

NEWS TODAY

Jute production is expected to drop by 20% in FY 2024-25 due to Natural Calamities: National Jute Board

The production may decline as floods have damaged the jute crop in some areas of **West Bengal** and **Assam**.

➤ Both states are the **major producer** of Jute crop (known as **golden fibre**).

About Jute Industry

➤ **Status:** India is the leading jute goods producing country in the world, accounting for about **70% of estimated world production**.

- ⊖ One of the major industries in the **eastern region**, particularly in **West Bengal** (about 73%).
- ⊖ Around 90% of the production is consumed locally.

➤ Opportunities

- ⊖ Provides direct employment to **0.37 million workers** in organized mills.
- ⊖ The industry has annual export potential of Rs 4500 crore (it was Rs 3000 crore in 2023-24)

Challenges

- **Declining area:** Area under jute cultivation declined by 1.7 lakh ha between 2013-14 and 2021-22.
- **Availability of Low-cost alternative:** E.g. Synthetic Products.
 - ⊖ Also, there is **lack of impetus** from **states** to procure **jute products** such as **jute geo-textiles**.
- **Quality:** More than 80% of raw jute grown is below average or poor quality.
- **Other:** Lack of Modernization, Shortage of skilled labour force, etc.

Measures Suggested (as per Standing Committee on Labour, Textiles and Skill Development)

- Prepare comprehensive policy for setting up new mills.
- Devise a suitable scheme to address the shortage of skilled workers, etc.

Initiative Taken

- **National Jute Board (NJB)** has been constituted as per National Jute Board Act, 2008.
 - ⊖ It is mandated for development of the **cultivation, manufacture** and **marketing** of jute and **jute products**.
- **National Jute Development Programme-** An Umbrella Scheme for development of Jute Industry.
- **Production Linked Incentive (PLI)**
- Establishment of the **Jute Corporation of India (JCI)**
- **Jute Packaging Materials (Compulsory Use in Packaging Commodities) Act, 1987** enacted for the compulsory use of jute packaging material.
- **Other:** Jute Mark Logo, **Improved Cultivation and Advanced Retting Exercise (Jute ICARE)** Scheme, etc.

World Meteorological Organisation (WMO) released 2nd Edition of WMO Ozone and UV Bulletin

The release of the Bulletin coincides with **World Ozone Day** (16 September).

- **World Ozone Day** celebrates the implementation of the **Montreal Protocol** and the later amendment to the pact, known as the **Kigali Agreement**.
- **Theme** for this year is **Montreal Protocol: Advancing Climate Actions**.

Key findings

- The ozone layer is **recovering**, with **ozone-depleting substances (ODS) decreasing**.
 - ⊖ Full recovery to **1980 levels is expected by 2066 over Antarctica**; by **2045 over the Arctic** and by **2040 for the rest of the world**.
- The Kigali Amendment could potentially reduce **global heating by 0.5°C by 2100**.

About Ozone Layer

- The ozone layer is found at a height of around 15 to 30 km (**stratosphere**) and is produced naturally by the interaction of solar ultraviolet light with molecular oxygen (O₂).
- **Depletion:** Ozone depletion occurs through chemical reactions involving ODS such as Chlorofluorocarbons (CFCs), Halons, etc.
 - ⊖ Ozone hole are mainly found in **Antarctic**, which is accelerated by **stratospheric clouds** that provide surfaces for reactions.
 - ⊖ **Ozone hole** refers to areas or regions harmed by damaging UV radiations.
- **Impact of depletion:** Human health (Increased skin cancer risk); **Plant life** (disrupted growth, development); **Marine ecosystems** (reduced phytoplankton survival), etc.

Initiatives Taken

- **Global**
 - ⊖ **Vienna Convention (1885)** and **Montreal Protocol (1987):** The landmark multilateral environmental agreement that regulates the production and consumption of man-made chemicals referred to as ODS.
 - ◆ India is a party
 - ⊖ **The Kigali Amendment:** Decision made to phase down **Hydrofluorocarbons (HFCs)** in 2016, in Kigali, Rwanda.
- **India:**
 - ⊖ India launched the **Cooling Action Plan in 2019** to address **cooling demand, refrigerants, and energy efficiency**.
 - ⊖ India has phased out **Chlorofluorocarbons, Carbon tetrachloride, Halons, Methyl Bromide and Methyl Chloroform**

Organs-on-chips (OoCs) Technology for disease modeling, drug development and personalized medicine

Recent advancements in human-relevant 3D culture models, known as "new approach methods" (NAMs), provide promising new ways to develop more precise and effective treatments.

➤ These models include 3D **spheroids, organoids, bioprinting, and OoCs technology.**

What is OoCs technology?

➤ It uses tiny fluid channels that **simulate blood flow**, oxygen delivery, nutrient transport etc. to create **miniature models of biological organs (lung, heart etc.)** on a chip-sized device.

➤ These chips are made from **living cells grown in a flexible material.**

Advantages of OoCs technologies:

➤ **Reduce animal testing:** OoCs can replace the need for animal testing in some cases.

➤ **More accurate biological responses:** Compared to traditional 2D cultures.

Applications of Organ-on-chips (OoCs) technologies

➤ **Drug discovery:** Study the efficacy of drugs and can be used to screen and develop new drugs.

➤ **Precision medicine:** Develop personalized treatments for specific patients.

➤ **Study disease mechanisms:** Help understand how diseases work, and identify potential therapeutic targets.

➤ **Study cell-cell interactions:** Allowing researchers to study how cells interact with each other as it can sense and control the environment around living cells.

Steps Taken for Promoting OoCs:

➤ **Amendment of New Drugs and Clinical Trials Rules 2019:** to permit the use of human organs-on-chips and other NAMs prior to and in conjunction with animal testing when evaluating new drugs.

➤ **BioE3 policy:** To drive innovation in the biotechnology sector, Key focus area of the policy is precision therapeutics.

Challenges associated with OoC Technology: Standardization of manufacturing processes; Lack of universally accepted protocols and materials, replicating full complexity of a human organ etc.

Vice-President emphasizes on paying attention to pervasive subtle gender discrimination in society

Gender discrimination in overt forms (e.g. Lack of gender sensitive infrastructure) has ostensibly vanished but it has **assumed subtle forms.**

➤ **Subtle gender discrimination** manifests through **attitudes** and behaviors that seem **supportive** but **reinforce traditional gender roles** and perpetuate **inequality.**

Subtle forms of Gender Discrimination:

➤ **Compliments that Reinforce Stereotyping:** Positive Comments (e.g praising women's ability to multitask) that reinforce traditional gender roles and undermine women's capabilities.

➤ **Hiring, Promotion, and Evaluation:** Unconscious bias towards male candidates for roles traditionally perceived as requiring physical strength or leadership.

➤ **Microaggressions:** Small innocuous comments that reinforce gender stereotypes For instance, implying that women are less committed to their careers due to family reasons.

➤ **Work-Life Balance Assumptions:** Assumptions about work-life balance needs might affect women more due to **societal expectations around caregiving and family responsibilities.**

Addressing Subtle Forms of Gender Discrimination

➤ **Blind evaluation:** E.g. Hiding a job applicants' physical attributes

➤ **Creating a Culture of Inclusivity:** Promoting workplace that respects input from everyone regardless of gender.

➤ **Assess unconscious gender bias at workplace:** Through a variety of methods, including perceptions surveys, language analysis, analysis of gender gaps in pay and career advancement.

➤ **Need to Change male mindset:** Through wider gender sensitization.

Steps Taken for Curbing Gender Discrimination:

➤ **Equal Remuneration Act of 1976:** is enforced to reduce wage gaps.

➤ **Beti Bachao Beti Padhao Scheme:** To educate citizens against gender bias and improve the efficacy of welfare services.

➤ **Prime Minister's Employment Generation Programme (PMEGP):** Helping women to set up their own enterprise

➤ **Mission Shakti:** Umbrella Scheme for Safety, Security and Empowerment of Women

Border Villages are First Line of Defence

Recently, the Defence Minister has described border villages as the country's first line of defence in dealing with multiple challenges posed by **India's geo-strategic location**.

How Border Villages will act as First Line of Defence?

- **Intelligence gathering:** Enhances situational awareness about security threats, suspicious activities, smuggling attempts etc.
 - ⊕ Residents serve as **Eyes and Ears for border forces** due to **familiarity with local terrains**, crossing points, patterns of movement etc.
- **Tackles workforce shortages:** E.g. Residents of Chushul village (Ladakh) in 2020 helped Army in securing supplies during standoff with Chinese troops
- **Developed border areas discredits adversary claims:** E.g. people and infrastructure on the ground confirms the true situation and counters any misleading claims.
 - ⊕ Moreover, it also helps in prompt military deployments in sensitive regions

Existing Challenges/Concern

- **Infrastructure Bottlenecks** due to hilly and difficult terrains. E.g. Northeast
- **Scattered Population** and low population density
- **Persistent law and order problems** due to illegal cross-border movements, insurgency, smuggling etc.
- **Trust deficit** due to feeling of being deprived of the developmental facilities and low Socio-economic profile
- **Development of Border villages** by adversary countries. E.g. China's new border village policy along Line of Actual Control (LAC)

Initiatives Taken

- **Vibrant Villages Programme** aimed at overall development of border villages, reversing outmigration, and preserving local culture
- **Border Area Development Programme (BADP)** to meet special developmental needs of people near international border.
- **Improving connectivity:** Through projects like Atal Tunnel, Sela Tunnel, and Shikun-La Tunnel.
 - ⊕ Enhance digital connectivity: E.g. Government-funded 4G Airtel service in Lumpo, Arunachal Pradesh.

RBI highlights issues in "Financing for Sustainable Agriculture"

Sustainable agriculture is essential for ensuring **food security, combating climate change, and preserving natural resources**.

- However, financing sustainable agriculture remains a challenge as highlighted by RBI in a recently held **international conference on Sustainable Financing for Food Security and Farm Income**.

Issues with Agro-Financing in India

- **Regional imbalances: Share of Southern Region** is 47.13% whereas that of **Northeast Region** is 0.76% (2021-22).
- **Issues in access of Credit:** ~23% of credit is from non-institutional sources (2021-22).
- **Non-integrated value chain financing** due to issues such as fragmentation of land holdings
- **Other Issues:** High cost of finance, lack of collateral, complicated procedures etc.

Solutions Suggested for Sustainable financing:

- **Increased role of Collectives** such as FPOs and FPCs in enhancing bargaining power, access to technology and assured marketing.
- **Value Chain Financing** by integrating various stakeholders such as farmers, aggregators, traders, processors into a coordinated system.
- **Warehouse Financing** to stabilize prices of agricultural commodities.
- **Adoption of Financing Technology** to expand irrigation infrastructure, promote micro-irrigation systems, and farm mechanization.
- **Capital formation through convergence with Government Schemes** and interest subventions
- **Leveraging technology and data-driven insights** to enhance financing models. E.g. Collaboration with digital platforms to track crop yields

Steps Taken for financing Agriculture:

- **Kisan Credit Card (KCC)** to meet working capital needs
- **Agricultural Infrastructure Fund (AIF)** for farm-gate infrastructure
- **Agricultural Marketing Infrastructure (AMI) scheme** for construction or renovation of godowns and warehouses
- **Mission Organic Value Chain Development for North Eastern Region Scheme** aimed at creating comprehensive value chain from inputs to consumer markets and boosting exports

Also in News



Palamau Tiger Reserve (PTR)

Left wing extremism has impeded forestry operations in PTR.

About PTR

- **Location:** Western part of the **Chotanagpur plateau, Jharkhand**
- It has geological formation consisting of gneiss and is rich in bauxite and coal.
- It is first sanctuary in world to have a tiger census.
- It is constituted under the **Project Tiger (1973)**
- **River:** It is watershed area for **Koel, Burha and Auranga**.
- **Fauna:** Tiger, Elephant, Leopard, Grey wolf, and Wild dog
- **Vegetation:** Flora is dominated by Tropical Dry Deciduous forest and small patch of tropical Moist Deciduous forests exist too.
 - ⊕ **Key flora:** Sal, Butea, Carissa, Capparis and Salvadora



Phosphoric Acid

The growing demand for phosphoric acid in electric vehicle batteries poses a potential threat to India's agriculture sector, which relies heavily on imported fertilizers.

- It is used in **lithium-iron-phosphate (LFP)** batteries.

About Phosphoric Acid (H3PO4)

- Manufactured from rock phosphate ore after grinding and reacting with sulphuric acid.
- **Properties: Corrosive, colorless, odorless, and inorganic acid.**
- **Uses:**
 - ⊕ It's the key ingredient in **di-ammonium phosphate (DAP)**.
 - ◆ India's **second most consumed fertiliser** after urea.
 - ⊕ **Other uses:** livestock feeds, phosphate salts, polyphosphates, soaps, waxes, polishes and detergents.
- **India imports phosphoric acid** mainly from Jordan, Morocco, Senegal, and Tunisia.



Fast-track special courts (FTSCs)

FTSCs are much more efficient in handling rape cases and those related to Protection of Children from Sexual Offences (POCSO) Act according to a report released by India Child Protection.

About FTSCs

- **Type:** Centrally sponsored scheme, launched in 2019 (extended up to 2026)
- **Funding:** Centre bears its expenditure from the Nirbhaya Fund
- **Implementation:** By department of Justice, Ministry of Law and Justice.
- **Objective:** Ensures swift disposal of rape cases and those coming under the POCSO Act.
 - ⊕ 755 FTSCs (out of decided 1023) including 410 exclusive POCSO (ePOCSO) Courts are functional in 30 States / UTs.
- **Significance:** FTSCs disposed of 83% of the cases in 2022 compared with 10% by the conventional courts.



Seaweed

ICAR-Central Marine Fisheries Research Institute have been designated as a center of excellence for seaweed cultivation.

About Seaweed

- It is a common name for various species of marine plants and algae which grow in oceans as well as in rivers, lakes etc.
- Multicellular and macroscopic autotrophs broadly classified into three groups such as green (Chlorophyta), brown (Phaeophyta), and red (Rhodophyta) seaweeds.
- **Applications:-**
 - ⊕ **Nutritional:** Also called sea vegetables, it provides:
 - ◆ Minerals: calcium, phosphorus, sodium, potassium
 - ◆ Vitamins: A, B1, B12, C, D, E etc
 - ⊕ **Health:** Anti-inflammatory, antimicrobial & used in cancer treatment.
 - ⊕ **Manufacturing:** Binding agents in toothpaste, fruit jelly, organic cosmetics, skincare items.
 - ⊕ **Agriculture:** Enhances crop productivity



Battery Waste Management (BWM) Rules, 2022

Central Pollution Control Board (CPCB) has introduced stringent environmental compensation (EC) guidelines to penalise violations of the BWM Rules, 2022.

About BWM Rules, 2022

- The Rules specify standards to manage waste batteries.
- It covers all types of batteries, viz. Electric Vehicle batteries, portable batteries, automotive batteries and industrial batteries etc.
- It specifies extended producer responsibility (EPR) where producers ensure collection, recycling, and refurbishment of the waste batteries.
- Environmental compensation imposed for non-fulfilment of EPR targets are based on the principle of Polluter Pays Principle.



Account Aggregator (AA)

Lending firms have utilized AA to facilitate loans worth Rs 42,300 crores.

About AAs:

- **Function:** Helps an individual securely and digitally access and share information from one financial institution they have an account with any other regulated financial institution in AA network.
 - ⊖ It enables the flow of data between Financial Information Providers and Financial Information Users.
- **Regulation:** It is a type of RBI regulated entity (with an NBFC-AA license) which needs the consent of individuals for sharing data.
- **Significance:**
 - ⊕ AAs cannot read or resell consumer data.
 - ⊖ It enables consumers to selectively share & even revoke data once shared.



Online Information and Database Access or Retrieval (OIDAR) Services

Directorate General of GST Intelligence (DGGI) has suggested reciprocal arrangements with foreign governments for information sharing and enforcement measures to prevent tax evasion in OIDAR services.

- DGGI is apex intelligence organization that collects and disseminates intelligence on GST, Central Excise, Service Tax evasion.
- Operates under the Ministry of Finance.
- **About OIDAR services**
 - Services provided through the medium of internet and received by the recipient online without having any physical interface.
 - ⊖ E.g., cloud services, digital content, etc.
 - If a foreign service provider renders OIDAR services to an unregistered recipient located in India, the foreign service provider is mandatorily required to obtain a registration under Indian GST and pay GST.



Quantum natural language processing (QNLN)

QNLN has emerged as a field of research with potentially profound implications for large language modeling (LLM).

About QNLN:

- It is the application of quantum computing to natural language processing (NLP).
 - ⊖ NLP gives computers ability to interpret, manipulate, and comprehend human language.
- **Need for QNLN:** Traditional LLMs excel at processing semantic (meaning-related) aspects of natural language but struggle with syntax.
 - ⊖ Syntax is structural arrangement of words and phrases in a sentence.
- QNLN focuses on grammar (syntax) and meaning (semantics) together, rather than separately as conventional systems do.
- **Advantages:** Lower energy costs than conventional LLMs, Requiring fewer parameters than their classical counterparts etc.

Personality in News



Shyamlal Gupta 'Parshad'

Famous poet and lyricist Shyamlal Gupta 'Parshad' was recently remembered on his birth anniversary.

About Shyamlal Gupta 'Parshad' (9 September 1896-10 August 1977)

- Born in Narwal, Kanpur
- He was a freedom fighter, journalist, social worker, and teacher.

Contributions:

- Composed patriotic song 'Vijayi Vishwa Tiranga Pyara'(Jhanda Geet) in 1924.
- He also participated in major movements like 'Salt Satyagraha' and 'Quit India Movement'
- **Social worker:** Founded many organizations including college, orphanage, and girls' school.
 - ⊕ Also actively opposed dowry system and advocated for widows' remarriage.
- Edited a monthly magazine called 'Sachiv'

Achievements:

- Awarded 'Padma Shri' in 1973.

Values: Justice, Courage, Determination etc.

