

DAILY CURRENT AFFAIRS (DCA)

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USE OF TOOLS BY ANCIENT ANCESTORS

Context

- As per a study in Nature, ancient ancestors were using **bone tools at least 1.5 million years ago**, roughly **a million years earlier than was previously thought**.

About

- The earliest known **stone tools are even older**, dating to **3.3 million years ago**.
 - These dates are based on **prehistoric tools that have survived into the present**.
 - The earliest evidence for the use of wood** dates back to only 700,000 years ago.
- British palaeoanthropologist Kenneth Oakley** identified **tool-use and toolmaking** as uniquely human traits in the late 1940s.
 - It suggested that tool technology was a uniquely human trait.
- Experts today suggest** that **ape-like ancestors might have been using sticks and stones** in their daily lives millions of years prior to what the oldest tools can be dated to.
 - This means that tool technology predates the emergence genus Homo, and it is not a **uniquely human trait**.

Timeline of Study of Tool Making

- Charles Darwin (1871):** Noted that chimpanzees used tools, such as cracking nuts with stones.
- Jane Goodall (1960s):** Expanded on Darwin's work by observing chimps using tools like sticks to fish for termites and leaves to drink water.
 - Despite Goodall's findings, **scientists for decades continued to hold an anthropocentric view of tool technology**.
- Tool use and toolmaking:** Initially believed to be uniquely human, chimps and other primates also use and modify tools.
- Recent Research:**
 - Chimps have been observed making rudimentary wooden spears.
 - Capuchin monkeys unintentionally produce stone flakes resembling those made by early human ancestors.

Stone Age

- It is a prehistoric period marked by the use of stone tools, divided into three major periods: **Paleolithic, Mesolithic, and Neolithic**.

- Paleolithic Age:** Also known as the Old Stone Age.
 - Began around 2.6 million years ago and lasted until around 10,000 BCE.
 - Humans were hunter-gatherers, using stone tools for hunting, butchering, and food processing.
- Mesolithic Age:** Occurred between 10,000 BCE and 5,000 BCE (varies by region).
 - Characterized by specialized tools, environmental adaptations, and the early domestication of plants and animals.
- Neolithic Age:** Began around 12,000 years ago and ended between 4500 BCE and 2000 BCE.
 - Marked by the adoption of agriculture, animal domestication, and settled communities.
 - Led to the development of pottery, weaving, and complex social structures.
 - Agriculture revolutionized human societies and led to the rise of civilizations.

Source: IE

THE RISE OF QUICK COMMERCE IN INDIA

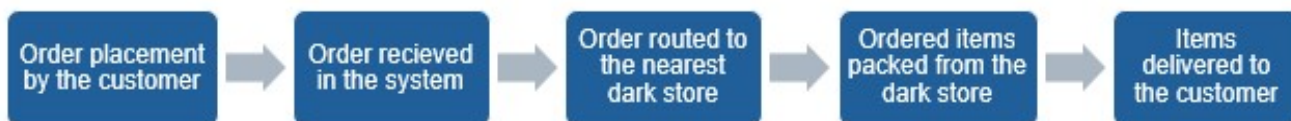
Context

- Quick commerce, altering India's retail and last-mile delivery landscape, stands out as a prominent trend in the country's e-commerce sector.

What is Quick Commerce?

- Quick commerce, **a subclass of e-commerce**, refers to the rapid delivery of goods, primarily groceries and essential items, within a very short time frame, typically in **10 to 20 minutes**.
- This model relies on **hyperlocal fulfillment centers, dark stores, and robust supply chain management** to ensure fast and efficient delivery.
- The Indian quick commerce market is presently valued at **\$3.34 billion** and is expected to reach **\$9.95 billion by 2029**.
 - The industry grew **76% YoY in FY 2024**.

Process flow of instant delivery platforms



Growth drivers of quick commerce market

- **Changing Consumer Behavior:** Urban consumers prefer instant gratification and convenience, making quick commerce an attractive option.
- **Internet Penetration:** The widespread use of mobile applications and digital payment systems has accelerated Q-commerce adoption.
- **Technological Advancements:** AI-driven inventory management, data analytics, and last-mile delivery optimization have made quick commerce viable.
- **Affordable Workforce:** Availability of low-cost manpower enhances efficiency.

Benefits of Quick Commerce

- **Urban Convenience:** Quick commerce delivers essentials like groceries, medicines, and personal care products within 10-30 minutes.
- **Employment Growth:** Expands the gig economy, projected to reach 23.5 million workers by 2029-30.
- **Tech & Innovation:** AI-powered demand forecasting, route optimization, and micro-warehousing models. Companies like Zepto use machine learning to manage inventory efficiently.
- **Tier-2 & Tier-3 Expansion:** 60% of e-commerce growth is from smaller cities.
- **Emergency Support:** Quick commerce helps in emergency situations, providing fast access to medicines, baby products, and essential goods. For example: recently launched Ambulance by Blinkit.

Favourable Government Initiatives

- **Digital India** has transformed India's digital infrastructure, increased digital literacy, and promoted e-services.
- **Start-up India** has created a favourable environment to encourage innovation from new-age start-ups.
- **UPI and RuPay** have simplified digital payments, offering seamless banking access.
 - ♦ **BharatNet** has expanded broadband connectivity, boosting quick commerce and e-commerce in underserved areas.

- **Open Network for Digital Commerce (ONDC)** has increased the reach of India's quick commerce and e-commerce ecosystem by onboarding smaller vendors onto digital platforms.
- **100% FDI** is permitted through the automatic route in entities engaging in B2B models to encourage the participation of foreign players.

Concerns associated with quick commerce

- **Gig Economy Issues:** Delivery executives face job insecurity, long working hours, and lack of social security benefits.
- **Anti-Competitive Practices:** Predatory pricing and deep discounting to eliminate competitors.
 - ♦ These platforms have **deep pockets** because of the inflow from venture capitalists and/or foreign direct investment.
- **Data Exploitation:** Differential pricing based on user data, location, and purchasing behavior.
- **Impact on Traditional Retailers:** Small retailers struggle to compete, leading to business closures and financial losses.
- **Quality Assurance:** The rush to deliver products quickly compromises product quality, packaging, and safety standards.

Way Forward

- **Fair Employment Practices:** Companies should focus on providing better wages, insurance, and incentives for delivery personnel.
- **Integration of Local Kirana Stores:** Strengthening partnerships with local retailers can ensure broader market participation and economic inclusivity.
- **Technological Upgradation:** Leveraging AI, blockchain, and IoT can enhance efficiency while maintaining quality and compliance standards.

Concluding remarks

- Quick commerce is reshaping India's e-commerce with unmatched convenience.
- A balanced, well-regulated approach is needed to address sustainability, labor rights, and environmental concerns, ensuring long-term benefits for all stakeholders.

Source: TH

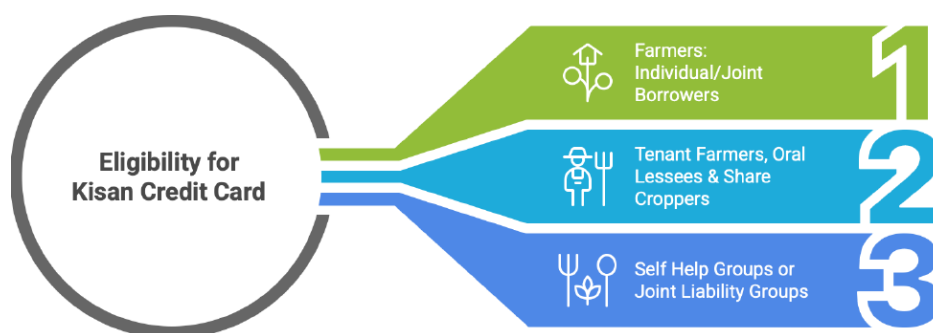
FARM LENDING: RISE OF KISAN CREDIT CARD BAD LOANS

Context

- Recent data reveals that bad loans under the **Kisan Credit Card (KCC) scheme** have surged by **42% over the past four years**, highlighting the **financial stress in the agricultural sector**.

Understanding Kisan Credit Card (KCC) Scheme (1998)

- About:** It is designed to provide **short-term credit to farmers** for agricultural and allied activities, based on the recommendations of the **R.V. Gupta Committee**.

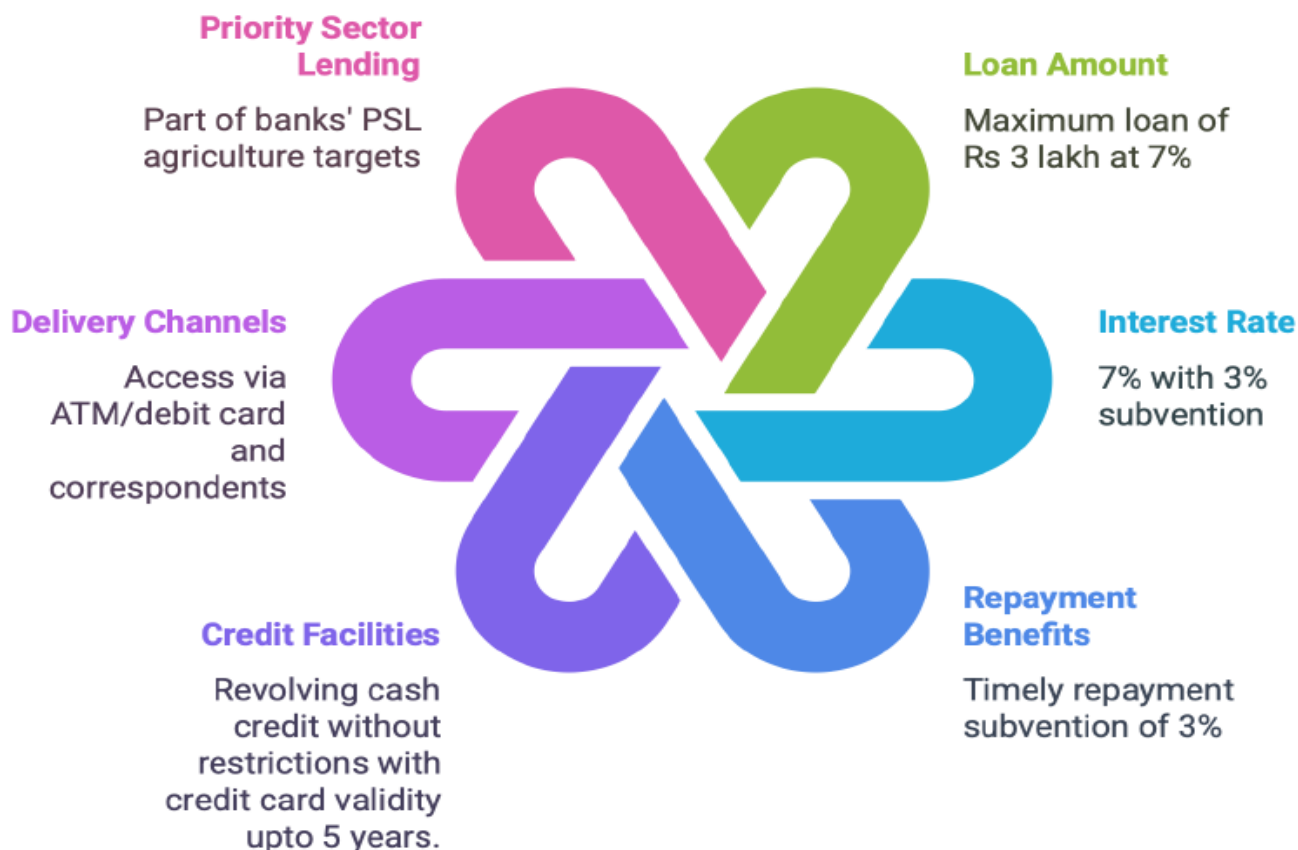


Features:

- Issued by commercial banks, cooperative banks, and regional rural banks.
- Covers crop production needs (seeds, fertilizers, pesticides, etc.).
- Includes working capital for allied activities like dairy, poultry, and fisheries.
- Can be used for **farm machinery, irrigation, and post-harvest expenses**.
 - A KCC loan is classified as NPA if unpaid within three years of disbursement.

Working of KCC Scheme:

Working of the Scheme



About Non-Performing Assets (NPAs)

- These refer to loans or advances for which the principal or interest payment remains overdue for more than 90 days.

Types

- Substandard Assets:** NPA for less than or equal to 12 months.
- Doubtful Assets:** NPA for more than 12 months.
- Loss Assets:** Unrecoverable loans, identified by the bank or RBI.

RBI Guidelines For Agricultural Loans (as NPAs)

- Short-term crop loans** are considered NPAs if payment is overdue **for two crop seasons**.
- Long-term agricultural loans** become NPAs if overdue **for one crop season**.

Current Trends in Agricultural NPAs**KCC: REVOLVING CASH CREDIT FACILITY OFFERED TO FARMERS**

Year	Number of operative accounts (crore)	Amount outstanding in operative accounts (₹ crore)	Amount outstanding in NPA accounts (₹ crore)
FY2021	3.07	4,56,736	68,547
FY2022	2.69	4,76,271	84,637
FY2023	2.83	5,18,485	90,832
FY2024	2.98	5,74,974	93,370
Q1 FY2025*	2.96	5,70,982	95,616
Q2 FY2025*	2.95	5,86,833	96,918
Q3 FY2025*	2.94	5,91,533	97,543

KCC data of Scheduled Commercial Banks (excluding Regional Rural Banks); *Data are provisional Source: RBI

- According to data from the RBI, the outstanding NPAs in KCC accounts of scheduled commercial banks (excluding regional rural banks) increased from ₹68,547 crore at the end of March 2021 to ₹97,543 crore by December 2024.
- It underscores the growing challenges faced by farmers in repaying their loans.

Major Causes of Rising NPAs in Agriculture

- Unpredictable Weather and Climate Change:** Erratic rainfall, frequent droughts, floods, and changing weather patterns directly impact crop yields, making it difficult for farmers to repay loans.
 - With limited insurance coverage, crop failures lead to defaults on agricultural credit.

- Low Farm Income and Market Volatility:** Despite government support, farmers often struggle with low productivity and unremunerative prices.
 - Market price fluctuations, lack of assured MSP for all crops, and inadequate procurement mechanisms contribute to financial distress.
- Loan Waiver Schemes and Moral Hazard:** State and central governments frequently announce loan waivers as a relief measure, encouraging willful defaults.
 - Farmers often anticipate future waivers, leading to poor repayment discipline.
- Inadequate Risk Management by Banks:** Banks are sanctioning loans without sound risk assessment.
- Structural Weakness in Agricultural Finance:** Small and marginal farmers, who form 86% of India's farming community, have limited access to institutional credit.
 - Dependence on informal moneylenders results in debt traps and an inability to repay formal loans.
- Delay in Crop Insurance Settlements:** Pradhan Mantri Fasal Bima Yojana (PMFBY) has faced delays in claim settlements, leaving farmers unable to repay loans.

Implications of Rising Agricultural NPAs

- Stress on Banking System:** High NPAs reduce the ability of banks to extend fresh loans, impacting overall agricultural credit growth.
 - RRBs and Cooperative Banks, which primarily cater to farmers, suffer from financial instability.
- Increased Fiscal Burden:** The government often compensates banks for loan waivers, straining fiscal resources and diverting funds from productive rural investments.
- Economic and Social Distress:** Indebtedness is a key reason behind farmer suicides, particularly in states like Maharashtra, Karnataka, and Punjab.
 - Rising NPAs lead to rural distress, impacting employment and food security.
- Credit Crunch for Genuine Farmers:** Due to higher default rates, banks tighten credit norms, making it difficult for genuine, creditworthy farmers to access loans.

Measures to Address Rising Agricultural NPAs

- Strengthening Crop Insurance and Risk Mitigation:** Faster claim settlements under PMFBY and expansion of insurance coverage can reduce financial distress.

- ♦ Promoting climate-resilient farming and crop diversification can mitigate weather-related risks.
- **Improving Credit Discipline:** Restricting loan waivers to genuinely distressed farmers and ensuring targeted relief can prevent willful defaults.
 - ♦ Encouraging timely repayment incentives, such as interest rate discounts, can improve repayment behavior.
- **Enhancing Institutional Credit Access: Expanding Kisan Credit Card (KCC)** coverage to all small and marginal farmers.
 - ♦ **Strengthening Farmer Producer Organizations (FPOs)** to ensure collective bargaining for better credit access.
 - ♦ Online application through banks' websites & **Common Service Centers (CSCs)**.
 - ♦ Integration with **PM-KISAN** and **Aadhar** for easier verification.
- **Strengthening Bank Supervision and Credit Monitoring:** Implementing technology-driven loan tracking to identify early signs of distress.
 - ♦ Increasing financial literacy programs to educate farmers on loan management and risk mitigation.
- **Encouraging Diversification and Value-Addition:** Promoting agribusiness, food processing, and non-farm activities to reduce over-reliance on traditional farming income.
 - ♦ Strengthening supply chains and storage infrastructure to minimize post-harvest losses.

Source: IE

GENE-EDITED BANANAS

In News

- Recently, a UK-based biotech company developed genetically-engineered bananas that have a **longer shelf-life** and **do not brown** as much.

Ripening of Bananas

- Bananas undergo a ripening process triggered by **ethylene**, a hormone they produce in large quantities.
- **Ethylene** activates genes that produce **polyphenol oxidase (PPO)**, an enzyme that causes browning by breaking down the yellow pigment in bananas.
- Bruising increases ethylene production, speeding up ripening and browning.

Latest Developments

- Scientists **genetically modified bananas** by silencing the gene that produces PPO, preventing browning.
- This genetic modification does not stop ripening but keeps the fruit looking fresh longer.
- A similar technique was **used in Arctic apples**, which have been commercially sold since 2017.

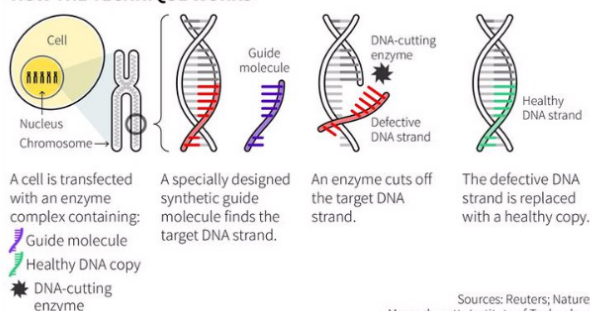
What is Gene Editing?

- It is a method that allows scientists to **modify the DNA of various organisms (plants, bacteria, animals)**.
- It leads to changes in physical traits (e.g., eye color) and disease risk.
- Early genome editing technologies were developed in the late 1900s.
- The **CRISPR tool, invented in 2009**, revolutionized genome editing by making it simpler, faster, cheaper, and more accurate.
- CRISPR is now widely used by scientists for genome editing due to its **efficiency and precision**.

DNA editing

A DNA editing technique, called CRISPR/Cas9, works like a biological version of a word-processing programme's "find and replace" function.

HOW THE TECHNIQUE WORKS



Recent Trends in Gene Editing

- **CRISPR Technology Advancements:** While CRISPR-Cas9 remains a cornerstone, research is expanding to explore other Cas enzymes (like Cas12 and Cas13) and alternative CRISPR systems.
- **Improved Delivery Methods:** Researchers are developing more efficient and targeted delivery systems, including viral vectors, lipid nanoparticles, and other innovative approaches.
- **Gene Therapy for Genetic Diseases:** Gene editing is showing promise for treating inherited disorders like sickle cell disease, cystic fibrosis, and Huntington's disease.

- **Crop Improvement:** Gene editing is being used to develop crops with enhanced traits, such as increased yield, improved nutritional value, and resistance to pests and diseases.

Regulations in India

- **Genetic Engineering Appraisal Committee (GEAC)** under **MoEFCC** oversees gene-editing approvals.
- **Food Safety and Standards Authority of India (FSSAI)** regulates genetically modified (GM) food products.

Current Status In India

- India has approved GM Mustard hybrid DMH-11 for its seed production and testing but has not yet approved CRISPR-based crops.
- The Indian Council of Agricultural Research (ICAR) is exploring gene-editing research aimed at enhancing climate resilience and pest resistance in crops.

Source :IE

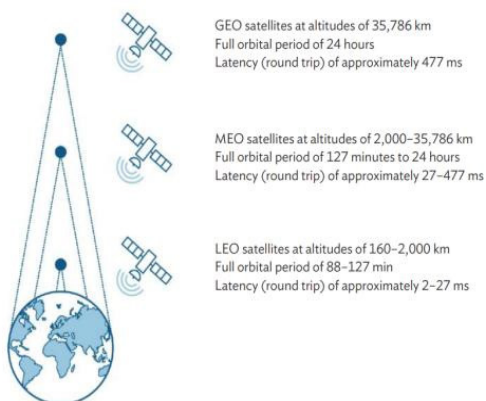
SPACE-TECH FOR GOOD GOVERNANCE

Context

- The Minister of Science and Technology has said that **India's Space technology** is playing a major role in **revolutionising governance at the "Good Governance" Conclave**.

What is Space Technology?

- Space technologies designate technologies used to enable activities **conducted in outer space**:
 - ♦ such as Earth observation, satellite communication, satellite navigation or even robotic and human space exploration beyond Earth's orbits.
- Governments use space technology, geospatial data, and field information for **planning, monitoring, and evaluating developmental activities**.



Future Prospects and Economic Growth

- **Growth:** India's space economy is growing rapidly, with a **tripled space budget and over 300 space startups**.
 - ♦ The space sector's value is expected to **rise from \$8 billion to \$44 billion**, marking India as a key global space player.
- **Vital Missions:** Trials for India's first human spaceflight, **Gaganyaan Mission**, will begin by the end of **2025**.
 - ♦ India aims to send an astronaut to the Moon by 2040 and establish the **Bharat Antariksh Station by 2035**.

Use of Space Technology in Governance

- **Disaster Management and Response: National Remote Sensing Centre (NRSC)** provides satellite data that helps in identifying flood-affected areas, mapping damage, and planning rehabilitation.
 - ♦ **The Indian National Disaster Management Authority (NDMA)** uses it for disaster relief operations.
- **Agriculture and Rural Development: FASAL (Forecasting Agricultural output using Space, Agrometeorology, and Land-based observations)** uses satellite data to predict crop yields, helping farmers make informed decisions.
 - ♦ **Soil Health Management and irrigation management** are optimized using remote sensing technologies.
- **Efficient Land Management:** Initiatives like **"Swamitva Yojana"** use satellite mapping for land record management.
 - ♦ This initiative simplifies land verification and promotes transparency in land ownership.
- **Environmental Monitoring: Bhuvan** an Indian web-based application developed by **ISRO** provides satellite data for various environmental and land-use applications.
 - ♦ Satellites like the **Oceansat series** provide data on sea surface temperatures, sea level rise, and coastal erosion.
- **Security and Defense:** Satellites help in remote sensing for border surveillance.
- **Administrative Efficiency:** Satellite data helps in the implementation of the Digital India initiative by enabling access to e-governance services.

Challenges

- **High Costs:** The development, maintenance, and launch of satellites are expensive.

- **Technical and Infrastructure Gaps:** Lack of adequate ground infrastructure, technical expertise, and trained personnel in remote areas.
- **Data Interpretation and Accuracy:** Space-based data requires accurate interpretation and analysis, and errors in data processing can lead to wrong decisions in governance.
- **Privacy Concerns:** Increased surveillance and monitoring through space technology raise privacy and security concerns among citizens.
- **Environmental Impact:** Increased space missions and satellite launches can contribute to space debris and environmental pollution.

Way Ahead

- **Develop and upgrade ground infrastructure,** data centers, and communication systems to support space-based services effectively.
- **Encourage collaboration between the government and private sector** to reduce costs, foster innovation, and improve the application of space technology.
- **Increase the number and diversity of satellites** for better coverage, particularly in remote and underserved regions of the country.
- **Encourage research in space technology and its applications** to address emerging governance challenges, including climate change and urban planning.
- **Adopt sustainable practices for satellite launches** and space missions to minimize environmental impacts and manage space debris effectively.

Source: PIB

NEWS IN SHORT

JADAYASWAMY FESTIVAL

In News

- **Jadayaswamy festival** was recently celebrated in Tamil Nadu.

About

- The **Badagas community (aboriginal Tribes)** of the Nilgiris celebrate the **Jadayaswamy festival** at **Jackanarai village** near Kotagiri in Tamil Nadu.
 - ♦ The Badagas live in villages, called “**Hattis**”.
 - ♦ Badaga people speak the language called “**Badugu**”.

- The festival is dedicated to **Jadayaswamy**, a deity revered by the Badagas. It symbolizes **faith, devotion, and the preservation of ancestral traditions**.
- Eight villages organise a procession to the Jadayaswamy temple and perform a **firewalk every year**.

Source: TH

BIJAYANANDA PATNAIK

In News

- The Prime Minister paid homage to Biju Patnaik on his **109th birth anniversary**.

About Biju Patnaik

- He was recognized as one of the key architects of **modern Odisha** and played a crucial role in India's freedom movement, aviation, and governance.
- He used his flying skills to help **freedom fighters escape British forces** and transport secret messages.
- He founded the **Kalinga Foundation** and established the **Kalinga Prize** to promote scientific knowledge.
- Biju Patnaik was honored with the title “**Bhumi Putra**” (**Son of the Soil**) by Indonesia—one of the highest civilian honors given to a foreigner.
- Awarded **Bintang Jasa Utama**, Indonesia's highest civilian honor in 1996.

Source: PIB

BILLS OF LADING BILL, 2024

Context

- The Union Minister of Ports, Shipping & Waterways, introduced the **Bills of Lading Bill, 2025**.

About

- **Aim:** To **update and simplify** the legal framework for shipping documents.
 - ♦ To provide a **modern, comprehensive, and user-friendly** approach to maritime shipping.
- The Bill replaces the **Indian Bills of Lading Act, 1856**, a colonial-era law governing maritime shipping.
 - ♦ The existing law is outdated, consisting of just three sections, and does not meet the evolving global trade and shipping industry needs.
- **Features:**
 - ♦ It brings India's maritime shipping law **in line with global standards**.

- It **simplifies the language** and reorganizes provisions for easier understanding without changing their substance.
- It gives the **Central Government the authority** to issue directions for the law's effective implementation.
- A **standard repeal and saving clause** will be added to facilitate a smooth transition.

Source: BS

VIZHINJAM PORT

In News

- Vizhinjam International Seaport has received the environmental clearance for the development of phase II and III.

About Vizhinjam Port

- Location:** Thiruvananthapuram, Kerala
- Key Features:** One of the deepest ports in India.
 - Capable of handling Ultra Large Container Vessels (ULCVs).
 - Developed under the Design, Build, Finance, Operate, and Transfer (DBFOT) model.
- Significance:** Efficient cargo movement, reduces India's dependence on foreign ports like Colombo (Sri Lanka), Singapore, and UAE for transshipment, strengthens India's maritime security.

Source: BL

CASSAVA

In Context

- Study has revealed that thousands of years of indigenous farming traditions have played a crucial role in maintaining the genetic diversity of **cassava**.

About Cassava (Also called 'Bread of the Tropics')

- Also known as 'Yuca' or 'Manioc', cassava is a **root vegetable** grown through stem cuttings.
- It is a tall semi-woody perennial shrub or tree native to **South America** and was introduced in Africa & Asia by Portuguese sailors.
 - Nigeria** is the world's largest producer of Cassava.
- It has numerous health benefits as it is **rich in energy & vitamins**.
- Under **India's National Policy on Biofuels (2018)**, cassava is recognized as a raw material for ethanol production, enhancing its significance beyond food security.

Source: DTE

INDIA'S WHEAT PRODUCTION ESTIMATED TO HIT RECORD HIGH

Context

- According to the Second Advance Estimates of Agriculture production, India's wheat production is estimated to reach a record level of **115.3 million metric tonnes** during **2024-25**.

Wheat Production in India

- Area:** In 2023-24, the area under wheat stood at **318.33 lakh hectares**, while the production is estimated at 113.92 million tonnes.
 - In India wheat is the **second largest crop** after paddy in terms of area coverage.
- Uttar Pradesh** is the top wheat-producing state in the country, followed by **Madhya Pradesh**, Punjab, Haryana, Rajasthan, Bihar, Gujarat and Maharashtra.
- Major Export Destinations (2023-24):** Nepal, Iraq, South Korea, UAE and Mongolia.

Top Producing Countries

Market	% of Global Production	Total Production (2024/2025, Metric Tons)
China	18%	140.1 Million
European Union	15%	121.3 Million
India	14%	113.29 Million
Russia	10%	81.5 Million
United States	7%	53.65 Million

Condition for Wheat Cultivation

- Climate: Temperature:** Requires **10-15°C** during sowing (germination) and **21-26°C** during ripening and harvesting.
 - Rainfall:** Optimal rainfall is **50-100 cm**. Excess rainfall can damage the crop.
 - Sunlight:** Requires bright sunshine during the ripening period.
 - Frost & Hailstorm:** Sensitive to frost at the flowering stage and susceptible to damage from hailstorms.
- Soil Type:** Grows best in well-drained loamy and clayey soil.
 - pH Level:** Prefers slightly alkaline to neutral soil (**6-8 pH**).

Reasons for increased wheat production India

- Scientific Agronomic Practices:** Adoption of zero tillage in wheat-growing areas, particularly in Punjab and Haryana, reducing soil degradation and enhancing yield.

- **Soil Health Management:** Increased awareness of balanced fertilizer application through initiatives like Soil Health Card Scheme.
- **Irrigation Facilities:** Greater coverage under micro-irrigation schemes such as PMKSY (Pradhan Mantri Krishi Sinchayee Yojana) has improved water availability.
- **Absence of extreme weather events** like unseasonal rains and heatwaves during critical growth stages.

Source: IE

INDIAN SCIENTISTS MAKES INK TO THWART COUNTERFEITING

Context

- Scientists from the Institute of **Nano Science and Technology and the Bhabha Atomic Research Centre** have made a **new security ink using strontium bismuth fluoride (Sr₂BiF₇) nanoparticles**.

About

- **Counterfeiting** is a crime involving the theft of someone's trademark.
 - ♦ Businesses – both small and large – use trademarks to help consumers identify their products.
- **Threat of Counterfeiting:** Counterfeiting harms businesses, especially in sectors like pharmaceuticals and branded consumer goods.
 - ♦ Fake medicines can delay treatment or be fatal, making security printing vital in packaging.
- **Security Printing Features:** The printing of items with safeguards against counterfeiting is called security printing.
 - ♦ **Optically Variable Ink:** Changes color when viewed from different angles.
 - ♦ **Watermarks:** Embedded designs for authenticity.
 - ♦ **Holograms:** Three-dimensional images for added security.
- **Currently available fluorescent inks** are visible only under either ultraviolet light or infrared light but not both, the new ink stands out because it fluoresces in both the ultraviolet and the near-infrared parts of the spectrum.

Source: TH

CHANDRAYAAN-3 REVEALS DATA OF MOON'S POLAR REGIONS

Context

- A new analysis of data from **Chandra's Surface Thermophysical Experiment (ChaSTE)** aboard **Chandrayaan-3** suggests that **water ice might be present in locations outside of the polar regions of the moon**.

About

- Findings offer insights into the Moon's surface composition and evolution.
 - ♦ Practical implications include potential for creating **temperature-controlled habitats for future human missions**.
- High-latitude areas with slopes >14° in the poleward direction may have conditions similar to polar regions for hosting water-ice.
 - ♦ These areas may be **more accessible than extreme polar regions for exploration**.

ChaSTE

- It is a **thermometer** that performed **on-site temperature measurements** of the **Moon's surface and sub-surface** near the **polar regions for the first time**.
- It revealed a significant temperature difference of **nearly 60°C between the Moon's surface and a layer just 10 cm beneath it**, highlighting the **extreme non-conductivity of the Moon's surface**.

Source: IE

SIPRI REPORT (2020-24)

Context

- According to the Sweden-based Stockholm International Peace Research Institute (SIPRI), Ukraine became the **world's largest importer of major arms in the period 2020–24**.

About

- **Top five arms importers:** Ukraine, India, Qatar, Saudi Arabia and Pakistan.
 - ♦ These five countries accounted for **35 percent** of global arms imports.
- **Top five arms exporters:** The USA, France, Russia, China and Germany.
 - ♦ These exporters contributed **72 percent** of total global arms exports.
- **The US increased** its share of global arms exports to **43 percent**, whereas **Russia's arms exports declined by 64 percent**.

- **China** accounted for **5.9 percent** of global arms exports in 2020–24, a slight decline from its share in 2015–19.

Indian Scenario

- India was the world's **second largest** arms importer during 2020–24.
 - ♦ However, its imports decreased by **9.3 percent** between 2015–19 and 2020–24.
- **The largest share** of Indian arms imports (**36 percent**) came from **Russia**, a significantly smaller share than in **2015–19 (55 percent)** and 2010–14 (**72 percent**).
- India has contracted major military deals with France, including **36 Rafale jets & six Scorpene-class submarines**.

Stockholm International Peace Research Institute (SIPRI)

- SIPRI is an independent international institute dedicated to research into conflict, armaments, arms control and disarmament.
 - ♦ It is based in **Stockholm, Sweden**.
- **Established in 1966**, it provides data, analysis and recommendations to researchers, media and the interested public.

Source: TH

PARA-ATHLETICS GRAND PRIX

In News

- India will host the **World Para-Athletics Grand Prix** at Jawaharlal Nehru Stadium.

About World Para Athletics Grand Prix

- It is an annual series of elite track and field competitions organized by **World Para Athletics**, a division of the **International Paralympic Committee (IPC)**.
- **Established in 2013**, the Grand Prix aims to provide high-level competitive opportunities for para-athletes worldwide, facilitating their preparation for major events like the World Championships and Paralympic Games.
- It is one of the most important events of the Para-Athletics calendar as it serves as the platform for **para-athletes** to get themselves classified in the **right sport class**.
- Once classification is done, the **para-athlete is eligible to play in the international tournaments**.

Source: IE

