3 billion tonnes of essential carbon, affecting crop growth, sequestration.

About

- Over 30 per cent of cultivable land in India is said to carry acidic soil, impacting plant growth.
- Acidic soil also leads to loss of soil inorganic carbon
- Soils are turning acidic due to industrial activities and intense farming.
- ♦ Acidic soils affect crop growth and productivity by reducing the availability of plant nutrients.
- Soil acidity can be improved by adding lime or limestone (calcium carbonate) and similar compounds.

7. ASHWAGANDHA (WITHANIA SOMNIFERA)

Context: Exports of Ashwagandha (Indian Ginseng) have risen by eight times in the last six years with the herb reaching overseas markets like the United States, Czech Republic and Canada.

About

- It is an evergreen shrub in the Solanaceae or nightshade family that grows in India, the Middle East, and parts of Africa.
- The plant, particularly its root powder, has been used for centuries in traditional Indian medicine.
- It is classified as an adaptogen, which means that it can help the body to manage stress.
- Ashwagandha has shown clinical success in treating both acute and chronic rheumatoid arthritis.
- ♦ IUCN Status: Data deficient

8. PARROT FISH (FAMILY: SCARIDAE)

Context: Parrotfish are colorful, tropical creatures that spend about 90% of their day eating algae off coral reefs. However it's eating habit are proving to be a challenge for coral rejuvenation.

About Parrot Fish

- Parrotfish are named for their dentition, which is distinct from other fish, including other labrids.
- Their numerous teeth are arranged in a tightly packed mosaic on the external surface of their jaw bones, forming a parrot-like beak with which they rasp algae from coral and other rocky substrates.
- The parrotfishes' digestive system, which includes more teeth inside their throats breaks down coral bits into the white sands that make South Pacific beaches famous.
- ♦ IUCN Status: Can face localized extinction

9. CHECKERBOARD WRASSE (HALICHOERES HORTULANUS)

Context: Three fish species that live in the Laccadive Sea, off the southwest corner of the Indian coast, are capable of using tools.

About

- It is a fish belonging to the wrasse family. It is native to the area including the Indian Ocean to central Pacific Ocean.
- The species feeds primarily on sand-dwelling gastropods, bivalves, hermit crabs, polychaetes and small fishes.
- ♦ IUCN Status: Least Concern

10.FLOOD IN UAE

Context: UAE receives its highest rainfall in 75 years, with 1.5 year's worth of rain falling over Dubai in 24 hours.

About

- The UAE witnessed the largest amount of rainfall during the past 75 years.
- Dubai is experiencing major flooding as 1.5 year's worth of rain just fell in a single day. Nearly 5 inches (127 mm) fell in 24 hours,"

- Dubai and UAE are situated in the Arabian Peninsula (AP), which has an extremely arid and dry climate.
- ♦ A study published in 2020 noted that there will be "a robust increase in annual mean precipitation over the southern AP, and a decrease over the northern AP".
- It was also the driest year on record, with the country's annual total rainfall in deficit, compared with the longterm average (2003-2022).

11. IRON DOME SYSTEM

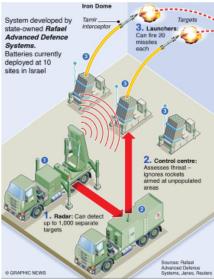
Context: Israel's multilayered air-defence system is credited with protecting the country from serious damage or casualties from an Iranian strike by more than 300 drones and ballistic missiles.

About

- Iron Dome is a short-range anti-rocket, anti-mortar, and anti-artillery system with an intercept range of 2.5 to 43 miles and was developed by Rafael Advanced Defence Systems of Israel.
- ♦ Each Iron Dome battery is designed to defend a 60-square-mile populated area and can be moved as threats change.

Israel's Iron Dome air defence system

Designed to intercept short-range rockets fired from up to 70km awar Iron Dome consists of a radar, control centre and launchers.



Israel has a four-layered air defence network to tackle a range of projectiles, short-range mortars, rockets and long-range ballistic missiles.

- Iron Dome (short range)
- David's Sling (low to mid-range)
- Arrow II (upper-atmospheric)
- Arrow III (exo-atmospheric)



India's Missile Defence Systems

- 1st layer (Endo): The single stage solid rocketpropelled Advanced Air Defence (AAD) low-altitude interceptormissile. (Ashwin)
- 2nd layer (Exo): Prithvi Air Defense Vehicle known as Pradyumna Ballistic Missile Interceptor is designed to destroy missiles with ranges 300-2000 km at exoatmosphere (about 80km altitude).
- For higher altitudes upto 150 km, Agni-V-based ballistic interceptors would be used. (because of 5000km range)
- **S-400:** It has a range of up to 400 km, at an altitude of up to 30 km and can engage up to 36 targets simultaneously, with four different types of missiles.
- Project Kusha: Project Kusha led by the Defence Research and Development Organisation (DRDO) is an ambitious defence initiative by India aimed at developing its long-range air defence system by 2028-29.

12.LCA MARK 1A

Context: Defence ministry to procure 97 LCA Mark 1As from HAL in biggest-ever indigenous military equipment order.

About LCA

- Light Combat Aircraft Mk-1A variant is an indigenously designed, developed and manufactured state-of-the-art modern 4+ generation fighter aircraft.
- ♦ Tejas LCA Mk-1A will be superior over previous variants of LCA Tejas, in terms of avionics, performance, and weapons capabilities.
- This aircraft is equipped with critical operational capabilities of Active Electronically Scanned Array (AESA) Radar, Beyond Visual Range (BVR) Missile, Electronic Warfare (EW) Suite and Air to Air Refuelling (AAR).
- ♦ LCA Tejas Mk-1A will be flexible enough for hardware and software integration that would be required to fire different types of Beyond Visual Range (BVR), which are available in the inventory of the Indian Air Force (IAF).
- It is the first "Buy (Indian-Indigenously Designed, Developed and Manufactured)" category procurement of combat aircrafts with an indigenous content of 50% which will progressively reach 60% by the end of the programme.

13. WHOLESCALE PRICE INFLATION

Context: India's wholesale price inflation quickened to a three-month high of 0.53% in March, from 0.2% in February, with the food index rising 4.65%.

About WPI

- ♦ A wholesale price index (WPI) measures change in the overall price of goods before they are sold at retail.
- This includes the prices charged by manufacturers and, often outside the U.S., wholesalers.
- Usually expressed in terms of the percentage change from the prior month or a year earlier, the WPI is an inflation indicator.
- Wholesale price indexes are reported monthly to track the overall rate of change in producer and wholesale prices.
- ♦ The index is set at 100 for its base period, and calculated based on subsequent price changes for the aggregate output of goods.

How does it indicate Inflation? (WPI vs. CPI)

- A wholesale price index (WPI) is a measure of inflation based on the prices of goods before they reach consumers.
- It includes price rise in food, fuel and all other commodities. The inflation rate expressed in Wholesale Price Index (WPI) usually denotes the 'headline inflation'.
- ♦ Though Consumer Price Index (CPI) values are often higher, WPI values traditionally make headlines.
- WPI tracks inflation at the producer level and CPI captures changes in prices levels at the consumer level. WPI does not capture changes in the prices of services, which CPI does.
- The WPI is dominated by the prices of manufactured goods while the CPI is dominated by the prices of food articles.
- As such, broadly speaking, if food prices go up sharply, it will bump up the retail inflation rate far more than it would spike the wholesale inflation rate. The reverse will happen when prices of manufactured products (such as TVs and cars) rise sharply.

Imported Inflation

- ➤ Imported inflation is a general and sustainable price increase due to an increase in costs of imported products.
- Bearish expectations
 - ➤ A **negative outlook** on business activity for a future period of time.
 - ➤ A bearish market points to an **expectation that the prices will go down**.

14. GREEN BONDS

Context: The Centre may borrow a total of ₹20,000-25,000 crore through sovereign green bonds in FY25.

About

What Are Green Bonds?

- Category: Debt Instruments
- Simply put, Green bonds are financial instruments that finance green projects and provide investors with regular or fixed income payments.
- Inception: The first green bond was issued in 2007 by the European Investment Bank, the EU's lending arm.
- Issued by: Green bonds are the bonds issued by any sovereign entity, inter-governmental groups or alliances, and corporates.
- ♦ **Aim:** The proceeds of the bonds are utilized for projects classified as **environmentally sustainable**.

15. GREEN BONDS

Context: Government of India is likely to issue 20000 cr-25000 cr of green bonds for which it has allowed Foreign institutional Investors (FIIs) to invest in it.

About

- Green bonds are a type of fixed-income investment used to fund projects with a positive environmental impact.
- Like traditional bonds, green bonds offer investors a stated return and a promise to use the proceeds to finance or refinance sustainable projects, either in part or whole.
- ♦ They follow the Green Bond Principles stated by the International Capital Market Association (ICMA).
- ♦ **Issues:** Transparency and reporting, some bonds may have lower liquidity than traditional ones, greenwashing.

Blue Bonds

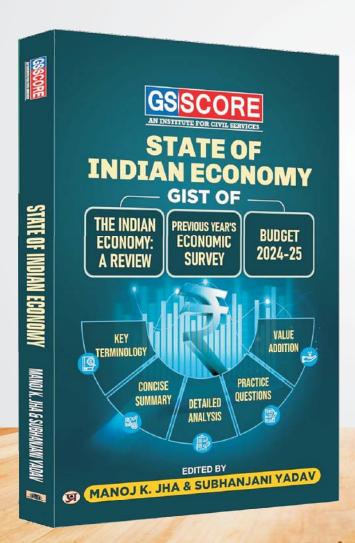
- Blue bonds are sustainability bonds used to finance projects that protect the ocean and related ecosystems.
- They might support sustainable fisheries, protection of coral reefs and other fragile ecosystems, or reducing pollution and acidification.
- All blue bonds are green bonds, but not all green bonds are blue bonds.





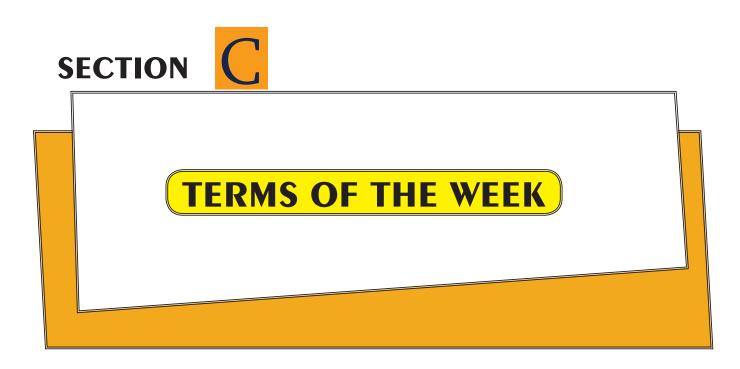
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S.NO.	TERM	ABOUT
1	Greenwashing	 Greenwashing is a marketing technique that deceives the public into believing that a company's products, policies, or aims are environmentally friendly. It's also known as green sheen, and is a combination of the words "whitewash" and "green".
2	Grasshopper Effect	The grasshopper effect, also known as global distillation, is a geochemical process that transports certain chemicals from warmer to colder regions of the Earth.
3	Prepaid Payment Instrument (PPI)	 A prepaid payment instrument (PPI) is a digital payment solution that allows users to store money electronically and use it for a variety of transactions, including online shopping, bill payments, and money transfers. PPIs can be used to purchase goods and services at a group of merchant locations that have a contract with the issuer to accept PPIs as payment instruments. PPIs can be issued as cards or wallets.
4	RCS (Rich Communication System)	 RCS (Rich Communications Services or Suite) provides customers with voice and SMS services such as, instant messaging, files sharing, or live video over a network to provide a more effective communication experience.
5	Blue Holes	Blue holes are large, underwater sinkholes or caves characterized by their deep blue color and unique ecosystem. These formations typically occur in coastal regions or in underwater cave systems. Over time, blue holes form as limestone or other soluble rock erodes, creating a depression or cavity that extends below the water surface.
6	Wokeism	Wokeism is a set of theories that revolve around gender, race, and identity. It is a promotion of liberal progressive ideology and policy as a way of expressing sensitivity to systemic prejudices and injustices.
7	Star Campaigner	 A star campaigner is a celebrity vote seeker in an election for a party. This person can be anyone, a politician or even a film star. A 'recognised' National or State party declared as such by the ECI can nominate a maximum of 40 star campaigners. An unrecognised political party can nominate a maximum of 20 star campaigners.
8	Bioerosion	Bioerosion describes the breakdown of hard ocean substrates – and less often terrestrial substrates – by living organisms. Marine bioerosion can be caused by mollusks, polychaete worms, phoronids, sponges, crustaceans, echinoids, and fish
9	Waqf Board	Waqf is a permanent dedication of movable or immovable properties for religious, pious or charitable purposes as recognized by Muslim Law. The Waqf Institutions deal with the religious, social and economic life of Muslims.
10	Follow on Public Offer (FPO)	A follow-on offering (FPO) is an issuance of stock after a company's initial public offering (IPO).
11	Bleisure	 Bleisure is a travel trend that combines business and leisure travel, often by adding vacation days or activities to trips after meetings.
12	Parkinson's disease	 Parkinson's disease (PD) is a chronic brain disorder that affects the central nervous system's motor and non-motor systems. Symptoms include: Slow movement, Tremors, Involuntary movement, Rigidity, Trouble walking, Imbalance, Cognitive impairment, Mental health disorders, Dementia, Sleep disorders, and Pain
13	Police State	A police state describes a state whose government institutions exercise an extreme level of control over civil society and liberties.

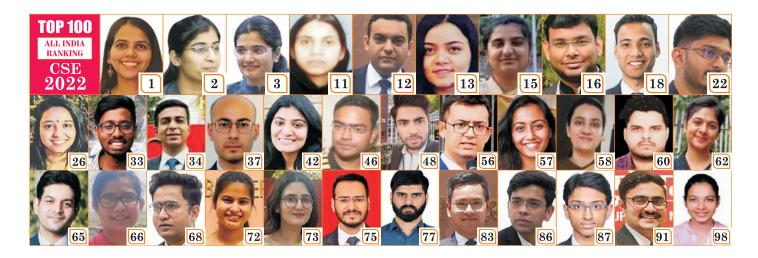


14	Climate litigation	Climate litigation is a global movement that involves lawsuits against governments, fossil fuel firms, and airlines. The lawsuits are used to set precedents for climate action and shape climate policy.	
15	Manifesto	It is a public declaration of policy and aims, especially one issued before an election by a political party or candidate.	
16	Quantum Supremacy	It is the ability of a quantum computer to perform calculations faster than a classical computer on a problem that no classical computer can solve in any feasible amount of time.	
17	All We Imagine As Light	It is the first Indian title in over 40 years to feature in the prestigious In Competition section of the Cannes Film Festival	
18	Toll Operate Transfer (TOT)	It is a public-private partnership that allows private entities to collect tolls on infrastructure projects for a set period of time, after which the ownership and operation are transferred back to the government.	
19	Non-Tariff Barrier	These are methods that restrict the import or export of goods or services through mechanisms other than tariffs. These barriers can include quotas, embargoes, sanctions, levies, regulations, and rules of origin.	
20	Cryogenics	Cryogenics is the science of materials at temperatures below negative 153 degrees C	
21	Hubble Tension	The current rate of the expansion of the universe is faster than what astronomers expect it to be, based on the universe's initial conditions and our present understanding of the universe's evolution which is termed as Hubble tension.	









SUCCESS IS A PRACTICE WE DO!

