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First Global Symposium on Farmers' Rights

Context: The President of India, Smt Droupadi Murmu, inaugurated the first 'Global Symposium on Farmers' Rights' (GSFR) at the ICAR Convention Centre, National Agricultural Science Centre, New Delhi.

- Indian farmers received awards recognizing their contributions to plant diversity under the PPVFR Act, 2001.
- 'Plant Authority Bhawan' and an online plant variety 'Registration Portal' were inaugurated.
- Union Minister of Agriculture emphasized the vital role of farmers in preserving agricultural heritage.
- President highlighted India's diversity and farmers as primary food producers.
- GSFR was organized in collaboration with agricultural research organizations, including ICAR.
- India leads in including Farmers' Rights in Plant Variety Registration.
- The symposium aimed to promote Farmers' Rights under the International Treaty on Plant Genetic Resources.
- Over 700 delegates from 59 countries participated, including policy makers, scientists, and farmer representatives.
- GSFR aimed to recognize farmers as conservers of agrobiodiversity and global food security guardians.

Protection of Plant Varieties and Farmers' Rights Act, 2001

- **Objectives:**
 - To establish an effective system for the protection of plant varieties, the rights of farmers and plant breeders, and to encourage the development of new varieties of plants.
 - To accelerate agricultural development in the country, protect plant breeders' rights, stimulate investment for research and development both in the public and private sectors for the development of new plant varieties.
 - Facilitate the growth of the seed industry in the country, ensuring the availability of high-quality seeds and planting material to farmers.
- **Rights:**
 - **Breeders' Rights:**
 - Exclusive rights for production, sale, distribution, import, and export of protected varieties.
 - Ability to appoint agents or licensees and pursue legal action for rights violations.
 - **Researchers' Rights:**
 - Exclusive rights for production, sale, distribution, import, and export of protected varieties.
 - Ability to appoint agents or licensees and pursue legal action for rights violations.
 - **Farmers' Rights:**
 - Registration and protection for farmers who create new varieties.
 - Option to register farmer-developed varieties as extant.
 - Farmers can save, use, exchange, share, or sell their farm produce, including protected variety seeds.
 - Eligibility for recognition and rewards for conserving Plant Genetic Resources.
 - Provision for compensation to farmers in case of variety non-performance (Section 39 (2)).
 - No fee payment in proceedings before the Authority, Registrar, Tribunal, or High Court under the Act.

Reduction of Carbon emission from Construction

Context: A UN report calls for developing countries to adopt low-carbon building materials to cut greenhouse gas emissions, shifting away from unsustainable construction practices.

Objectives of the UN Report

- **Reduce Greenhouse Gas Emissions:** Encourage developing countries to shift from unsustainable building practices to low-carbon building materials to reduce greenhouse gas emissions.
- **Highlight Building Growth:** Emphasize the rapid expansion of buildings globally, equivalent to the size of Paris every five days.
- **Address Sector's Impact:** Acknowledge that 37% of global greenhouse gas emissions are attributed to the built environment sector, which includes buildings, distribution systems, roads, and transportation.
- **Promote Emission Reduction Strategies:** Advocate for the "Avoid-Shift-Improve" approach, focusing on waste reduction, sustainable materials, and improved production methods.

Types of Greenhouse Gas Emissions from the Built Environment

- **Embodied Emissions:** Emissions related to construction, including extraction, manufacturing, transport, and end-of-life demolition.
- **Operational Emissions:** Emissions during building use, such as heating, cooling, and electrical consumption.

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Projected Changes in Carbon Emissions

- **Shift in Carbon Sources:** Warn of a projected shift from operational emissions (from building use) to embodied carbon emissions (from construction and materials), rising from 25% to 49% by 2050.
- **Focus on Existing Buildings:** Recommend developed countries prioritize renovating existing buildings, generating significantly fewer emissions compared to new construction.
- **Circular Design for New Buildings:** Advise incorporating circular design strategies for new construction, enabling the recovery of materials during disassembly or renovation.

Supply-and-Demand Model for Circular Economies

- **Promote Circular Material Cycles:** Suggest developing a supply-and-demand model that includes careful disassembly of buildings and the preparation of second-cycle materials for resale.
- **Emission Reduction Potential:** Mention that G7 countries, China, and India could achieve substantial emissions reductions through the use of recycled materials in residential buildings.

Principles for Low-Carbon Building Materials

- **Increase Building Lifetimes:** Extend the lifetime of buildings to reduce aggregate embodied carbon emissions.
- **Utilize Sustainable Bio-Based Materials:** Advocate for the use of renewable or reusable sustainable materials, such as mass timber and engineered bamboo, as alternatives to carbon-intensive concrete and steel.
- **Decarbonize Energy Supply:** Recommend electrifying and decarbonizing energy used in the production and maintenance of materials, buildings, and urban infrastructure.

Concrete and Steel Production Solutions

- **Cement Carbon Reduction:** Propose reducing the clinker-to-cement ratio and increasing the use of cement alternatives to decarbonize cement production.
- **Carbon Capture and Utilization (CCU) Concrete:** Explore CCU concrete as a method to store carbon within building materials, with potential benefits and challenges.
- **Steel Reuse:** Promote steel reuse to save energy, reduce demand, and extend building lifetimes.
- **Renewable Energy for Aluminium:** Advocate for renewable energy use in aluminium production and increased utilization of recycled aluminium.

(Report: <https://www.buildingmaterialsandclimate.com/>)

NDCs of G-20 Countries

Context: UN Secretary-General Antonio Guterres urges G-20 leaders to take strong, immediate action on the climate crisis.

- The 2015 Paris Agreement requires all countries to submit updated national climate action plans, known as nationally determined contributions (NDCs), every five years.
- NDCs serve as a roadmap for reducing greenhouse gas (GHG) emissions and are essential for limiting global temperature increases to 1.5°C.
- According to Climate Watch, nearly all G-20 countries, with the exceptions of Russia and Argentina, submitted updated first NDCs between December 2020 and April 2023.
- Russia had submitted its first NDC in 2020 but hasn't provided an update yet.
- Argentina submitted its second NDC in November 2021.

Latest Nationally Determined Contributions of G20 Countries

- **Argentina** aims to cap net emissions at 349 metric tonnes of carbon dioxide equivalent (MtCO₂e) by 2030.
- **Australia** plans to reduce greenhouse gas emissions by 43% below 2005 levels by 2030.
- **Brazil** intends to lower greenhouse gas emissions by 37% in 2025 and 50% in 2030, both compared to 2005 levels.
- **Canada** aims to reduce emissions by 40-45% below 2005 levels by 2030.
- **China** is committed to lowering carbon dioxide emissions per unit of GDP by over 65% from the 2005 level by 2030.
- The **EU** plans to reduce net domestic greenhouse gas emissions by at least 55% by 2030.
- **India** aims to reduce emissions intensity of its GDP by 45% by 2030 compared to 2005 levels and achieve 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030.
- **Indonesia** seeks to reach emissions of 1,953 MtCO₂e (unconditional) and 1,632 MtCO₂e (conditional) by 2030.
- **Japan** is targeting a 46% reduction in GHG emissions in fiscal year 2030 compared to its fiscal year 2013 levels.
- **Mexico** aims for a 35% reduction in GHG emissions by 2030.
- **Russia** aims to reduce GHG emissions to 70% of the 1990 level by 2030.
- **Saudi Arabia** plans to reduce and avoid GHG emissions by 278 million tonnes of carbon dioxide equivalent annually by 2030, with 2019 as the base year.

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- **South Africa** aims to keep GHG emissions within a range of 350-420 MtCO₂e in 2030.
- **South Korea** intends to reduce total national GHG emissions by 40% from the 2018 level by 2030.
- **Turkey** plans to reduce GHG emissions by 41% through 2030 compared to a business-as-usual scenario based on the 2012 base year.
- The **UK** aims to reduce economy-wide GHG emissions by at least 68% by 2030 compared to 1990 levels.
- The **US** has set an economy-wide target of reducing net GHG emissions by 50-52% below 2005 levels by 2030.

What are NDCs?

- NDC stands for "Nationally Determined Contribution," which is a country's plan to achieve its climate goals.
- The Paris Agreement, adopted in 2015, outlines the framework for NDCs.
- Article 4, paragraph 2 of the Paris Agreement states that each country must prepare, communicate, and maintain successive NDCs to work towards their climate objectives.
- NDCs are submitted to the United Nations Framework Convention on Climate Change (UNFCCC) secretariat every five years.
- In August 2022, India formally updated its NDC to the UNFCCC, and this update was approved by the Union Cabinet.
- India's updated NDC represents a significant step towards the country's aim to achieve net-zero emissions by the year 2070.

Developments and Observations at G-20 Summit 2023

- G-20 urges developed countries to double climate finance for adaptation by 2025.
- Next round of NDCs to be informed by COP 28 outcomes.
- New Delhi Declaration calls for climate-resilient development, lacks specific goals.
- Focus on aligning NDC targets with Paris Agreement's temperature goals.
- Acknowledgment of climate impacts on women and girls, commitment to their participation.
- UN Secretary-General calls for strong G-20 action on the climate crisis.
- Many G-20 countries not on track to achieve net-zero emissions.
- Seven G-20 nations responsible for half of global GHG emissions in 2020.
- G-20 collectively accounts for 75% of global GHG emissions.

INDIA'S 'PANCHAMRIT' AT COP26

by Prime Minister Narendra Modi

1. Reach non-fossil energy capacity to 500GW by 2030
2. Fulfil 50% energy requirements via RE by 2030
3. Reduce 1 bn carbon emissions by 2030
4. Reduce carbon intensity >45% by 2030
5. Achieve the target of Net-Zero by 2070

NEWS IN BETWEEN THE LINES

Nipah Virus



What is Nipah Virus?

Nipah virus (NiV) is a zoonotic illness, meaning it is transmitted from animals to humans.

Virus Classification: The Nipah virus is an RNA (Ribonucleic acid) virus belonging to the family Paramyxoviridae and the genus Henipavirus. It is closely related to the Hendra virus.

Origin: Nipah virus was first identified during outbreaks in Malaysia and Singapore in 1998 and 1999.

Hosts: Initially found in domestic pigs, Nipah virus can infect various domestic animals, including dogs, cats, goats, horses and sheep.

Transmission: The primary natural reservoir hosts for Nipah and Hendra viruses are fruit bats, commonly known as 'flying foxes,' belonging to the genus Pteropus.

Symptoms: Symptoms include fever, headache, drowsiness, disorientation, mental confusion, coma and, in severe cases, death.

Treatment: Supportive care and management of symptoms are the primary approaches used in treating affected individuals.

Bhoj Wetland



About:

- The Bhoj Wetland is situated in the Indian state of Madhya Pradesh, specifically in the capital city of Bhopal.
- The Bhoj wetland, also known as Bhopal Lake, is a Ramsar site, designated as a wetland of international importance under the Convention of Wetlands signed in 1971.
- Bhoj wetland received Ramsar site status in 2002, highlighting its global significance for conservation.
- Environment Protection Act, 1986, enacted to safeguard the environment and empower the Central Government to prevent pollution and address environmental issues.
- The wetland comprises two major lakes - the Upper Lake and the Lower Lake. These two lakes together form the Bhoj Wetland.
- The wetland is rich in biodiversity, hosting macrophytes, phytoplankton, zooplankton, various fish species, resident and migratory birds, insects, reptiles and amphibians.
- Recent concerns have arisen about the damage inflicted on the Bhoj Wetland, particularly due to activities such as the operation of cruise vessels and motor-propelled boats.

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Black Holes



Formation: Black holes form from massive star supernova explosions.

Extreme Density: They have exceptionally high density, making them incredibly compact.

Gravitational Force: Black holes possess extremely strong gravity, even light cannot escape.

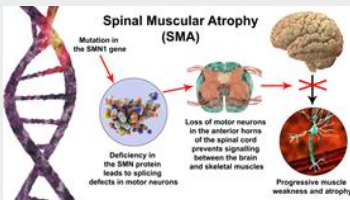
Event Horizon: The boundary of a black hole is the "event horizon," allowing nothing to escape from it.

Identification: Astronomers identify them by observing gravitational effects on nearby stars.

X-ray Emission: Black holes emit X-rays when pulling matter from nearby stars.

Cygnus X-1: A known black hole in Cygnus with an estimated mass six times that of the Sun.

Spinal Muscular Atrophy



What is Spinal Muscular Atrophy?

Spinal Muscular Atrophy (SMA) is a genetic neurological disorder characterized by the progressive loss of nerve cells in the spinal cord, leading to muscle weakness. It is caused by a defect in the SMN1 gene.

Role of SMN Protein: SMN1 gene produces the SMN protein, crucial for nerve cell function in the spinal cord.

Impact on Muscles: Reduced SMN protein leads to gradual death of anterior horn cells in the spinal cord.

Types of SMA: SMA is categorized into three types based on severity:

- SMA Type 1: Most severe, no independent sitting.
- SMA Type 2: Sitting without support but no independent walking.
- SMA Type 3: Milder form, individuals can walk independently but with limitations.

SMA Treatment: Three treatment options available:

- **Spinraza (Nusinersen):** Increases SMN protein levels via spinal injection.
- **Zolgensma:** Administered as a single-dose intravenous infusion, approved for children under two.
- **Risdiplam:** Oral treatment, taken daily for life, approved in 2020.

India's Gift Hamper



During the G20 Summit in Delhi, India presented world leaders with a gift hamper highlighting the country's rich crafts and traditions.

Handcrafted Items: The hamper included various handcrafted items sourced from different regions of India.

Exquisite Chest (Sandook): All items were elegantly packed in a chest (sandook) with intricate brass detailing, representing Indian craftsmanship.

Sheesham Wood: The chest was handcrafted using sheesham (Indian rosewood), renowned for its durability and grain pattern.

Contents of the Hamper: The hamper featured a diverse range of items, including:

- Saffron from Jammu and Kashmir, known as the world's costliest spice.
- Tea varieties from Darjeeling and Nilgiris.
- Araku coffee from organic plantations in Andhra Pradesh.
- Special honey from the Sundarbans mangrove forest.
- Zighrana Ittar from Kannauj, Uttar Pradesh, showcasing India's exquisite perfume-making tradition.
- Kashmiri Pashmina shawl, sourced from unique Changthangi goats.
- Khadi scarf, symbolizing India's freedom struggle and sustainable fashion.

Mundra Port



Recently, the Directorate of Revenue Intelligence (DRI) seized historical artefacts and antique furniture with an estimated market value of over Rs 26.8 crore at Mundra port in Gujarat's Kutch.

About Mundra Port:

- Mundra Port is located on the northern shores of the Gulf of Kutch in Gujarat, India.
- It was initially operated by Mundra Port and Special Economic Zone Limited (MPSEZ), owned by the Adani Group. Later, it expanded into Adani Ports & SEZ Limited (APSEZ).
- It was incorporated as Gujarat Adani Port Limited (GAPL) in 1998 and began operations in 2001.
- It was later merged into Mundra Port and Special Economic Zone Limited and renamed Adani Ports and Special Economic Zone Limited (APSEZ) in 2012.

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	About Directorate of Revenue Intelligence (DRI): ➤ DRI is India's premier intelligence and enforcement agency for anti-smuggling matters, operating under the Central Board of Indirect Taxes & Customs (CBIC), Government of India. ➤ It was established on December 4, 1957. ➤ DRI is headquartered in New Delhi and comprises 12 Zonal Units, 35 Regional Units and 15 Sub-regional Units across the country.
Place in News Libya	Libya (Capital: Tripoli) Recently, eastern Libya has been struck by catastrophic floods, resulting in over 5,300 people feared dead and thousands missing. Location: Libya is located in Northern Africa, bordered by the Mediterranean Sea to the north. Political Boundries: It shares land borders with Egypt to the east, Sudan to the southeast, Chad and Niger to the south, Algeria to the west and Tunisia to the northwest. Languages: Arabic is the major language spoken in Libya. Currency: Libyan dinar Historical Timeline: Independence: Libya gained independence in 1951. Oil Wealth: Soon after independence, the discovery of oil brought immense wealth to the country. Gaddafi's Rule: Colonel Muammar Gaddafi seized power in 1969 and ruled for four decades. 2011 Revolution: Gaddafi was toppled in 2011 following an armed rebellion with Western military intervention. 

POINTS TO PONDER

- ❖ Which ministry/department will act as the nodal ministry/department for Special Campaign 3.0? - Department of Administrative Reforms and Public Grievances
- ❖ Who has been given the law, "bad money drives out good"? - Thomas Gresham
- ❖ Who has been appointed as the new VC of NASSCOM? - Sindhu Gangadharan
- ❖ Which range of mountains are found in the northern region of Africa? - Atlas mountains
- ❖ Which organization gives the Shanti Swarup Bhatnagar Award? - Council of Scientific and Industrial Research

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