



World Breastfeeding Week 2023

[Source: DTE](#)

Why in News?

On the occasion of [World Breastfeeding Week 2023](#), the [United Nations Children's Fund \(UNICEF\)](#) and the [World Health Organization \(WHO\)](#) lauded the progress made by **several countries in increasing exclusive breastfeeding rates**, while also highlighting the potential for further advancements if breastfeeding is protected and supported, particularly in the workplace.

What is World Breastfeeding Week?

- **World Breastfeeding Week**, observed annually during the first week of August in commemoration of the **1990 Innocenti Declaration**.
 - In 1990, the Innocenti Declaration was signed by government policymakers, UN health agencies, and other organisations **to protect, promote, and support breastfeeding**.
- In **1991**, the **World Alliance for Breastfeeding Action (WABA)** was formed as a global network, and since 1992, the world has marked **Breastfeeding Week, annually**.
 - Since 2016, WBW has been aligned with the [Sustainable Development Goals \(SDGs\)](#).
 - Breastfeeding can help achieve many of the 17 SDGs, including goals on **poverty, hunger, health, education, gender equality, and sustainable consumption**.
- **Theme 2023: "Let's make breastfeeding at work, work"**.
 - **UNICEF and WHO** called on governments, donors, civil society and the private sector to step up efforts to help eliminate barriers women and families face to achieving their breastfeeding goals and **reach the global 2030 target of 70%**.

What is the Progress in Exclusive Breastfeeding Rates?

- Exclusive breastfeeding involves **feeding babies only breast milk and excluding all other foods, liquids, infant formula**, or water, except for necessary medications or vitamin and mineral supplements.
- The practice of exclusive breastfeeding offers vital health benefits to infants, including **protection against common infectious diseases** and bolstering their immune systems, ensuring they receive essential nutrients for optimal growth and development.
 - Over the past decade, the global rate of exclusive breastfeeding has risen by an impressive 10% points, **reaching 48%**.

What are the Indian Government Initiatives Relates to Breastfeeding?

- [MAA - "Mothers Absolute Affection"](#)
 - MAA is a nationwide programme of the **Ministry of Health and Family Welfare** to promote breastfeeding.
 - [Vatsalya - Maatri Amrit Kosh](#)
 - Vatsalya, a **National Human Milk Bank and Lactation Counselling Centre** has been established in collaboration with the Norwegian government
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Excess Cane Payments

For Prelims: [Sugarcane, Fair and Remunerative Price \(FRP\)](#)

For Mains: Agricultural Pricing, Sugar production in the Indian Economy, Challenges faced by sugarcane industry.

[Source: IE](#)

Why in News?

In a significant move, the Government of India has taken a step to **provide relief to cooperative sugar mills** by allowing them to **claim excess cane price payments made to farmers as "business expenditure."**

What is the Issue of Excess Cane Payments?

- Sugarcane is a major crop in India, especially in states like **Maharashtra, Uttar Pradesh, Karnataka, and Tamil Nadu.**
- The Centre fixes a [fair and remunerative price \(FRP\)](#) for sugarcane every year, which is the **minimum amount that sugar mills have to pay to farmers** for procuring their cane.
- However, some cooperative sugar mills, especially in Maharashtra, **pay more than the FRP** to farmers as an incentive or bonus. This is called **excess cane payment.**
- The excess cane payment has resulted in tax disputes between the cooperative sugar mills and the Income Tax Department.
 - The mills claim the **excess payment as business expenditure**, while the **department treats it as a distribution of profits and disallows it as a deduction.**

How has the Government of India Resolved the Issue of Excess Cane Payments?

- In the **2015-16 Union Budget**, the Government of India introduced an amendment to the **Finance Act** that allowed cooperative sugar mills to claim excess cane payment as deduction for computing their business income. However, **this was applicable only from the 2016-17 assessment year onwards.**
- In the [2023-24 Union Budget](#), the Government of India extended the **benefit of deduction to all financial years prior to 2015-16.** This was done by amending **Section 155 of the Income Tax Act .**
- The move is expected to provide relief of almost Rs 10,000 crore to cooperative sugar mills, against pending tax demands and litigation in respect of payments made before the 2015-16 financial year.

What is the FRP?

- **About:**
 - FRP is the **price set by the government** that sugar mills are obligated to **pay to farmers for the sugarcane procured from them.**
- **Payment and Agreement:**
 - Mills are legally required to pay the FRP to farmers for their cane.
 - Mills can choose to sign agreements with farmers, allowing them to pay the FRP in installments.
 - **Delayed payments can attract interest charges of up to 15% per annum**, and the

sugar commissioner can recover unpaid FRP by attaching properties of the mills.

▪ **Governing Regulations:**

- The pricing of sugarcane is governed by the statutory provisions of the Sugarcane (Control) Order, 1966 issued under the [Essential Commodities Act \(ECA\), 1955](#).
- According to the regulations, the FRP must be paid within 14 days of cane delivery.

▪ **Determination and Announcement:**

- The FRP is determined based on the recommendations of the **Commission for Agricultural Costs and Prices (CACP)**.
- The **Cabinet Committee on Economic Affairs (CCEA)** announces the FRP.

▪ **Factors Considered:**

- The FRP takes into account various factors, including the **cost of sugarcane production, returns from alternative crops**, trends in agricultural commodity prices, availability of sugar to consumers, selling price of sugar, sugar recovery from cane, and income margins for cane growers.

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Prices of Sugarcanes are determined by Central and State Government.



Fair and Remunerative Price (FRP)

- The Central Government announces FRP which are determined on the recommendation of the CACP and announced by the Cabinet Committee on Economic Affairs (CCEA).
 - The FRP is based on the Rangarajan Committee report on reorganising the sugarcane industry.



State Advised Prices (SAP)

- The SAP is announced by the Governments of key sugarcane producing states.
 - The price is calculated by the experts, who calculate the entire economics of the crop by taking input cost and then suggest to the government, which may agree or not.

#EconomyAndEndeavour

What is Sugarcane?

- **Temperature:** Between 21-27°C with hot and humid climate.
- **Rainfall:** Around 75-100 cm.
- **Soil Type:** Deep rich loamy soil.
- **Top Sugarcane Producing States:** Uttar Pradesh, Maharashtra, Karnataka, Tamil Nadu, Bihar.
- India is the **second largest producer** of sugarcane after Brazil.

- It can be grown on all varieties of soils ranging from **sandy loam to clay loam** given these soils should be well drained.
- It needs manual labour from sowing to harvesting.
- It is the main source of **sugar**, gur (jaggery), khandsari and molasses.
- Scheme for Extending Financial Assistance to Sugar Undertakings (SEFASU) and [National Policy on Biofuels](#) are two of the government initiatives to support sugarcane production and the sugar industry.

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Q. With reference to the current trends in the cultivation of sugarcane in India, consider the following statements: (2020)

1. A substantial saving in seed material is made when 'bud chip settlings' are raised in a nurse, and transplanted in the main field.
2. When direct planting of setts is done, the germination percentage is better with single budded setts as compared to setts with many buds.
3. If bad weather conditions prevail when setts are directly planted, single-budded setts have better survival as compared to large setts
4. Sugarcane can be cultivated using settlings prepared from tissue culture.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 3 only
- (c) 1 and 4 only
- (d) 2, 3 and 4 only

Ans: (c)

Exp:

- **Tissue Culture Technology**
 - Tissue culture is a technique in which fragments of plants are cultured and grown in a laboratory.
 - It provides a new way to rapidly produce and supply disease-free seed cane of existing commercial varieties.
 - It uses meristem to clone the mother plant.
 - It also preserves genetic identity.
 - The tissue culture technique, owing to its cumbersome outfit and physical limitation, is turning out to be uneconomical.
- **Bud Chip Technology**
 - As a viable alternative of tissue culture, it reduces the mass and enables quick multiplication of seeds.
 - This method has proved to be more economical and convenient than the traditional method of planting two to three bud setts.
 - The returns are relatively better, with substantial savings on the seed material used for planting. Hence, statement 1 is correct.
 - The researchers have found that the setts having two buds are giving germination about 65 to 70% with better yield. Hence, statement 2 is not correct.
 - Large setts have better survival under bad weather but single budded setts also give 70% germination if protected with chemical treatment. Hence, statement 3 is not correct.
 - Tissue culture can be used to germinate and grow sugarcane settlings which can be transplanted later in the field. Hence, statement 4 is correct. Therefore, option (c) is the correct answer.

Himalayan Vulture: *Gyps himalayensis*

[Source: TH](#)

Why in News?

Recently, the **Assam State Zoo in Guwahati** has achieved a groundbreaking feat by successfully **breeding the elusive Himalayan vulture (*Gyps himalayensis*) in captivity for the first time in India.**

- Additionally, the Union Ministry of Health and Family Welfare's decision to prohibit the **manufacture, sale, and distribution of ketoprofen and aceclofenac** has sparked optimism among vulture conservationists and experts.

What are the Key Highlights of the Himalayan Vulture ?

- **Conservation Status:**
 - [International Union for Conservation of Nature \(IUCN\) Red List](#): **Near Threatened.**
 - [CITES \(the Convention on International Trade in Endangered Species of Wild Fauna and Flora\)](#): **Appendix II.**
- **Distinctive Characteristics:**
 - The Himalayan vulture is one of the **largest Old World vulture species**, boasting an **impressive wingspan and formidable presence.**
 - Its plumage is dominated by **shades of black and brown**, which aid in its **camouflage against the rugged mountain terrain.**
 - The vulture's powerful hooked beak and keen eyesight make it a **proficient scavenger**, playing a crucial role in the ecosystem by cleaning up carrion.
- **Habitat and Range:**
 - The Himalayan vulture is aptly named, as it primarily inhabits the towering **peaks and valleys of the Himalayan mountain range.**
 - It is a common winter migrant to the Indian plains.
 - Its range extends across several countries, **including India, Nepal, Bhutan, and China**, where it thrives in challenging high-altitude environments.
- **Ecological Significance:**
 - As a top predator and scavenger, the Himalayan vulture plays a vital role in maintaining the **health of its habitat by efficiently disposing of animal remains.**
 - Its scavenging behavior helps **prevent the spread of diseases that could arise from decaying carcasses**, thus contributing to the overall balance of the ecosystem.
- **Challenges and Conservation Efforts:**
 - Breeding the Himalayan vulture in captivity posed challenges due to its **natural breeding habits in snow-clad mountains.**
 - Successful breeding at the zoo was made possible through long-term captivity and acclimatization to the tropical environment.
 - Factors such as **habitat loss, food scarcity, and accidental poisoning from veterinary drugs** have contributed to its vulnerable status.
 - Conservation breeding centers, such as the **Vulture Conservation Breeding Centre (VCBC)** at Rani, Assam, are instrumental in safeguarding vulture species.



What are Ketoprofen and Aceclofenac, and How Do They Impact Vultures?

- Ketoprofen and aceclofenac are two types of [non-steroidal anti-inflammatory drugs \(NSAIDs\)](#) that are used to **treat pain and inflammation** in animals, especially cattle.
- Prescribed for arthritis, injuries, and post-surgery pain.
- However, these drugs have been found to be **harmful to vultures**, as they cause **kidney failure** and **death** when the **vultures feed on the carcasses of animals** treated with these drugs.

Vultures in India:

Sr. No.	Name of the Vulture Species	IUCN status	Pictorial Representation
1.	Oriental White-backed Vulture (Gyps Bengalensis)	Critically Endangered	
2.	Slender-billed Vulture (Gyps Tenuirostris)	Critically Endangered	
3.	Long-billed Vulture (Gyps Indicus)	Critically Endangered	
4.	Egyptian Vulture (Neophron Percnopterus)	Endangered	
5.	Red-Headed Vulture (Sarcogyps Calvus)	Critically Endangered	
6.	Indian Griffon Vulture (Gyps Fulvus)	Least Concerned	
7.	Himalayan Griffon (Gyps Himalayensis)	Near Threatened	
8.	Cinereous Vulture (Aegypius Monachus)	Near Threatened	
9.	Bearded Vulture or Lammergeier (Gypaetus Barbatus)	Near Threatened	

UPSC Civil Services Examination Previous Year Question (PYQ)

Q. Vultures which used to be very common in Indian countryside some years ago are rarely seen nowadays. This is attributed to (2012)

- (a) the destruction of their nesting sites by new invasive species
- (b) a drug used by cattle owners for treating their diseased cattle
- (c) scarcity of food available to them
- (d) a widespread, persistent and fatal disease among them.

Ans: (b)

LK-99: The Quest for a Room-Temperature Superconductor

[Source: TH](#)

Why in News?

A group of South Korean scientists have recently claimed the **discovery of a material they named LK-99**. According to their reports, **LK-99 is a [superconductor](#) at room temperature and pressure.**

- This groundbreaking claim has piqued the interest of the scientific community and could potentially **revolutionize the world of [electrical conductivity](#) and technology.**

What does the Claim on Discovery of LK-99 Suggest?

- **Exploring Apatite Materials:** The South Korean group's discovery involved a rather unexpected material called **apatite**.
 - Apatites are minerals with a phosphate scaffold in a tetrahedral or pyramidal motif (one phosphorus atom is surrounded by four oxygen atoms).
 - The scientists started with lead apatite and substituted some of the lead atoms with copper, **resulting in copper-substituted lead apatite, which they named LK-99.**
- **Evidence of Superconductivity:** The group reported that at **10% copper substitution, LK-99 exhibited the characteristics of a superconductor.**
 - The material also maintained superconductivity in the presence of an external magnetic field, up to a certain critical threshold, a behavior consistent with known superconductors.
- **The Implications of LK-99:** If the claims of LK-99 being a room-temperature superconductor are confirmed, it could usher in a new era for electrical conductivity and technology.
 - The widespread application of superconductors in everyday devices could lead to increased **energy efficiency, reduced power losses, and the development of revolutionary technologies.**

What are Superconductors?

- **About:**
 - Superconductors are **materials that exhibit zero electrical resistance** when cooled to

extremely low temperatures. This property allows them to **conduct electricity with no loss of energy.**

- **Example:** Lanthanum-Barium-Copper Oxide, Yttrium-Barium-Copper Oxide, Niobium-Tin etc.

▪ **Discovery:**

- In **1911 Kamerlingh Onnes** discovered that the electrical resistance of **mercury completely disappeared at temperatures a few degrees above absolute zero.**
 - The phenomenon became known as [superconductivity](#).

▪ **Applications of Superconductors:**

- **Energy Transmission:** Superconducting cables can transmit electricity without losses, making them ideal for long-distance power transmission.
 - **Magnetic Resonance Imaging (MRI):** Superconducting magnets are used in [MRI machines](#) to create strong and stable magnetic fields, enabling detailed medical imaging.
 - **Particle Accelerators:** Superconducting magnets are crucial components in particle accelerators like the [Large Hadron Collider \(LHC\)](#), allowing particles to reach high velocities.
 - **Electric Motors and Generators:** Superconducting materials can enhance the efficiency and power density of electric motors and generators.
 - **Maglev Trains:** Superconducting magnets enable **magnetic levitation (maglev) trains to float above tracks**, reducing friction and enabling high-speed travel.
 - **Quantum Computing:** Some superconducting materials are being explored for their **potential in [quantum computing](#)** due to their ability to exhibit quantum states.
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