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AUGUST, 2024

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DISCLAIMER

*T*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 ISSUES

INDIA & MALAYSIA ELEVATE TIES TO COMPREHENSIVE STRATEGIC PARTNERSHIP

CONTEXT

India and Malaysia have decided to elevate their Enhanced Strategic Partnership to a Comprehensive Strategic Partnership.

Key-highlights

- The Enhanced Strategic Partnership between the two countries is going to complete its 10 years, and in the last two years, there has been a new momentum and energy in their partnership.

- **Bilateral Cooperation:**

  - **MoUs Signed:** Agreements were signed on various fronts, including recruitment and employment of workers, Ayurveda, digital technologies, culture, tourism, public administration, youth and sports, and financial services.

  - **Economic and Trade**: Bilateral trade reached a record high of USD 19.5 billion. Both sides encouraged further industry cooperation and investments and discussed the review of the **ASEAN-India Trade in Goods Agreement (AITIGA).**

  - **Defence**: Both countries committed to expanding defence cooperation, including joint exercises and capacity building.

- **Digital and Technological Cooperation**: A MoU on Digital Technologies was signed, aiming to establish the Malaysia-India Digital Council and enhance collaboration in areas like **5G, quantum computing, and cybersecurity.**

- **Education and Capacity Building:** Malaysia welcomed the allocation of 100 seats under India's Technical and Economic Cooperation (ITEC) Programme and the establishment of academic chairs in Ayurveda and Indian Studies.

- **Tourism and People-to-People Ties:** Both leaders agreed to promote tourism, streamline visa regimes, and enhance connectivity. Malaysia's designation of 2026 as "Visit Malaysia" was noted.

- **Climate Change and Sustainability**: Both countries committed to advancing sustainable energy and climate adaptation efforts and welcomed Malaysia's participation in the **International Big Cat Alliance (IBCA).**

Significance of Malaysia for India

- **Cooperation in multilateral forums:** Malaysia is an important partner of India in **ASEAN and the Indo-Pacific region.** India gives priority to ASEAN centrality. They also collaborate in global forums such as the **UN, G20, and the World Trade Organisation (WTO)**

- **Trade:** Bilateral trade between India and Malaysia is already robust, with a volume of around US$20 billion. Malaysia is **India's 16th largest trading partner**, while India ranks among the top ten trading partners for Malaysia.

  - Malaysia ranks as the 31st largest investor in India with FDI inflow of $3.3 billion.

Trade in respective currency: The two countries have also initiated the practice of settling bilateral trade in their respective currencies, the **Indian Rupee** and the **Malaysian Ringgit**, which is seen as a significant step towards reducing dependency on third-party currencies like the US dollar.

- **Defence Cooperation**: Defence cooperation between India and Malaysia is a key aspect of their bilateral relationship, underscored by a Memorandum of

Understanding (MoU) on Defence Cooperation signed in 1993. An amendment to the MoU was signed in July 2023.

➤ The 12th edition of the Malaysia-India Defence Cooperation (MIDCOM) was held in September 2023 in New Delhi.

➤ Indian Navy ships frequently visit Malaysian ports, fostering naval interaction amidst the CONTEXT of territorial disputes in the South China Sea involving China.

INDIA-JAPAN 2+2

CONTEXT

India and Japan held a fresh edition of "2+2" dialogue amid China's increasing military muscle-flexing in the region.

What is "2+2" dialogue?

◉ The "2+2" dialogue is a high-level diplomatic and strategic meeting format where the Foreign and Defence Ministers of two countries come together to discuss and coordinate on bilateral and regional security issues. This format aims to deepen cooperation on security, defence, and strategic matters, reflecting the importance both countries place on their relationship.

◉ The "2+2" dialogue is part of a select group of high-level strategic consultations that India has with a few countries, including the United States, Australia, and Russia.

Key Highlights of the India-Japan "2+2" Dialogue

◉ The dialogue takes place within the broader framework of a **free, open, and rules-based Indo-Pacific region**, reflecting concerns about China's increasing military assertiveness.

◉ It emphasizes the strategic partnership between India and Japan, which has evolved into a special strategic and global partnership over the past decade.

Strategic Partnership:

➤ The dialogue underscores the deepening of the **India-Japan partnership**, which is based on shared democratic values and adherence to the rule of law.

➤ Both sides aim to build upon their strategic cooperation to address common challenges and foster a stable and secure Indo-Pacific region.

◉ **Defence Cooperation:** The discussion highlights the importance of the defence partnership in achieving India's goal of becoming a developed nation by 2047, with a focus on enhancing domestic defence capabilities.

➤ The two countries also reviewed the progress made for the transfer of Japan's Nora-50 naval antenna, also known as "Unicorn (**Unified Complex Radio Antenna**)" and related technologies to India for naval warships to detect missile and unmanned aerial platforms.

➤ Once materialised, this will be Japan's first transfer of a military technology to India under a 2015 agreement.

◉ **Bilateral and Regional Impact:** The partnership aims to contribute to freedom, inclusivity, and transparency in the Indo-Pacific, crucial for maintaining regional stability.

FACT BOX

What is the NORA-50?

◉ The NORA-50 is an **advanced communication antenna system** developed by Japanese companies.

◉ It is designed for use on naval ships to provide **reliable and secure communication** in challenging maritime environments.

Key Features:

➤ **Stealth Design:** The antenna features a bar-shaped dome known as 'UNICORN' (UNIted Combined Radio aNtenna) that reduces its radar cross section (RCS), making it stealthy.

➤ **Broad Frequency Range**: It supports multiple communication bands, which is essential for effective communication over both short and long distances.

➤ **Omnidirectional Radiation**: The antenna can transmit and receive signals in all directions, allowing ships to maintain communication with multiple stations without needing to reposition the antenna.

➤ **Compact and Lightweight**: The NORA-50 is smaller and lighter compared to older models, which is important for naval vessels where space and weight are limited.

➤ **Durability:** Constructed from advanced composite materials, it resists corrosion and withstands harsh maritime conditions.

➤ **Automatic Tuning**: The system can quickly adjust to different frequencies as needed, adapting to changing communication requirements.

➤ **Advanced Filtering**: It minimizes interference to ensure clear signal transmission, crucial in busy electromagnetic environments.

➤ **Anti-Jamming Features**: The antenna includes technology to protect communications from electronic jamming and ensure reliability even in electronic warfare situations.

Current Use:

➤ The NORA-50 is installed on the **Mogami-class frigates of the Japanese Maritime Self-Defence Force (JMSDF).**

➤ It may also be considered for **Japan's Next Generation Offshore Patrol Vessel (OPV) program.**

INDIA-POLAND RELATIONS

CONTEXT

Prime Minister Narendra Modi is on his three-day visit to Poland and Ukraine. Prime Minister Modi's visit to Poland is the first visit of an Indian PM to Poland in 45 years since Morarji Desai's Warsaw visit in 1979. The timing of this visit coincides with the **70th anniversary of diplomatic relations between India and Poland.**

India-Poland Relations (Chapters of history)

- **Chapters of history:** During World War II, the **Maharaja of Jamnagar** (Jam Sahab Digvijay of Nawanagar) provided refuge to several hundred Polish women and children trying to reach the West, sheltering them on his estate in Gujarat for several months.
  - Jam Saheb, who is referred to as **'Good Maharaja'** in Poland, had provided refuge in his kingdom at a place called **Balachadi.**
  - Similarly, a Polish camp was set up in Valivade in the Kolhapur Presidency (now in Maharashtra), ruled by Bhosale Chatrapati, during the war.
- In 1944, Indian and Polish soldiers fought together in the **Battle of Monte Cassino, Italy**, against **Nazi Germany**. It was one of the toughest battles fought by Indian soldiers during the **Second World War.**

How are the relations in the present times?

- India and Poland established diplomatic relations in 1954.
- **Education:** Today, Polish universities educate thousands of students from India.
- **Tourism and business** are growing in both directions, with Indian companies investing in Poland, particularly in the IT, biotechnology, electronics, and packaging sectors. In 2023, these companies employed about 10,000 Polish workers and invested over US$ 3 billion.
- Poland is also home to a small Indian community. About 10,000 to 15,000 Indians work in IT, finance, business, and academic institutions in the European country

Economic Cooperation

- **Technological and Industrial Links:** Southern Indian States of **Karnataka, Kerala, and Tamil Nadu** are pivotal centers for modern technology and industry. Tycoons like Infosys and Wipro have established service centers in Poland, which significantly contribute to job creation and technology transfer.
- **Shipbuilding and Port Industry:** South India also has a robust shipbuilding industry, with critical ports located in Maharashtra, including Mumbai, which is the economic and financial hub of India. **Mumbai handles 90% of imports from European Union** countries. The Reliance Group has a long history of trade with Poland dating back to the 1970s.

- **Trade and Investment Growth:** Indian companies from Gujarat and Haryana have established trade and investment cooperations with Poland, notably in the dairy and automotive industries.
- **Polish Investments in India:** India is the **second-largest market** for **Polish foreign direct investments** in Asia.
- **Current Trade Relations:** Trade between Poland and India has shown notable progress, although it has yet to reach its full potential.
  - In 2019, India was Poland's 28th largest trading partner, ranking 40th in exports (0.3%) and 25th in imports (0.8%).
  - By 2021, bilateral trade reached USD 4.3 billion, a significant year-on-year increase of 57%. Exports from Poland to India reached EUR 1.5 billion, while imports totaled EUR 3.868 billion in the following year.
  - The EU is India's largest trading partner, accounting for €124 billion worth of goods trade in 2023, or 12.2% of total Indian trade, topping the USA (10.8%) and China (10.5%).

Why PM Modi's Poland Trip Matters?

- Prime Minister Narendra Modi's visit to Warsaw and Kyiv comes at a crucial time, amid the **ongoing war between Russia and Ukraine.**
- India, which has historically enjoyed friendly relations with Moscow, has maintained a neutral stance on the conflict. Modi's notable declaration in 2022—**"This is not an era of war"**—emphasized India's commitment to diplomacy and dialogue.
- **Poland's Strategic Role:** Poland, a prominent member of the European Union (EU), has been a staunch supporter of Ukraine and is heavily investing in its military capabilities, with a planned expenditure of 4.12% of its GDP on defense this year, according to NATO estimates.
  - Poland's role in European security, particularly on NATO's eastern flank, makes its **strategic position significant for India.**
- **Impact on Bilateral Relations:** Modi's visit is expected to invigorate the historically dormant relations between India and Poland. This high-level engagement is anticipated to enhance bilateral ties, leveraging Poland's strategic location and defense modernization efforts to benefit both nations.
- The visit underscores India's heightened participation in matters involving **Europe and the middle-east**. In both the Russia-Ukraine conflict and Israel's war on Hamas, PM Modi has played the **role of a peacemaker.**
- **Shift in India's policy:** For decades, India's policy was to maintain distance from all countries. The situation has now changed. Today, India's policy is to maintain close ties with all countries and to connect with everyone.

LATERAL ENTRY CONTROVERSY

CONTEXT

The Union Public Service Commission's (UPSC) decision to seek "talented and motivated Indian nationals" for lateral recruitment to senior positions within the country's bureaucracy kicked up a major row. The move was criticised for not having any reservations for Scheduled Caste (SC), Scheduled Tribe (ST), and Other Backward Classes (OBC) candidates in the lateral entry into the bureaucracy.

What is Lateral Entry?

- Lateral entry allows the government to hire individuals from outside the usual recruitment processes directly into mid-level and senior positions.

- This is intended to bring in specialized skills and new perspectives to improve governance.

- Those hired through lateral entry are initially on three-year contracts, which can be extended up to five years.

Origins of the Scheme

- **1966**: The idea was discussed by the **First Administrative Reforms Commission (ARC)** under **Morarji Desai**. Although not specifically advocating for lateral entry, the commission emphasized the need for specialized skills in the bureaucracy.

- **2005**: The Second Administrative Reforms Commission (ARC) endorsed the concept as a way to improve expertise and bring fresh viewpoints.

- **2017**: The NITI Aayog recommended lateral entry in its Action Agenda to enhance the central government's capabilities.

Controversy Over Reservations

- Lateral entry positions are not covered by the reservation system (which includes quotas for Scheduled Castes (SC), Scheduled Tribes (ST), Other Backward Classes (OBC), and Economically Weaker Sections (EWS)).

- This is because these positions are considered **"Single Posts"** under the **"13-point roster" policy**, meaning the reservation quotas do not apply.

- As a result, lateral entry appointments can be made without adhering to reservation guidelines, leading to criticism for not including reserved categories.

LEGAL FRAMEWORK GOVERNING PORNOGRAPHY AND SEX TOYS IN INDIA

CONTEXT

In India, pornography and sex toys are regulated under a complex web of laws aimed at curbing obscenity and protecting public morals. While specific laws address the production and distribution of obscene material, sex toys fall into a legally ambiguous area, often regulated through broader obscenity and import restrictions. Judicial interventions have clarified some of these ambiguities, but challenges remain in balancing societal norms with legal regulations.

Regulation of Pornography

- **Bharatiya Nyaya Sanhita (BNS) 2023**: **Sections 294 and 295** deal with obscene publications and materials. Obscenity is defined as content that is lascivious or appeals to prurient interests, or has a corrupting influence. The sale, hire, distribution, or public exhibition of such materials is punishable by imprisonment and fines. Section 295 specifically criminalises selling obscene materials to children, aiming to protect minors.

- **Information Technology (IT) Act 2000**: **Sections 67, 67A, and 67B** of the Act regulate the transmission of obscene and sexually explicit content online.

  - **Section 67**: Prohibits the publication or transmission of lascivious material.

  - **Section 67A**: Criminalises the electronic dissemination of sexually explicit acts, with penalties including up to five years imprisonment and fines.

  - **Section 67B**: Targets child pornography, imposing severe penalties for offenses involving sexually explicit material featuring children.

- **Protection of Children from Sexual Offences (POCSO) Act 2012**: **Section 14** of the Act mandates strict punishment for anyone using children in pornographic material, with imprisonment ranging from five to seven years.

- **Indecent Representation of Women (Prohibition) Act 1986**: It criminalises indecent representation of women in media, including the production, publication, and distribution of obscene materials. This law aims to protect the dignity of women and prevent their objectification.

Legal Standing on Sex Toys

- There are no specific laws directly regulating sex toys, these objects are considered obscene objects and their sale, display, promotion, import or export can be restricted.

  - **Section 294 of the BNS**: It is used to restrict the sale, exhibition, advertising, and import of sex toys on grounds of obscenity.

  - **Customs Act**: The Act allows the government to prohibit the import of goods deemed obscene or against public morals, which can include sex toys.

  - **Patents Act 1970**: In 2018, the Indian patents office rejected an application for a "sexually stimulating vibrator," citing concerns about public order and morality.

  - **Online Sales and Marketing**: The rise of online shopping has made sex toys more accessible, but e-retailers must navigate complex advertising regulations and customs laws to avoid legal issues.

Judicial Interventions:

- **Calcutta High Court (2011)**: It overturned a customs decision to seize imported sex toys, arguing that they were intended for adult use and did not constitute obscenity.

- **Bombay High Court (March 2024)**: It reversed a customs decision to confiscate body massagers, ruling they were not sex toys.

THE CASE OF CASTE CENSUS

CONTEXT

The discussion surrounding the inclusion of caste enumeration in the upcoming Census has intensified recently. The Union government has yet to finalize its decision on conducting the next Census, but there is active discourse about expanding the data collection to include caste data beyond just Scheduled Castes (SCs) and Scheduled Tribes (STs).

What is the Census and Its Significance?

- The Census of India is a decadal process conducted by the **Ministry of Home Affairs** in collaboration with the **Ministry of Statistics and Programme Implementation**.
- It involves collecting, analyzing, and disseminating data on the country's population, covering demographic, economic, and social aspects.

The Census was last held in 2011. The National Population Register (NPR) is also to be updated simultaneously with the first phase of the Census.

- While Census is a **Union subject**, the **Collection of Statistics Act, 2008** empowers States and even local bodies to gather the necessary statistics.
  - So, individual States can always do Caste surveys like Karnataka (2015) and Bihar (2023) did.

- **Significance:**
  - **Policy Making**: It provides essential data for crafting policies and allocating resources effectively.
  - **Welfare Schemes**: It is crucial for identifying beneficiaries for various welfare programs, including the Public Distribution System (PDS), education, and health services. The following surveys/schemes need census data to determine their samples
    - Consumption survey
    - National Family Health Survey
    - PLFS
    - Household social consumption on education
    - National Food Security Act
    - National Social Assistance Programme
    - Delimitation of constituencies
  - **Delimitation**: It assists in the redrawing of electoral constituencies.
  - **Socio-Economic Planning**: It helps in planning and implementing socio-economic programs by providing a comprehensive overview of the population.

What is the Need for a Caste Census?

- **Social Necessity:** Caste remains a significant factor in social interactions, marriage, and political decisions in India. Only about 5% of Indian marriages were inter-caste as of 2011-12.
  - Bihar was one of the first States to conduct and publish a caste census report in 2023.

- **Legal Necessity**: Accurate caste data is crucial for implementing and monitoring reservation policies in education, employment, and political representation. Supreme Court rulings (**Indra Sawhney v. Union of India (1992), M. Nagaraj v. Union of India (2006), J.K. Industries Ltd. v. Union of India (2007), State of Uttar Pradesh v. Pradhan Sangh (2008), Vikram Dev Dutt v. Union of India (2022)**) have emphasized the need for detailed caste data to uphold and define backward class reservations.

- **Administrative Necessity:** It helps prevent wrongful inclusion or exclusion of castes in reservation categories. It is needed for creating sub-categories within reservations and for assessing the creamy layer.

- **Moral Necessity**: It addresses disparities and ensures that benefits and resources are distributed fairly, preventing the dominance of certain castes.

Arguments For Caste Census	Arguments Against Caste Census
Caste remains a significant social factor affecting various aspects of life.	The enumeration may exacerbate existing social divisions.
Necessary for implementing constitutional reservation policies effectively.	Managing enumeration of numerous state-specific castes can be complex
Helps in accurate allocation and avoids wrongful inclusions/exclusions in reservations.	May lead to increased and potentially arbitrary demands for reservations.
Addresses issues of equity and prevents disproportionate benefits to dominant castes	Caste was not enumerated post-Independence, and social changes may not necessitate its return.

⊘ FACT BOX

India's Caste System

- India's caste system is among the world's oldest forms of social stratification surviving to this day.
- There are four castes are the
  - *Brahmins* (priests, teachers)
  - *Kshatriyas* (rulers, warriors)
  - *Vaishyas* (landowners, merchants)
  - *Sudras* (servants)
- The 5th group is the group of the **untouchables, called Dalits.**
- India has 3,000 castes and 25,000 sub-castes, and each caste is associated with a specific occupation.

(Figure No. 1)
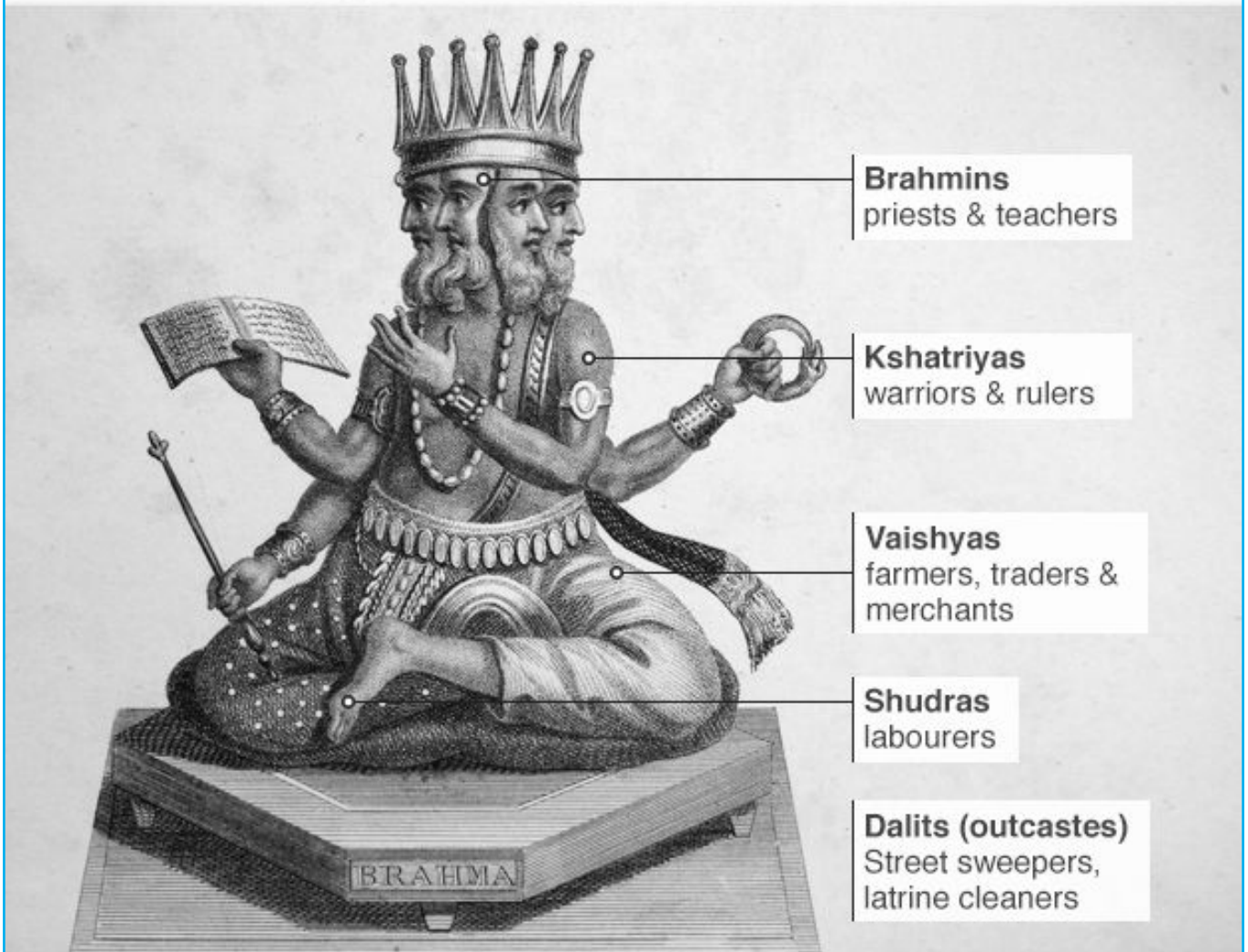
Brahma and the origins of caste

Brahmins priests & teachers

Kshatriyas warriors & rulers

Vaishyas farmers, traders & merchants

Shudras labourers

Dalits (outcastes) Street sweepers, latrine cleaners

BRAHMA

FIGURE: 01

E-COMMERCE, A DOUBLE-EDGED SWORD

CONTEXT

The digital age of online shopping (which has become the norm), has brought countless benefits for the consumers, it has also impacted traditional retailers and the broader economy. The functioning of the E-commerce sector is eating into the small retailers (12 million kirana stores) by giving heavy discounts on products (predatory pricing).

What is Predatory Pricing?

◉ Predatory pricing is a strategy where a company sets prices below cost to drive competitors out of the market.

◉ Once the competition is eliminated, the company can raise prices to recoup losses and achieve higher profits.

◉ This strategy poses challenges to small retailers and raises questions about market fairness and competition.

Impact on Small Retailers

◉ **Price Competition**: E-commerce platforms often offer deep discounts and promotions that small retailers cannot match due to limited resources and higher operating costs. This aggressive pricing strategy can force small retailers to lower their prices unsustainably or exit the market.

◉ **Customer Attrition**: Consumers attracted by lower prices on e-commerce sites may shift their spending away from local retailers, reducing their customer base and revenue.

◉ **Job Losses**: As small retailers struggle or close down, there can be significant job losses in local communities. Small retail businesses are often major employers, and their decline can impact employment rates.

◉ **Economic Drain**: Small retailers contribute to the local economy through taxes and local spending. Their closure can reduce local economic activity and tax revenue.

◉ **Community Erosion**: Small retail shops often play a crucial role in community life, providing personalized services and contributing to the local character of neighborhoods. Their decline can erode community cohesion and character.

The earning gap

- In India, there are about 12 million kirana stores, which generate over $800 billion in annual business, yet most of them do not have a digital footprint.

- These sellers continue to depend on orders received over call and Whatsapp for their home delivery business which constitutes over 10% of their business — that's an $80 billion plus kirana led home delivery business that already exists today, in spite of availability of quick commerce.

- Quick commerce at under $4 billion is a small fraction of the kirana home delivery business even today.

Required Measures

- **Antitrust and Competition Laws**: Many countries have antitrust and competition laws designed to prevent **monopolistic practices** and ensure a level playing field. Regulatory bodies may investigate and address cases of predatory pricing if it is deemed to harm competition and consumer welfare.

- **Subsidies and Grants**: Governments can provide financial support to small retailers through subsidies, grants, or low-interest loans to help them compete with e-commerce platforms.

- **Digital Transformation**: Encouraging small retailers to embrace digital technologies can help them compete more effectively with e-commerce platforms. Initiatives to enhance digital literacy and provide e-commerce training can be beneficial.

  ➤ There is need to help onboard kirana stores on the central government's **Open Network for Digital Commerce (ONDC) network**, helping them compete with e-commerce and quick service grocery retailers. ONDC is a freely accessible and inclusive platform that aims to democratise e-commerce.

🔍 FACT BOX

India's e-commerce landscape

- India's e-commerce landscape is poised for a monumental gain by 2030. A substantial surge to $325 billion by 2030 has been forecasted.

- Currently valued at $70 billion, India's online shopping makes up approximately 7 per cent of the country's total retail market.

- The quick commerce market (Zomato, Swiggy) within India's hyperlocal mobility sector is forecasted to experience exponential growth, reaching a market size of USD 5.5 billion by 2025.

- **Factors responsible for growth**: high internet penetration, low-cost internet services, and substantial increase in rural smartphone users.

  ➤ With a staggering 881 million users, India boasts the world's second-largest internet user base, positioning itself to emerge as the third-largest online retail market by 2030, driven by the rapid expansion of its digital economy.

- **Government schemes** such as **Jan Dhan Yojana, BharatNet Project,** and the implementation of **Goods & Service Tax (GST)** play instrumental roles in shaping India's digital economy

DEBATE ON EMPLOYMENT DATA IN INDIA

CONTEXT

Employment in India has been a contentious issue, with recent claims by Prime Minister Narendra Modi suggesting that the country created "eight crore new jobs" in the last few years. This claim is based on **data** from the **India-KLEMS database**, which shows a rise in the number of workers from **56.6 crore** in 2020-21 to **64.3** crore in 2023-24. This increase of 7.8 crore workers has sparked debate, especially given the stagnation or decline in employment-to-population ratios observed in other regions.

What is India-KLEMS?

- The India-KLEMS project, initiated in 2009 and now hosted by the **Reserve Bank of India (RBI),** measures industry-level **"total factor productivity" (TFP).**

- TFP gauges the efficiency of combining capital, labor, energy, materials, and services to produce output.

- **Employment Data:** Employment figures are used as inputs for TFP modeling but are not the primary focus of the database. These figures are sourced from official surveys, not directly collected by the RBI.

Data Sources:

  ➤ India-KLEMS uses the Worker Population Ratio (WPR) from the Periodic Labour Force Surveys (PLFS) and multiplies it by population projections. However, recent population figures are not officially available due to delays in the decadal Census.

  ➤ **Projection Methods:** For years up to 2019-20, India-KLEMS relied on population projections from the Economic Survey (ES) of 2021-22, which assumed constant growth rates from 2001-2011. For subsequent years, it used projections from the Ministry of Health & Family Welfare (MoHFW), which are based different demographic models.

Criticisms and Concerns

- **Methodological Issues:** The projections used by India-KLEMS do not account for recent declines in fertility rates or varying growth rates between rural and urban areas. This likely leads to overestimates of the rural population and, consequently, the number of workers. Using outdated or inaccurate population projections contributes to questionable employment figures.

Employment Structure and Quality:

  ➤ **Worker Population Ratio Trends:** PLFS data indicate that the WPR fell from 38.6% in 2011-12 to 34.7% in 2017-18 but rose to 41.1% in 2022-23, largely due to an increase in unpaid self-employment among rural women.

➤ **Unpaid Work:** The rise in rural female WPR is attributed to increased unpaid family labor in agriculture, rather than meaningful paid employment.

SBI Report and Comparison with ASUSE

◉ The State Bank of India (SBI) reported that the number of workers in the India-KLEMS database aligns with figures from **the NSSO's Annual Survey of Unincorporated Sector Enterprises (ASUSE) for 2022-23.**

◉ However, ASUSE only covers unincorporated non-agricultural establishments, excluding sectors like agriculture and government.

◉ The SBI report's total of 56.8 crore workers includes estimates from sectors not covered by ASUSE, leading to inflated numbers without solid methodological backing.

APCMNF PROGRAM

CONTEXT

The **Andhra Pradesh Community-Managed Natural Farming (APCMNF) program**, which promotes sustainable and chemical-free farming practices, has gained significant recognition and success. The program recently won the **2024 Gulbenkian Prize for Humanity**, highlighting its impact on agriculture and climate action.

What is Andhra Pradesh Community Managed Natural Farming (APCNF) programme?

◉ The APCNF programme aims to increase the **adoption of natural farming practices** among the state's farmers to help them **escape the debt cycle** caused by high input costs linked to conventional agricultural practices.

◉ Launched in 2016, it supports farmers to switch from **chemically intensive agriculture** to natural farming through practices such as:

➤ using **organic residues and minimising tillage** to improve soil health

➤ re-introducing indigenous seeds

➤ diversifying crops including trees

◉ **Implemented by**: Rythu Sadhikara Samstha (RySS), a not-for-profit body under the aegis of the **Department of Agriculture.**

◉ The APCMNF is aggressively promoting the **Pre-Monsoon Dry Sowing (PMDS) Model**, as it enables the farmer to take home three crops in a year, even in rainfed conditions in semi-arid areas.

➤ This is a paradigm shift since, in normal conditions, farmers in rainfed situations grow only one crop and leave the land fallow for the rest of the year. This mode of agriculture is based on scientific principles and comes into play in the non-farming season or whenever there is no crop cover on the land.

◉ **Coverage:** Currently, the APCNF is implementing natural farming in 4,116 gram panchayats and 7,746 village organisations through 2.31 lakh SHGs across 662 mandals of Andhra Pradesh. The government aims to reach out to all the 8 million farmer households in

Andhra Pradesh in the next 10 years and inspire the programme's replication in other States too.

➤ The model is already being incubated across 12 States in India. The programme receives funding from Central schemes like R**ashtriya Krishi Vikas Yojana, Paramparagat Krishi Vikas Yojana and Bharatiya Prakriti Krishi Padhati.** The recently announced **National Mission of Natural Farming** is also expected to provide funds from this year.

Success and Global Recognition

◉ **Impact and Scale**: The APCMNF has become the **world's largest agroecology program**, covering over 500,000 hectares and involving more than a million farmers. It has generated environmental benefits such as soil carbon sequestration and increased biodiversity.

◉ **Recognition and Awards**: The program received the **2024 Gulbenkian Prize for Humanity**, recognizing its contribution to climate action and sustainable agriculture. This award highlights the success of APCMNF in integrating scientific knowledge with traditional farming practices.

◉ **Future Plans and Expansion**: The APCMNF aims to expand its reach to all 8 million farmer households in Andhra Pradesh over the next decade. It also plans to replicate the model in other Indian states and internationally, with support from various donors and government schemes.

🔍 FACT BOX

About Natural and Organic Farming

◉ Natural farming and organic farming, both come under agroecological practices.

◉ In natural farming the focus is on the use of bio inputs prepared from farm and local ecosystems instead of purchasing those from outside.

◉ Organic farming is defined now more from a perspective of product certification.

◉ In both the method, there is **absence of application of chemical fertilisers or chemical pesticides during cultivation.**

◉ In India, Natural farming is promoted as **Bhartiya Prakritik Krishi Paddhati Programme (BPKP) under Paramparagat Krishi Vikas Yojana (PKVY).**

◧ Components of Natural Farming:

➤ **Beejamrit:** The process includes treatment of seed using cow dung, urine and lime based formulation.

➤ **Jivamrit:** The process enhances the fertility of soil using cow urine, dung, flour of pulses and jiggery concoction.

➤ **Whapasa:** The process involves activating earthworms in the soil in order to create water vapour condensation.

➤ **Mulching:** The process involves creating micro climate using different mulches with trees, crop biomass to conserve soil moisture.

➤ **Plant Protection:** The process involves spraying of biological concoctions which prevents pest, disease and weeds problems and protects the plant and improves their soil fertility.

Government initiatives to boost natural farming

➤ National Mission on Natural Farming (NMNF)

➤ Pradhan Mantri Krishi Sinchai Yojana

➤ Paramparagat Krishi Vikas Yojana (PKVY)

➤ Pradhan Mantri Krishi Sinchai Yojana (PMKSY)

➤ Rashtriya Krishi Vikas Yojana (RKVY)

➤ Bharatiya Prakriti Krishi Padhati (BPKP)

NASA'S STARLINER DELAY

CONTEXT

NASA's recent mission to test the **Boeing Starliner crew capsule** has hit unexpected snags, leading to a significant delay in the return of astronauts **Barry Wilmore and Sunita Williams** from the **International Space Station (ISS)**. Originally intended to be a straightforward eight-day mission, the test has now extended to an eight-month stay due to technical issues with the Starliner.

About the Mission

◎ **Initial Objective**: Barry Wilmore and Sunita Williams were launched to test-fly the **Boeing Starliner capsule**, including its manual controls, and to dock with the ISS. They were expected to return to Earth within a week of their arrival.

◎ **Current Situation**: The mission has been delayed due to problems with the **Starliner's helium leak** and **malfunctioning thrusters**. As a result, Wilmore and Williams may not return until 2025, significantly extending their stay.

◎ **Current ISS Crew**: As of now, nine astronauts are aboard the ISS, including Wilmore and Williams. The other members are Oleg Kononenko, Nikolai Chub, Tracy Caldwell-Dyson, Matthew Dominick, Michael Barratt, Jeanette Epps, and Alexander Grebenkin.

What Went Wrong?

◎ **Technical Issues**: The primary issue causing the delay is technical problems with the Starliner capsule. Specifically, the helium leak and malfunctioning thrusters have prevented the spacecraft from being used for the return journey.

◎ **Previous Delays**: There have been historical instances of astronauts staying longer than planned due to technical

or logistical issues, but the current delay is notable for its length and impact on the crew's schedule.

Backup Plan

➤ If the Starliner remains unfit for use, NASA has a backup plan involving the Crew 9 Dragon team. Scheduled for launch in September 2024, Crew 9 Dragon will potentially replace the current crew if necessary.

➤ If needed, NASA might ground two crews and send only a two-member team for the return mission, allowing Wilmore and Williams to remain with the new Expedition 72 crew.

FACT BOX

About Boeing Starliner

◉ Starliner is a spacecraft that transports astronauts in space, after being launched there by a rocket.

◉ It consists of a crew capsule and a service module.

➤ **Service Module**: Provides power and propulsion.

➤ **Crew Module**: Designed for astronauts. Includes a heat shield for protection during re-entry and a NASA docking system for connecting with space stations.

◉ The crew capsule houses the astronauts; like others of its kind, it will be able to survive re-entry and return to the ground.

◉ The service module consists of the equipment and systems the astronauts need to survive in space, including air and temperature control, water supply, sanitation, etc., plus the engines and fuel required to manoeuvre the spacecraft.

◉ The service module won't be reusable.

◉ Starliner is more than 4 m wide and can house up to seven astronauts. It can be fit atop an **Atlas V rocket**, operated by **United Launch Alliance**, a joint venture between Boeing and Lockheed Martin.

◉ In June 2024, an Atlas V rocket launched **Boeing's Starliner** on its **first crewed mission** to the **International Space Station (ISS).**

◉ Unlike SpaceX's Dragon and Russia's Soyuz, which land in the ocean, the Starliner is designed to land on solid ground. It uses parachutes and airbags to cushion the landing.

◉ During re-entry, the service module separates from the crew module. The Starliner then uses parachutes and airbags to land safely on solid ground.

◉ The Starliner is designed to be reusable for future missions, provided its systems remain intact after re-entry and landing.
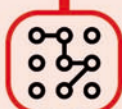
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SECTION -B

QUICK BYTES

MYSORE DASARA

CONTEXT

As a prelude to Mysuru Dasara, a 10-day festival observed on the tenth day in the Hindu calendar month Ashvina, 'Dasara Gajapayan' was held recently.

About Mysore Dasara

- **Mysore Dasara** is a grand 10-day festival celebrated in Mysuru, Karnataka, during Navratri, culminating on Vijayadashami.

- Known as the Royal Festival, it is a major cultural and religious event featuring vibrant processions, illuminated palaces, and numerous cultural activities. The festival draws thousands of visitors to experience the city's historical and cultural splendor.

- **Origins**: The Mysore Dasara festival began in 1610 with **Raja Wadiya the First**, marking the victory of **Goddess Chamundeshwari** over the demon **Mahishasura.** This mythological event symbolizes the triumph of good over evil. The festival incorporates the Navratri celebration of the nine forms of Goddess Shakti, culminating in Vijayadashami on the tenth day.

- The **Wadiyars of Mysore** have continued and enriched the festival's traditions over the centuries, introducing various cultural and artistic elements. The Mysore Palace, illuminated with over 100,000 bulbs, stands as a central attraction, showcasing the city's royal heritage and grandeur.

- **Dasara Gajapayan**: The **Dasara Gajapayan** is a traditional event held as a precursor to the Mysuru Dasara festival. It involves the ceremonial procession of 'kumki' elephants from the Nagarhole Tiger Reserve to Mysuru. These elephants are trained for the iconic Jamboo Savari procession, which is a central feature of the festival.

TEESTA V POWER STATION

CONTEXT

A massive landslide has severely damaged the **National Hydroelectric Power Corporation's (NHPC) Teesta Stage 5 dam** in Sikkim, India.

About the Project

- The Teesta V Power Station is one of 24 power stations owned and operated by the **National Hydroelectric Power Corporation (NHPC Ltd.).**

- It is located in the state of Sikkim, India, on the **Teesta River**, which originates from the **Cho Lamo glacier** above 7,068 metres and flows southward through steep slopes and extremely rugged terrain into the foothills of the Sikkim Himalaya and West Bengal

- The project was under restoration following the glacial outburst in October last year, which had caused significant damage.

FACT BOX

About the Teesta River

- Teesta River rises from the **Cho Lamo glacier** in the Himalayas at an elevation of approximately 7,068 meters.

- It is a tributary of the Brahmaputra, flowing through India and Bangladesh.

- **Course:** It flows southward through steep and rugged terrain, eventually turning southeast. It cuts through the **Siwalik Hills** and the **Sivok Khola pass** before entering the plains of West Bengal.

- Originally, the Teesta River emptied directly into the upper Padma River (Ganges). However, around 1787, it shifted its course to flow eastward and join the Jamuna River in Bangladesh.

Major Tributaries:

- **Left-bank Tributaries:** Lachung Chhu, Chakung Chhu, Dik Chhu, Rani Khola, Rangpo Chhu.

- **Right-bank Tributaries** - Zemu Chhu, Rangyong Chhu, Rangit River

UPSC PYQ

Q: With reference to river Teesta, consider the following statements: (2017)

1: The source of river Teesta is the same as that of Brahamputra but it flows through Sikkim

2: River Rangeet originates in Sikkim and it is a tributary of river Teesta.

3: River Teesta flows into Bay of Bengal on the border of India and Bangladesh.

Which of the statements given above is/are correct?

(a) 1 and 3 only

(b) 2 only

(c) 1 and 3 only

(d) 1, 2 and 3

Solution: (b)

CENTRE LAUNCHES 'JAN POSHAN KENDRAS'

CONTEXT

The Centre has recently launched a pilot project to transform a select number of ration shops into 'Jan Poshan Kendras' or public nutrition centers. This initiative is part of a broader effort to modernize and enhance the effectiveness of the public distribution system (PDS) in India. The goal is to improve the nutritional value and income potential of these shops, addressing both the needs of consumers for better food options and the financial concerns of ration dealers.

About the Project

- The project aims to revamp 60 fair price shops (FPS) in Gujarat, Rajasthan, Telangana, and Uttar Pradesh into **Jan Poshan Kendras**.

- These centers are intended to improve the viability of FPSs by offering a wider range of nutrition-rich food items and increasing the income of ration dealers.

Features:

- **Product Range**: The Jan Poshan Kendras will stock 50% of their products with nutrition-rich food items, while the remaining 50% will include other household essentials.

- **Additional Measures**: The project includes several new tools and systems:

  - **FPS Sahay Application**: Provides paperless, collateral-free financing for ration dealers.

  - **Mera Ration App 2.0**: Offers consumers updated information on the public distribution system.

  - **Quality Management Systems**: Includes new quality control measures and manuals.

  - **Accreditation**: NABL accreditation for three laboratories to ensure quality testing.

Expected Outcomes:

- **Enhanced Food Security**: By offering better quality nutrition, the initiative aims to improve public health and reduce malnutrition.

- **Increased Transparency and Efficiency**: New digital tools are expected to streamline operations and reduce corruption and inefficiencies.

- **Improved Dealer Income**: By diversifying product offerings, FPS dealers can increase their earnings.

About Ration Shops

- Ration shops, or fair price shops (FPS), are part of India's public distribution system. They provide subsidized food grains and other essential items to low-income families.

- There are approximately 5.38 lakh (538,000) FPSs across India.

- The successful implementation of the Jan Poshan Kendras pilot could lead to a nationwide transformation, improving the public distribution system's reach and effectiveness.

JAMMU & KASHMIR'S FIRST ASSEMBLY ELECTIONS

CONTEXT

Jammu and Kashmir is set to have its first assembly elections in six years as the Election Commission announced the dates for the newly formed union territory.

Impact of Delimitation

- From state to union territory, Jammu and Kashmir has undergone several changes that could impact the assembly polls - namely delimitation.

- To put it simply, delimitation is a process of redrawing the boundaries of electoral constituencies. After the abrogation of Section 370, the splitting of the erstwhile

state of Jammu and Kashmir into two separate union territories, required a delimitation process to be carried out.

◉ In order to reorganise the state into a union territory of Jammu and Kashmir, the boundaries of constituencies would change.

Delimitation Process in Jammu and Kashmir

➤ **Legal Framework**: The delimitation process in Jammu and Kashmir was conducted under the Delimitation Act, 2002, and the Jammu and Kashmir Reorganization Act, 2019.

➤ **Delimitation Commission**: Formed in March 2020, the commission was led by retired Justice Ranjana Prakash Desai, with Sushil Chandra (former Chief Election Commissioner) and K.K. Sharma (State Election Commissioner of Jammu and Kashmir) as members.

➤ **Final Report**: The commission's final report was presented on May 5, 2022. It proposed increasing the number of assembly constituencies from 87 to 90, with 47 constituencies in Kashmir and 43 in Jammu. It also added one seat in Kashmir and six more in Jammu.

➤ Considerations: The commission took into account the region's cultural and geographical diversity while reorganizing constituencies. The final order was implemented on May 20, 2022.

◉ **Constituency Changes**: The reorganization has led to renaming several constituencies and shifting tehsils to new assembly constituencies. For example, Tangmarg was renamed Gulmarg, and Zoonimar was renamed Zaidibal.

◉ **Reservation of Seats**: There are 18 assembly constituencies within each parliamentary constituency, with nine reserved for Scheduled Tribes and seven for Scheduled Castes.

RBI'S INFLATION TARGETING

CONTEXT

The **Reserve Bank of India's (RBI) inflation-targeting regime** is currently a hot topic due to ongoing debates about its effectiveness and potential need for adjustments. A recent research paper titled '**Inflation Targeting In India: A Further Assessment**' highlights that while the regime has largely succeeded, some refinements could enhance its effectiveness.

What is RBI's inflation targeting?

◉ The Reserve Bank of India (RBI) adopted a **Flexible Inflation Targeting (FIT) framework** in 2015.

◉ RBI's inflation-targeting regime was implemented in February 2015 and it got formalised in May 2016.

◉ Accordingly, the government announced, via the Official Gazette, 4% Consumer Price Index (CPI) inflation as the target from August 5, 2016, with an upper tolerance limit of 6% and a lower limit of 2%.

◉ This was a watershed reform as until then monetary policy in India was not governed by a clear, well-defined objective.

◉ FIT gave the RBI the legal mandate of achieving price stability, while keeping an eye on growth.

Key Takeaways

◉ **Effectiveness of Inflation Targeting**: RBI's inflation-targeting regime has helped lower and stabilize inflation, making it less volatile and improving monetary policy transmission.

◉ **Recommendation on Food Price Inflation**: The paper suggests reducing the weight of food price inflation in the Consumer Price Index (CPI) basket. This is based on the idea that food prices are heavily influenced by supply-side factors, which monetary policy cannot directly address. Adjusting this weight could make the inflation measure more reflective of typical household experiences.

◉ **Current Regime Adequacy**: The current inflation target of 4%, with a +/-2 percentage point tolerance band (2%-6%), is deemed broadly appropriate. The paper argues against abandoning or significantly altering this framework in favor of a more discretionary approach, which could introduce risks and inefficiencies.

Important Key Concepts

◉ **Inflation Targeting**: This is a monetary policy strategy where a central bank sets a specific inflation rate as its goal. The RBI's inflation-targeting regime was formalized with a target of 4% CPI inflation, aiming to keep it within a range of 2% to 6%. The focus is on achieving price stability, which is crucial for economic planning and growth.

◉ **Consumer Price Index (CPI)**: The CPI measures the average change in prices paid by consumers for goods and services over time. It is a common indicator of inflation and helps central banks gauge the effectiveness of their monetary policies.

◉ **Tolerance Band**: This is the range within which the actual inflation rate is allowed to fluctuate around the target rate. For the RBI, this is 2% to 6% around the 4% target. If inflation moves outside this range for a prolonged period, it triggers a review and response from the central bank.

◉ **Monetary Policy Transmission**: This refers to the process through which changes in the central bank's policy rate affect economic activity, such as consumption, investment, and inflation. Effective transmission is crucial for monetary policy to achieve its targets.

◉ **Supply-Side Inflation**: This type of inflation is caused by disruptions in the supply of goods and services, leading to higher prices. Food prices are often affected by supply-side factors such as weather conditions and agricultural output, which are not directly influenced by monetary policy.

HANDLOOM SECTOR

CONTEXT

The **Union Textile Ministry** recently mentioned that it has undertaken various measures for promoting the **handloom sector.**

Major Schemes

- **National Handloom Development Programme**: Under the Programme, financial assistance is provided to eligible handloom organisations/workers for upgraded looms and accessories, solar lighting units, construction of worksheds, product and design development, technical and common infrastructure, marketing of handloom products in domestic/overseas markets, etc.

- **Weavers' MUDRA Loan/Concessional Credit Scheme**: Under the scheme, margin money assistance for individual weaver and Handloom Organizations; interest subvention and credit guarantee fees on loans for a period of three years are provided.

- **Raw Material Supply Scheme**: The Ministry provides transport subsidy, for transportation of yarn to the doorstep of the beneficiary, and 15 per cent price subsidy on Cotton Hank Yarn, Domestic Silk, Woollen and Linen yarn and blended yarn of natural fibres.

- **Handloom Export Promotion Council:** For export promotion of handloom products, Handloom Export Promotion Council has been participating/organizing international marketing fairs/events for providing prominence to Indian handloom products globally.

- **The 'India Handloom' Brand** was launched on August 7, 2015, on the occasion of the National Handloom Day, to brand high-quality handloom products with zero defects. Since the launch of the "India Handloom" Brand, 1,998 registrations have been issued under 184 product categories.

- **GeM Onboarding:** Allows weavers to sell directly to government departments via the Government e-Marketplace (GeM).

- **Handloom Producer Companies**: 124 companies formed across states, with UNDP aiding in the capacity building of 100 of these companies.

- **Engagement with E-commerce Entities**: Collaboration with 23 e-commerce platforms to expand market **access for handloom products.**

- **Design Resource Centers (DRCs):** Established in major cities to enhance design excellence in handlooms.

- **Weavers' Welfare Scheme**: Includes National Handloom Development Programme (NHDP), Comprehensive Handloom Cluster Development Scheme (CHCDS), Handloom Weavers' Comprehensive Welfare Scheme (HWCWS), Yarn Supply Scheme (YSS), and Hathkargha Samvardhan Sahayata.

- **Handloom Export Scheme**: Supports the export of handloom products and participation in international fairs.

- **GI Tags:** From April 2023 to March 2024, the government awarded GI tags to several handloom products, enhancing their recognition and economic value. These products include:

- **Barabanki** Handloom Products from Uttar Pradesh
- **Chedibutta Saree** from Tamil Nadu
- **Jodhpur Bandhej Craft** from Rajasthan
- **Basohli Pashmina Woolen Products** from Jammu & Kashmir
- **Rangwali Pichhoda of Kumaon** from Uttarakhand
- **Tangail Saree** from West Bengal
- **Garad Saree** from West Bengal
- **Korial saree** from West Bengal

🔍 FACT BOX

India's Handloom Sector

- The handloom sector employs over **35 lakh individuals**, including **25 lakh female weavers** and allied workers, making a substantial contribution to the economy.

- According to the **Fourth All India Handloom Census 2019-20**, India has 35,22,512 handloom workers, with more than 70% being women. Out of the 31.45 lakh households involved in handloom activities, 88.7% are located in rural areas.

- **National Handloom Day** is observed on **August 7.** It marks the anniversary of the **Swadeshi Movement** of 1905 and was first celebrated in 2015.

  - The **Swadeshi Movement**, now known as **'Make in India' campaign** was officially proclaimed on August 7, 1905 in Bengal.
  - **Boycott movement** was also launched along with the Swadeshi movement.
  - The movements included using goods produced in India and burning British-made goods.
  - **Bal GandadharTilak** encouraged Swadeshi and Boycott movement after the British government decided the partition of Bengal.

KRISHI-DECISION SUPPORT SYSTEM (DSS)

CONTEXT

The Government has launched a digital geo-spatial platform, Krishi-Decision Support System (DSS), which will share real-time data-driven insights on weather patterns, soil conditions, crop health, crop acreage and advisories with all stakeholders — such as farmers, experts and policymakers.

What is Krishi-Decision Support System (DSS)?

- Krishi-DSS was a **first-of-its-kind geospatial platform** specifically designed for Indian agriculture.

◉ The platform provides seamless access to comprehensive data, including satellite images, weather information, reservoir storage, groundwater levels and soil health information, which can be easily accessed from anywhere at any time.

◉ **Application:** Krishi-DSS includes several advanced modules designed to support comprehensive agricultural management.

➤ **Crop Management:** With **crop mapping and monitoring**, cropping patterns will be understood by analysing parcel-level crop maps over the different years. This information helps in understanding crop rotation practices and promotes sustainable agriculture by encouraging the cultivation of diverse crops.

➤ **Drought and Flood Monitoring:** It provides near real-time information on soil moisture, water storage, and other critical indicators.

➤ **Policy Support**: It helps inform agricultural policies and disaster response strategies.

CHINA'S EXPORT CONTROLS ON ANTIMONY

CONTEXT

China will impose export controls on some antimony products (including ore, ingots and oxide), citing national security, adding to measures imposed by Beijing since last year to curb shipments of strategic minerals.

What is Antimony?

◉ Antimony is a shiny grey metalloid with a variety of industrial uses. It has been known since ancient times and was historically used in medicine and cosmetics.

Applications:

➤ **Flame Retardants:** Antimony is predominantly used in flame retardants, accounting for around half of its global usage in 2023. These retardants are crucial in preventing or slowing the spread of fire in materials such as textiles and plastics.

➤ **Photovoltaic Glass:** About 20% of antimony is used to make photovoltaic glass, which enhances the efficiency of solar cells.

➤ **Lead-Acid Batteries:** Antimony is used in the manufacturing of lead-acid batteries, contributing to their performance and longevity.

➤ **Military Equipment:** Antimony is used in various military applications, including infrared missiles, nuclear weapons, night vision goggles, and as a hardening agent for bullets and tanks.

Global Production:

➤ **China:** Dominates the production of antimony, accounting for 48% of global mine production in 2023 and is the largest producer of processed antimony products, including antimony trioxide (ATO).

➤ **Tajikistan:** The second-largest producer, contributing 25% to global production.

◉ **National Security:** Antimony's use in military equipment and its role as a critical material in various advanced technologies have made it increasingly strategic.

NICOBAR SWAP: ARAVALIS (HARYANA) MARKED AS PROTECTED FORESTS

CONTEXT

Haryana has tagged 24,353 hectares of Aravali land in five of its districts - Gurgaon, Nuh, Rewari, Mahendergarh and Charkhi Dadri - as protected forest, under the compensatory afforestation swap meant to make up for the destruction of tropical rainforests in Great Nicobar.

About Aravali Ranges

◉ The Aravali Ranges are a major mountain range in western India, stretching across the states of Rajasthan, Haryana (southwestern parts), and Gujarat.

◉ **Length:** Approximately 800 km (500 miles) in length.

◉ The Aravalis are one of the oldest mountain ranges in India, formed around 2.5 billion years ago.

◉ **Type:** They are primarily composed of ancient metamorphic rocks including granite, gneiss, and quartzite.

◉ **Key Peaks:** Guru Shikhar is the highest peak in the range, located in the Sirohi district of Rajasthan, with an elevation of 1,722 meters (5,650 feet).

◉ Haryana is home to around 1 lakh hectares of the Aravalis. Of this, 45,000 hectares of the hills are notified under Punjab Land Preservation Act (PLPA) and the Aravali Plantation, giving them legal cover from non-forest activities.

➤ The remaining 55,000 hectares were never recorded or notified as forests.

About Great Nicobar Project

◉ It is a ₹72,000 crore plan called 'Holistic Development of Great Nicobar Island at Andaman and Nicobar Islands'.

◉ It includes the construction of an international transshipment terminal, an international airport, a power plant, and a township.

◉ **The island of Great Nicobar** is the southernmost tip of India and a part of the Andaman and Nicobar archipelago that comprises 600-odd islands.

➤ It is hilly and covered with lush rainforests that are sustained by around 3,500 mm of annual rainfall.

➤ The rainforests and beaches host numerous endangered and endemic species including the giant leatherback turtle, the Nicobar megapode, the Great Nicobar crake, the Nicobar crab-eating macaque, and the Nicobar tree shrew.

➤ It has an area of 910 sq km with mangroves and Pandan forests along its coast.

Protected Forests

◉ A protected forest is a forest that is legally protected by a government for conservation.

◉ **Objective:** to protect the environment and promote sustainable development by conserving the forest's natural resources, including plants and wildlife.

◉ Protected forests can be introduced through legislation, such as the **Indian Forest Act of 1927**.

ISRO LAUNCHED SMALL SATELLITE LAUNCH VEHICLE-D3 (SSLV-D3)

CONTEXT

Indian Space Research Organisation recently achieved a significant milestone with the successful launch of its third and final developmental flight, the **Small Satellite Launch Vehicle-D3 (SSLV-D3).** The mission involved deploying the **Earth Observation Satellite (EOS-08) and the SR-O DEMOSAT satellites** into their designated orbits.

About SSLV-D3-EOS-08 mission

◉ The objectives of the **SSLV-D3-EOS-08 mission** include designing and developing a **microsatellite** and creating payload instruments compatible with the microsatellite bus

◉ Built on the **Microsat/IMS-1 bus,** EOS-08 carries three payloads

➤ **Electro Optical Infrared Payload (EOIR):** Captures images in the Mid-Wave Infrared (MIR) and Long-Wave Infrared (LWIR) bands. Applications include satellite-based surveillance, disaster monitoring, environmental monitoring, and industrial disaster management.

➤ **Global Navigation Satellite System-Reflectometry Payload (GNSS-R):** Demonstrates GNSS-R-based remote sensing for ocean surface wind analysis, soil moisture assessment, cryosphere studies, flood detection, and inland waterbody detection.

➤ **SiC UV Dosimeter:** Monitors UV irradiance and serves as a high-dose alarm sensor for gamma radiation, relevant to the Gaganyaan Mission.

FACT BOX

About EOS-08 satellite

◉ The EOS-08 satellite is designed for **Earth observation**.

◉ It carries advanced technology for various tasks such as **disaster monitoring, environmental observation, and surveillance.**

◉ It includes multiple payloads that can capture images in infrared, monitor UV radiation, and measure soil moisture and ocean winds.

About Small Satellite Launch Vehicle (SSLV) rocket

◉ The SSLV is a versatile and cost-effective rocket designed to launch small satellites (weighing between 10 and 500 kg) into space.

◉ It's built to be flexible, allowing for quick launches with minimal infrastructure, and can carry multiple satellites at once.

DOS & DDOS ATTACKS

CONTEXT:

Recently, Elon Musk hosted a live audio interview with former US President and Republican Presidential candidate Donald Trump on the social media platform X. The event faced a 40-minute delay and technical issues, which Musk attributed to a **"massive DDoS attack"** on the platform.

About DoS and DDoS Attacks:

◉ **Denial-of-Service (DoS) Attack:** A DoS attack targets a website or online service to make it unavailable by overwhelming it with excessive requests or data. It floods the target server with a high volume of traffic, which can slow down or halt its functionality, making it inaccessible to legitimate users.

◉ **Distributed Denial-of-Service (DDoS) Attack:** A DDoS attack involves multiple systems working together to launch a coordinated attack on a single target. It utilizes a network of compromised computers (botnets) to generate traffic or requests from multiple sources, complicating the process of identifying and stopping the attack.

Types of Attacks:

➤ **Smurf Attack:** Involves sending ICMP packets with a spoofed IP address, causing the target system to flood itself with responses.

➤ **SYN Flood**: Exploits the TCP handshake process by sending incomplete connection requests, overloading the server with half-open connections.

Signs and Mitigation:

➤ **Signs:** Slowed internet speeds, difficulty accessing services, and overall system unresponsiveness.

➤ **Mitigation:** Firewalls, intrusion detection systems, and network monitoring tools can help identify and mitigate DoS/DDoS attacks by filtering malicious traffic and ensuring the availability of online services.

PAKISTAN REPORTS FIRST CASE OF DEADLY MPOX VIRUS

CONTEXT

Pakistan has confirmed at least one case of the mpox virus, a day after Sweden confirmed an infection with a more easily spread and deadlier variant linked to a recent outbreak in Africa.

WHO declares an International Emergency

- The World Health Organisation (WHO) declared the recent outbreak of MPox, a public health emergency of international concern.

  ➤ This move follows the identification of a **new strain of the virus** and recent confirmations of an infection in Sweden, which is linked to the growing outbreak in Africa. The majority of the affected individuals are children.

  ➤ This is the second alert. In 2022, a different form of the mpox virus – **clade IIb** – spread globally, largely through sexual contact among men who have sex with men.

- **Symptoms**: Mpox, caused by the monkeypox virus, presents symptoms that include a painful rash, enlarged lymph nodes, and fever, headache, muscle aches, swollen lymph nodes and can result in severe illness for some patients. In rare cases, the infection can be deadly.

- **Contagious Period:** The affected individuals can spread the virus from the onset of symptoms until the rash has fully healed and new skin has formed.

- **Duration of Mpox Symptoms**: Symptoms typically start within 21 days of exposure to the virus.

- **Incubation Period** ranges from 3 to 17 days. During this period, individuals may feel fine and show no symptoms.

- **Transmission:**

  ➤ Direct skin-to-skin contact

  ➤ Contact with saliva or upper respiratory secretions (snot, mucus)

  ➤ Bodily fluids or lesions around the genitals

  ➤ Prolonged face-to-face interactions (talking or breathing)

  ➤ Contact with contaminated objects, fabrics, and surfaces

  ➤ Pregnant women can pass the virus to the fetus during pregnancy or to newborns during and after birth

- **Vaccination:** Smallpox vaccines can protect due to the relatedness of Mpox and smallpox viruses (both are orthopoxviruses).

About Public Health Emergency of International Concern (PHEIC)

- A PHEIC is a **formal designation**, giving a **special status for an emergency** caused by an **infectious disease outbreak** from the **World Health Organization (WHO),** tied to international law through the **International Health Regulations (IHR).**

- A PHEIC is the **strongest global alert** the WHO can formally make.

- When it is declared, countries have a legal duty to respond quickly, whereas with a pandemic there is no infrastructure around the decision-making process, agreed criteria, or agreement of what countries need to do in response.

- The PHEIC declaration can accelerate research, funding and international public health measures and cooperation to contain a disease.

- It triggers emergency responses in countries worldwide under the legally binding **International Health Regulations.**

RARE CASE OF VACCINE-DERIVED POLIO IN MEGHALAYA

CONTEXT

A case of vaccine-derived polio **(VDPV)** has been confirmed in a two-year-old child from West Garo district, Meghalaya. Although polio was declared eradicated in India in 2011, the emergence of **vaccine-derived polio** in an **immuno-deficient child (iVDPV)** has raised concerns about the continued use of the **oral polio vaccine (OPV).**

What is Vaccine-Derived Polio?

- Poliomyelitis, or polio, is a highly infectious viral disease that can lead to paralysis and even death.

- It is caused by the poliovirus, which exists in three types: wild poliovirus type 1 (WPV1), type 2 (WPV2), and type 3 (WPV3).

- India's success in eradicating WPV1 and WPV3 is notable, but the presence of **vaccine-derived poliovirus (VDPV)** indicates ongoing risks.

- VDPV arises from the **oral polio vaccine (OPV),** which contains a **weakened form of the poliovirus**.

- While OPV has been crucial in reducing global polio cases, it carries a rare risk of causing **vaccine-associated paralytic poliomyelitis (VAPP)** in approximately 1 in 2.7 million doses.

- In **immuno-deficient individuals**, the weakened virus can persist and mutate into a form that may cause polio, known as **iVDPV.**

  ➤ The recent case in Meghalaya is classified as iVDPV, a form of polio that occurs in individuals with primary immunodeficiency (PID), who cannot effectively clear the virus from their systems.

OPV vs IPV:

- **Oral Polio Vaccine (OPV)**: Administered orally, OPV induces immune responses in both the blood and the intestines. This dual immunity helps prevent the virus from spreading in communities with high vaccination coverage. However, in areas with low vaccination rates, the vaccine-derived virus can continue to circulate, mutate, and potentially cause polio.

- **Inactivated Polio Vaccine (IPV)**: IPV, given via injection, contains inactivated poliovirus that cannot replicate. It generates a strong immune response in the blood, preventing paralysis. However, it is less effective at inducing immunity in the intestines, meaning individuals can still carry and potentially transmit the wild poliovirus.

  - The switch to IPV, which has been introduced in India since 2017, aims to mitigate the risks associated with OPV. IPV's inability to cause VAPP or iVDPV makes it a safer alternative, though it may require higher coverage to achieve similar community immunity.

FACT BOX

About Poliomyelitis (Polio)

- Poliomyelitis, commonly called polio, is a highly infectious disease caused by the poliomyelitis virus.
- It largely affects children under 5 years of age.
- There are three wild-types of poliovirus that cause the disease:
  - Wild Poliovirus 1 (WP1)
  - Wild Poliovirus 2 (WP2)
  - Wild Poliovirus 3 (WP3)
- Of the 3 strains, WP 2 was eradicated in 1999 and WP 3 was eradicated in 2020. As at 2022, endemic wild poliovirus type 1 remains in two countries: Pakistan and Afghanistan.
- Vaccination is the best way to prevent polio. There's no cure for polio.

Key government initiatives for polio eradication in India:

- Pulse Polio Immunization Campaigns
- Universal Immunization Program (UIP)
- Inactivated Polio Vaccine (IPV) Introduction
- Acute Flaccid Paralysis (AFP) Surveillance
- Environmental Surveillance
- Health Education and Community Engagement
- Global Polio Eradication Initiative (GPEI) Participation
- National Policy on Polio Eradication
- Legislative Support for Vaccination
- Response to Vaccine-Derived Poliovirus (VDPV)

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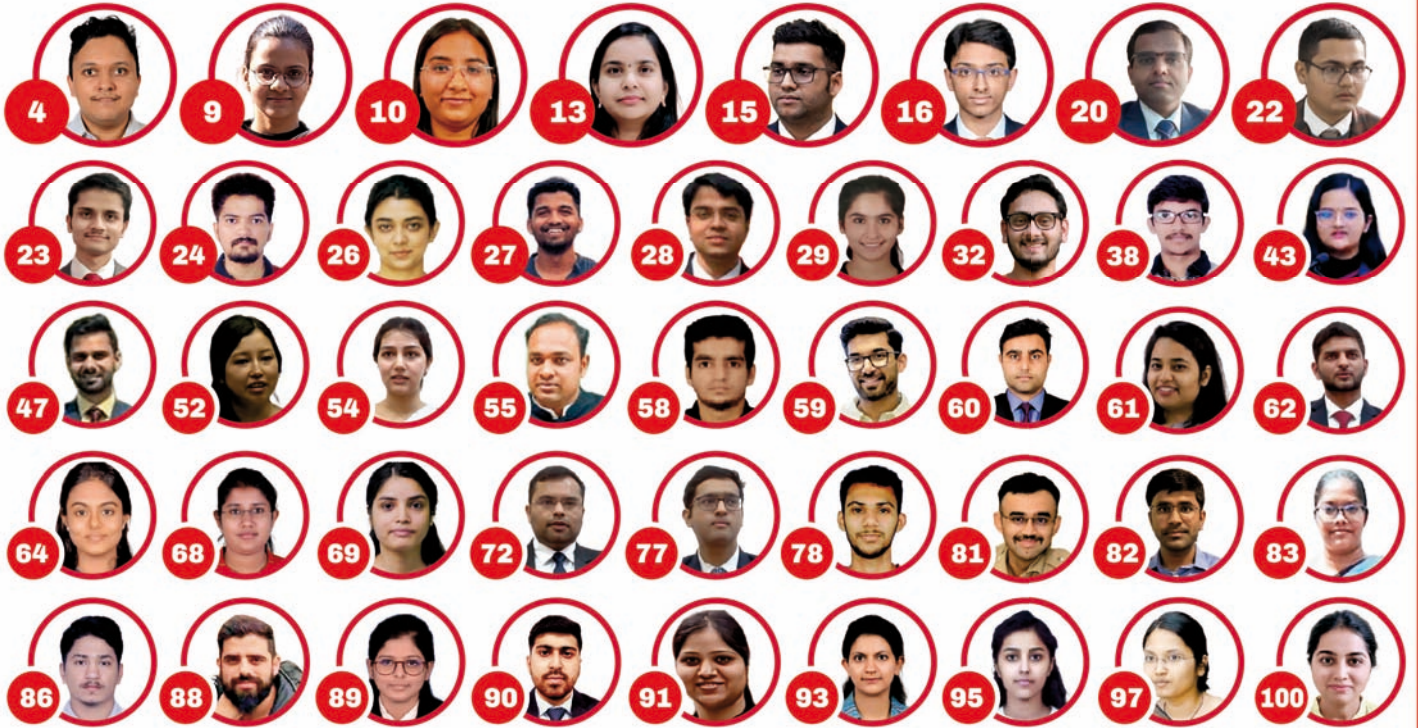
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